



# **Sixth Patient Report of the National Emergency Laparotomy Audit (NELA)**

December 2018 to November 2019  
Supplementary Tables and Figures

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## **Contents**

## 1 Key messages

## 2 Introduction

Figure 2.1 Number of cases recorded and locked in the Year 6 of the Audit

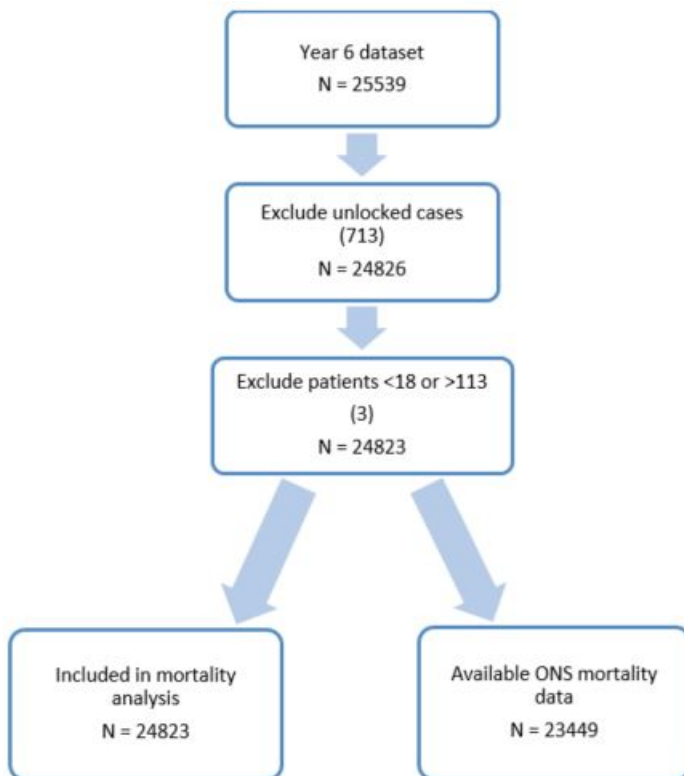
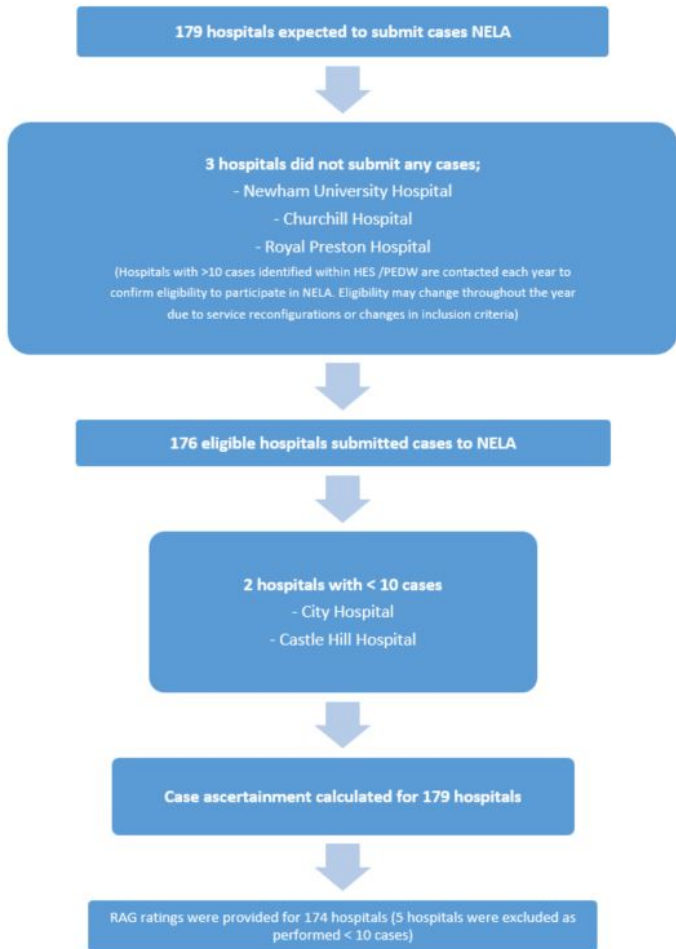
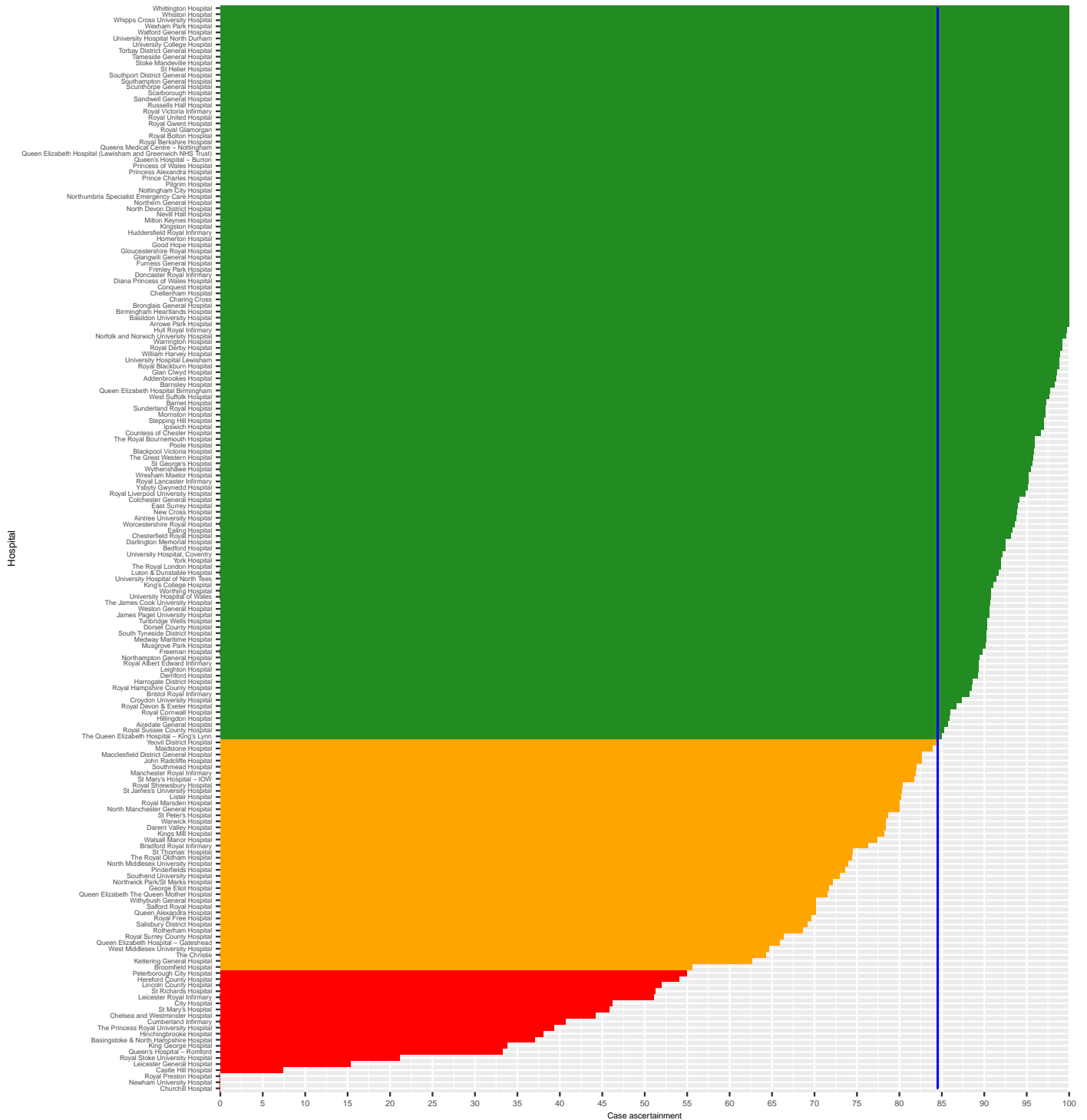


Figure 2.2 Eligible Hospitals included in the data analysis



### 3 Key findings of the Sixth National Emergency Laparotomy Audit

#### 3.2 Case ascertainment in each participating hospital with indication of National mean (blue line)



## 4 Preoperative care

### 4.1 Who has emergency laparotomy surgery?

Table 4.1.1 Gender by NELA audit year

Gender	Year 1 (n(%))	Year 2 (n(%))	Year 3 (n(%))	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Female	10628 (51.53)	12295 (52.12)	13049 (51.56)	12528 (51.38)	12713 (51.43)	12994 (52.35)
Male	9995 (48.47)	11296 (47.88)	12257 (48.44)	11855 (48.62)	12005 (48.57)	11829 (47.65)

Table 4.1.2 Number of patients by Age group, in each NELA Audit year

Age (years)	Year 1 (n(%))	Year 2 (n(%))	Year 3 (n(%))	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
18-24	627 (3)	704 (3)	717 (2.8)	728 (3)	629 (2.5)	584 (2.4)
25-34	978 (4.7)	1135 (4.8)	1301 (5.1)	1234 (5.1)	1249 (5.1)	1265 (5.1)
35-44	1462 (7.1)	1618 (6.9)	1834 (7.2)	1680 (6.9)	1812 (7.3)	1754 (7.1)
45-54	2479 (12)	2961 (12.6)	3121 (12.3)	3023 (12.4)	3063 (12.4)	3045 (12.3)
55-64	3256 (15.8)	3760 (15.9)	4078 (16.1)	4069 (16.7)	4279 (17.3)	4256 (17.1)
>=65	11821 (57.3)	13413 (56.9)	14255 (56.3)	13649 (56)	13686 (55.4)	13919 (56.1)

Table 4.1.3 Number of patients by ASA Score, in each NELA Audit year

ASA Score	Year 1 (n(%))	Year 2 (n(%))	Year 3 (n(%))	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
1	2109 (10.2)	2426 (10.3)	2607 (10.3)	2401 (9.8)	2291 (9.3)	2412 (9.7)
2	6939 (33.6)	8150 (34.5)	8919 (35.2)	8658 (35.5)	8862 (35.9)	8970 (36.1)
3	7300 (35.4)	8327 (35.3)	8942 (35.3)	8788 (36)	8908 (36)	9015 (36.3)
4	3830 (18.6)	4216 (17.9)	4326 (17.1)	4093 (16.8)	4204 (17)	4074 (16.4)
5	445 (2.2)	472 (2)	512 (2)	443 (1.8)	453 (1.8)	352 (1.4)

Table 4.1.4 Urgency of Surgery by NELA audit year

Urgency of Surgery	Year 1 (n(%))	Year 2 (n(%))	Year 3 (n(%))	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
<2 hours	3027 (14.7)	2992 (12.7)	2910 (11.5)	2793 (11.5)	2870 (11.6)	2798 (11.3)
2-6 hours	6833 (33.1)	9111 (38.6)	9751 (38.5)	9152 (37.5)	9498 (38.4)	9626 (38.8)
6-18 hours	5153 (25)	7422 (31.5)	8281 (32.7)	8229 (33.7)	8086 (32.7)	8144 (32.8)
>18 hours	2823 (13.7)	3948 (16.7)	4277 (16.9)	4149 (17)	4214 (17)	4249 (17.1)
Missing	2787 (13.5)	118 (0.5)	87 (0.3)	60 (0.2)	50 (0.2)	6 (0)

Table 4.1.5 Calculated preoperative NELA risk of death, by NELA audit year

Audit Year	Total patients	Preop NELA Mortality risk - High	Preop NELA Mortality risk - Low	Preop NELA Mortality risk - Missing
4	24383	10967 (45%)	12467 (51.1%)	949 (3.9%)
5	24718	11188 (45.3%)	13072 (52.9%)	458 (1.9%)
6	24823	11377 (45.8%)	13215 (53.2%)	231 (0.9%)

Table 4.1.6 Elective and Emergency admission, by NELA audit year

Admission Type	Year 1 (n(%))	Year 2 (n(%))	Year 3 (n(%))	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Elective	1524 (7.4)	1598 (6.8)	1642 (6.5)	1527 (6.3)	1471 (6)	1464 (5.9)
Emergency	19099 (92.6)	21993 (93.2)	23664 (93.5)	22838 (93.7)	23233 (94)	23359 (94.1)

Table 4.1.7 First Specialty at admission, by NELA audit year

Specialty at Admission	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Gastroenterology	531 (2.2)	558 (2.3)	572 (2.3)
Elderly Care	75 (0.3)	80 (0.3)	72 (0.3)
Other	1099 (4.5)	1041 (4.2)	968 (3.9)
General Medicine	2568 (10.5)	2502 (10.1)	2476 (10)
General Surgery	19837 (81.4)	20170 (81.6)	20393 (82.2)
Missing	273 (1.1)	367 (1.5)	342 (1.4)

Table 4.1.8 ONS 30-day and 90-day mortality, by admitting specialty

First Specialty	Total patients (n)	ONS 30d Mortality	ONS 90d Mortality
Gastroenterology	572 (2.3%)	8.2	11.2
Elderly Care	72 (0.3%)	25.0	30.6
Other	968 (3.9%)	16.0	23.9
General Medicine	2476 (10%)	16.8	22.7
General Surgery	20393 (82.2%)	8.1	11.3
Missing	342 (1.4%)	5.8	9.6



Table 4.1.9 Length of stay (LOS) by admitting specialty  
(Excludes patients who died or still in hospital at 60 days)

First Specialty	Mean LOS	Median LOS	IQR
Gastroenterology	16	11	[7-19]
Elderly Care	23	18	[12-24]
Other	22	16	[9-28]
General Medicine	19	13	[8-23]
General Surgery	15	10	[6-17]
Missing	14	10	[7-16]

Table 4.1.10 Calculated preoperative NELA risk, by admitting specialty

First Specialty	Preoperative NELA Mortality risk	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Gastroenterology	High	183 (34.5)	176 (31.5)	192 (33.6)
Gastroenterology	Low	348 (65.5)	382 (68.5)	380 (66.4)
Elderly Care	High	71 (94.7)	71 (88.8)	63 (87.5)
Elderly Care	Low	4 (5.3)	9 (11.2)	9 (12.5)
Other	High	655 (59.6)	616 (59.2)	574 (59.3)
Other	Low	444 (40.4)	425 (40.8)	394 (40.7)
General Medicine	High	1676 (65.3)	1590 (63.5)	1542 (62.3)
General Medicine	Low	892 (34.7)	912 (36.5)	934 (37.7)
General Surgery	High	9072 (45.7)	9027 (44.8)	9100 (44.6)
General Surgery	Low	10765 (54.3)	11143 (55.2)	11293 (55.4)
Missing	High	259 (94.9)	166 (45.2)	137 (40.1)
Missing	Low	14 (5.1)	201 (54.8)	205 (59.9)

Table 4.1.11 Preoperative documented risk of death, by admission specialty

First Specialty	Documented risk	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Gastroenterology	High	178 (33.5)	193 (34.6)	187 (32.7)
Gastroenterology	Low	194 (36.5)	237 (42.5)	266 (46.5)
Gastroenterology	Not Documented	159 (29.9)	128 (22.9)	119 (20.8)
Elderly Care	High	54 (72)	53 (66.2)	54 (75)
Elderly Care	Low	7 (9.3)	13 (16.2)	8 (11.1)
Elderly Care	Not Documented	14 (18.7)	14 (17.5)	10 (13.9)
Other	High	580 (52.8)	565 (54.3)	533 (55.1)
Other	Low	225 (20.5)	211 (20.3)	273 (28.2)
Other	Not Documented	294 (26.8)	265 (25.5)	162 (16.7)
General Medicine	High	1438 (56)	1435 (57.4)	1411 (57)
General Medicine	Low	569 (22.2)	547 (21.9)	701 (28.3)
General Medicine	Not Documented	561 (21.8)	520 (20.8)	364 (14.7)
General Surgery	High	8042 (40.5)	8574 (42.5)	8645 (42.4)
General Surgery	Low	6683 (33.7)	6952 (34.5)	8468 (41.5)
General Surgery	Not Documented	5112 (25.8)	4644 (23)	3280 (16.1)
Missing	High	126 (46.2)	158 (43.1)	150 (43.9)
Missing	Low	62 (22.7)	144 (39.2)	153 (44.7)
Missing	Not Documented	85 (31.1)	65 (17.7)	39 (11.4)

Table 4.1.12 Time in hours from admission to Consultant Surgeon review, by admitting specialty

First Specialty	Number of patients (n)	Mean	Median (IQR)
Gastroenterology	572	149.7	73.2 [23.3-181.8]
Elderly Care	72	156.8	68 [35.1-166.7]
Other	968	169.0	72.1 [20.5-178.4]
General Medicine	2476	105.3	45.9 [19.8-114.3]
General Surgery	20393	31.3	11 [5.5-18.9]
Missing	342	42.7	12 [5.7-20.7]

Table 4.1.13 Admitting specialty by Age group (<65 & ≥ 65)

First Specialty	Age Group	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Gastroenterology	<65	346 (65.2)	384 (68.8)	381 (66.6)
Gastroenterology	>=65	185 (34.8)	174 (31.2)	191 (33.4)
Elderly Care	<65	1 (1.3)	1 (1.2)	NA
Elderly Care	>=65	74 (98.7)	79 (98.8)	72 (100)
Other	<65	546 (49.7)	542 (52.1)	520 (53.7)
Other	>=65	553 (50.3)	499 (47.9)	448 (46.3)
General Medicine	<65	995 (38.7)	1006 (40.2)	998 (40.3)
General Medicine	>=65	1573 (61.3)	1496 (59.8)	1478 (59.7)
General Surgery	<65	8718 (43.9)	8935 (44.3)	8852 (43.4)
General Surgery	>=65	11119 (56.1)	11235 (55.7)	11541 (56.6)
Missing	<65	128 (46.9)	164 (44.7)	153 (44.7)
Missing	>=65	145 (53.1)	203 (55.3)	189 (55.3)

Table 4.1.14 Admitting specialty by Age group

First Specialty	Age Group	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Gastroenterology	18-24	64 (12.1)	63 (11.3)	59 (10.3)
Gastroenterology	25-34	77 (14.5)	94 (16.8)	93 (16.3)
Gastroenterology	35-44	60 (11.3)	74 (13.3)	72 (12.6)
Gastroenterology	45-54	73 (13.7)	83 (14.9)	79 (13.8)
Gastroenterology	55-64	72 (13.6)	70 (12.5)	78 (13.6)
Gastroenterology	>=65	185 (34.8)	174 (31.2)	191 (33.4)
Elderly Care	35-44	1 (1.3)	NA	NA
Elderly Care	55-64	NA	1 (1.2)	NA
Elderly Care	>=65	74 (98.7)	79 (98.8)	72 (100)
Other	18-24	23 (2.1)	32 (3.1)	23 (2.4)
Other	25-34	81 (7.4)	73 (7)	87 (9)
Other	35-44	108 (9.8)	91 (8.7)	100 (10.3)
Other	45-54	149 (13.6)	150 (14.4)	135 (13.9)
Other	55-64	185 (16.8)	196 (18.8)	175 (18.1)
Other	>=65	553 (50.3)	499 (47.9)	448 (46.3)
General Medicine	18-24	79 (3.1)	78 (3.1)	83 (3.4)
General Medicine	25-34	153 (6)	140 (5.6)	118 (4.8)
General Medicine	35-44	137 (5.3)	160 (6.4)	166 (6.7)
General Medicine	45-54	253 (9.9)	267 (10.7)	248 (10)
General Medicine	55-64	373 (14.5)	361 (14.4)	383 (15.5)
General Medicine	>=65	1573 (61.3)	1496 (59.8)	1478 (59.7)
General Surgery	18-24	551 (2.8)	451 (2.2)	410 (2)
General Surgery	25-34	904 (4.6)	929 (4.6)	945 (4.6)
General Surgery	35-44	1355 (6.8)	1456 (7.2)	1391 (6.8)
General Surgery	45-54	2519 (12.7)	2517 (12.5)	2547 (12.5)
General Surgery	55-64	3389 (17.1)	3582 (17.8)	3559 (17.5)
General Surgery	>=65	11119 (56.1)	11235 (55.7)	11541 (56.6)
Missing	18-24	11 (4)	5 (1.4)	9 (2.6)
Missing	25-34	19 (7)	13 (3.5)	22 (6.4)
Missing	35-44	19 (7)	31 (8.4)	25 (7.3)
Missing	45-54	29 (10.6)	46 (12.5)	36 (10.5)
Missing	55-64	50 (18.3)	69 (18.8)	61 (17.8)
Missing	>=65	145 (53.1)	203 (55.3)	189 (55.3)

Table 4.1.15 Admitting specialty by ASA Score

First Specialty	ASA Score	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Gastroenterology	1	24 (4.5)	23 (4.1)	18 (3.1)
Gastroenterology	2	223 (42)	234 (41.9)	237 (41.4)
Gastroenterology	3	204 (38.4)	223 (40)	225 (39.3)
Gastroenterology	4	66 (12.4)	65 (11.6)	84 (14.7)
Gastroenterology	5	14 (2.6)	13 (2.3)	8 (1.4)
Elderly Care	1	1 (1.3)	NA	NA
Elderly Care	2	10 (13.3)	13 (16.2)	11 (15.3)
Elderly Care	3	33 (44)	33 (41.2)	32 (44.4)
Elderly Care	4	28 (37.3)	33 (41.2)	28 (38.9)
Elderly Care	5	3 (4)	1 (1.2)	1 (1.4)
Other	1	96 (8.7)	82 (7.9)	96 (9.9)
Other	2	244 (22.2)	207 (19.9)	187 (19.3)
Other	3	366 (33.3)	380 (36.5)	332 (34.3)
Other	4	339 (30.8)	310 (29.8)	309 (31.9)
Other	5	54 (4.9)	62 (6)	44 (4.5)
General Medicine	1	109 (4.2)	93 (3.7)	96 (3.9)
General Medicine	2	628 (24.5)	638 (25.5)	639 (25.8)
General Medicine	3	1036 (40.3)	1000 (40)	1014 (41)
General Medicine	4	697 (27.1)	689 (27.5)	653 (26.4)
General Medicine	5	98 (3.8)	82 (3.3)	74 (3)
General Surgery	1	2156 (10.9)	2055 (10.2)	2171 (10.6)
General Surgery	2	7462 (37.6)	7631 (37.8)	7753 (38)
General Surgery	3	7045 (35.5)	7147 (35.4)	7300 (35.8)
General Surgery	4	2903 (14.6)	3047 (15.1)	2949 (14.5)
General Surgery	5	271 (1.4)	290 (1.4)	220 (1.1)
Missing	1	15 (5.5)	38 (10.4)	31 (9.1)
Missing	2	91 (33.3)	139 (37.9)	143 (41.8)
Missing	3	104 (38.1)	125 (34.1)	112 (32.7)
Missing	4	60 (22)	60 (16.3)	51 (14.9)
Missing	5	3 (1.1)	5 (1.4)	5 (1.5)

Table 4.1.16 CT scan reported by admission specialty

First Specialty	CT reported - Yr4	CT reported - Yr5	CT reported - Yr6
Gastroenterology	61.6%	60%	60.8%
Elderly Care	82.7%	78.8%	73.6%
Other	65.2%	66.1%	67%
General Medicine	69.7%	67.6%	68.8%
General Surgery	63.2%	61.5%	61.3%
Missing	73.3%	66.2%	64.9%

Table 4.1.17 Preoperative documented risk of death by admitting specialty

First Specialty	Documented Risk - Yr4	Documented Risk - Yr5	Documented Risk - Yr6
Gastroenterology	70.1%	77.1%	79.2%
Elderly Care	81.3%	82.5%	86.1%
Other	73.2%	74.5%	83.3%
General Medicine	78.2%	79.2%	85.3%
General Surgery	74.2%	77%	83.9%
Missing	68.9%	82.3%	88.6%

Table 4.1.18 Consultant Surgeon presence in theatre for High risk ( $\geq 5\%$ ) patients, by admitting specialty

First Specialty	Year 4	Year 5	Year 6
Gastroenterology	93%	95.7%	96%
Elderly Care	85.9%	90.1%	98.4%
Other	93.3%	93%	95.7%
General Medicine	93%	93.4%	95.6%
General Surgery	91.4%	92.4%	94.5%
Missing	90%	92.4%	97.1%

Table 4.1.19 Consultant Anaesthetist presence for High risk ( $\geq 5\%$ ) patients, by admitting specialty

First Specialty	Year 4	Year 5	Year 6
Gastroenterology	92.5%	90.9%	91.5%
Elderly Care	78.9%	85.9%	92.1%
Other	87.7%	90.7%	93.6%
General Medicine	91.1%	91.8%	93.8%
General Surgery	88%	88.5%	92%
Missing	79.2%	84.1%	92%

Table 4.1.20 Consultant Surgeon and Anaesthetist presence in theatre for High risk ( $\geq 5\%$ ) patients, by admitting specialty

First Specialty	Year 4	Year 5	Year 6
Gastroenterology	87.1%	89.3%	89.1%
Elderly Care	71.8%	77.5%	90.5%
Other	82.7%	86.1%	90.4%
General Medicine	85.6%	86.7%	90.3%
General Surgery	81.9%	83%	88%
Missing	72.6%	79.4%	90.5%

Table 4.1.21 Timeliness of arrival in theatre by First specialty

First Specialty	Year 4	Year 5	Year 6
Gastroenterology	69.5%	74%	72.8%
Elderly Care	73.7%	90%	83.9%
Other	82.2%	80%	80.3%
General Medicine	80.1%	79.2%	80.6%
General Surgery	83.1%	83.1%	83.4%
Missing	76.6%	87.2%	83.6%

Table 4.1.22 Postoperative High risk patients (NELA/Clinical Judgement) admitted to CCU by First specialty (Excludes patients on End of Life pathways or who died in theatre)

First Specialty	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Gastroenterology	176 ( 81.2 )	147 ( 84.4 )	168 ( 85.1 )
Elderly Care	62 ( 74.2 )	63 ( 85.7 )	52 ( 78.8 )
Other	608 ( 87.3 )	552 ( 85.9 )	494 ( 89.9 )
General Medicine	1544 ( 83.9 )	1387 ( 84.8 )	1324 ( 87.4 )
General Surgery	8681 ( 78.6 )	8147 ( 80.7 )	8231 ( 85.1 )
Missing	171 ( 74.9 )	144 ( 91.7 )	126 ( 95.2 )

Table 4.1.23 Geriatric assessment by First specialty

First Specialty	Year 4	Year 5	Year 6
Gastroenterology	22.8%	27.7%	30.6%
Elderly Care	92.6%	89.2%	51.5%
Other	27.7%	37.7%	29.3%
General Medicine	43.5%	46%	34.6%
General Surgery	22%	23.5%	27.1%
Missing	9.1%	11.8%	31.2%

Table 4.1.24 Return to theatre by First Specialty

First Specialty	Year 4	Year 5	Year 6
Gastroenterology	7.7%	7.2%	6.2%
Elderly Care	0%	5.1%	1.4%
Other	9%	7%	7.5%
General Medicine	6.5%	5.3%	5%
General Surgery	5.8%	5.3%	5%
Missing	10.7%	8%	4.1%

Table 4.1.25 Unplanned admission to CCU by First Specialty

First Specialty	Year 4	Year 5	Year 6
Gastroenterology	4.2%	3.6%	3.7%
Elderly Care	0%	1.3%	0%
Other	4.2%	4.8%	4.5%
General Medicine	3.9%	3.4%	3.3%
General Surgery	3.3%	3.4%	2.9%
Missing	4.8%	1.9%	1.8%

Table 4.1.26 Initial Route of Admission, by NELA Audit Year

Initial Route	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
Assessed initially in emergency department	17054 (69.9)	17244 (69.8)	18058 (72.7)
Assessed initially in 'front of house' acute surgical assessment unit	2512 (10.3)	2353 (9.5)	2193 (8.8)
Direct referral to ward by GP	1646 (6.8)	1426 (5.8)	1129 (4.5)
Direct admission from clinic	717 (2.9)	697 (2.8)	659 (2.7)
Hospital transfer	595 (2.4)	583 (2.4)	570 (2.3)
	1859 (7.6)	2415 (9.8)	2214 (8.9)



## 4.2 Timeliness of arrival in theatre

Table 4.2.1 Missing date and/or time in arrival to theatre or decision to operate dates

Audit Year	Total patients	Date or time missing in Arrival to theatre	Date or time missing in Decision to operate	Date or time missing in Arrival to theatre or Decision to operate	Total missing (%)
1	20623	848	3724	4210	20.4
2	23591	1023	3359	3965	16.8
3	25306	1088	3370	3932	15.5
4	24383	857	2955	3471	14.2
5	24718	804	2795	3250	13.1
6	24823	737	2432	2894	11.7

Table 4.2.2 Timeliness of arrival in theatre by Urgency of Surgery (<2hours)

Audit Year	NCEPOD met (n)	NCEPOD met (%)	NCEPOD not met (%)
1	1185	69.2	30.8%
2	1862	71.8	28.2%
3	1989	75.8	24.2%
4	1842	73.1	26.9%
5	1877	72.6	27.4%
6	1858	73.2	26.8%

Table 4.2.3 Timeliness of arrival in theatre by Urgency of Surgery

Urgency of Surgery	Year 4 (n(%))	Year 5 (n(%))	Year 6 (n(%))
<2 hours	1842 (73.1)	1877 (72.6)	1858 (73.2)
2-6 hours	6918 (86.4)	7326 (86.6)	7527 (86.7)
6-18 hours	5646 (81.3)	5595 (81.3)	5794 (81.6)

Table 4.2.4 Delay from decision to operate to arrival to theatre by Age Group

Age Group	NCEPOD <2h	NCEPOD 2h-6h	NCEPOD 6h-18h
18-24	57; delay = 17 (29.8%)	159; delay = 15 (9.4%)	170; delay = 32 (18.8%)
25-34	122; delay = 27 (22.1%)	449; delay = 67 (14.9%)	332; delay = 79 (23.8%)
35-44	186; delay = 47 (25.3%)	630; delay = 82 (13%)	457; delay = 96 (21%)
45-54	323; delay = 84 (26%)	1074; delay = 118 (11%)	836; delay = 142 (17%)
55-64	475; delay = 117 (24.6%)	1498; delay = 178 (11.9%)	1197; delay = 214 (17.9%)
>=65	1374; delay = 387 (28.2%)	4874; delay = 697 (14.3%)	4111; delay = 746 (18.1%)

Table 4.2.5 Delay from decision to operate to arrival to theatre for patients over 65 years old

Age Group	NCEPOD <2h	NCEPOD 2h-6h	NCEPOD 6h-18h
<65	1163; delay = 292 (25.1%)	3810; delay = 460 (12.1%)	2992; delay = 563 (18.8%)
>=65	1374; delay = 387 (28.2%)	4874; delay = 697 (14.3%)	4111; delay = 746 (18.1%)

Table 4.2.6 Proportion of cases with time of arrival in theatre within Urgency of Surgery, by ASA score

ASA Score	<2 hours (n)	NCEPOD met (%)	2-6 hours (n)	NCEPOD met (%)	6-18 hours (n)	NCEPOD met (%)
1	200	145 (72.5)	863	759 (87.9)	770	648 (84.2)
2	594	422 (71)	2904	2518 (86.7)	2857	2347 (82.1)
3	725	514 (70.9)	3096	2640 (85.3)	2723	2181 (80.1)
4	849	642 (75.6)	1705	1505 (88.3)	741	608 (82.1)
5	169	135 (79.9)	116	105 (90.5)	12	10 (83.3)

Table 4.2.7 Proportion of cases with time of arrival in theatre within Urgency of Surgery, by Preoperative Risk of Death

Preoperative Risk of Death	<2 hours (n)	NCEPOD met (%)	2-6 hours (n)	NCEPOD met (%)	6-18 hours (n)	NCEPOD met (%)
High	1756	1294 (73.7)	4394	3853 (87.7)	2608	2135 (81.9)
Low	492	348 (70.7)	3167	2735 (86.4)	3347	2753 (82.3)
Not Documented	289	216 (74.7)	1123	939 (83.6)	1148	906 (78.9)

Table 4.2.8 Proportion of cases with time to theatre within Urgency of Surgery, by Time of the day decision to operate.

Time of day of decision to operate	<2 hours (n)	NCEPOD met (%)	2-6 hours (n)	NCEPOD met (%)	6-18 hours (n)	NCEPOD met (%)
0000-0759	587	474 (80.7)	1132	971 (85.8)	428	405 (94.6)
0800-1159	529	348 (65.8)	2827	2333 (82.5)	3578	3072 (85.9)
1200-1759	737	519 (70.4)	2734	2463 (90.1)	2021	1415 (70)
1800-2359	684	517 (75.6)	1991	1760 (88.4)	1076	902 (83.8)

Table 4.2.9 Proportion of cases with time of arrival in theatre within Urgency of surgery, reviewed by a Consultant Surgeon

Preoperative review by Consultant Surgeon	<2 hours (n)	NCEPOD met (%)	2-6 hours (n)	NCEPOD met (%)	6-18 hours (n)	NCEPOD met (%)
Consultant discussion	835	192 (23%)	2174	220 (10.1%)	913	133 (14.6%)
Consultant in person	1598	460 (28.8%)	6320	901 (14.3%)	6027	1152 (19.1%)
Junior review	38	9 (23.7%)	82	20 (24.4%)	71	9 (12.7%)
Unknown	66	18 (27.3%)	108	16 (14.8%)	92	15 (16.3%)

Table 4.2.10 Time of the day of decision to operate by preoperative risk of death and timeliness of arrival in theatre

Time of Day decision to operate	High Risk	High Risk NCEPOD met (%)	Low Risk	Low Risk NCEPOD met (%)	Not Documented	Not Documented NCEPOD met (%)
0000-0759	1174	1027 (87.5)	727	622 (85.6)	246	201 (81.7)
0800-1159	2914	2399 (82.3)	2901	2445 (84.3)	1119	909 (81.2)
1200-1759	2701	2182 (80.8)	2066	1652 (80)	725	563 (77.7)
1800-2359	1969	1674 (85)	1312	1117 (85.1)	470	388 (82.6)

## 4.3 Radiology

Table 4.3.1 Proportion of patients who underwent a preoperative CT scan per year of NELA data collection

Audit Year	Total patients	CT scan performed (n)	CT performed (%)
1	20623	16512	80.1
2	23591	19537	82.8
3	25306	21515	85.0
4	24383	21233	87.1
5	24718	21884	88.5
6	24823	22459	90.5

Table 4.3.2 Proportion of patients who had a preoperative CT scan reported per year of NELA data collection

Audit Year	Total patients	CT scan reported (n)	CT reported (%)
1	20623	13887	67.3
2	23591	16981	72.0
3	25306	18991	75.0
4	24383	15642	64.2
5	24718	15433	62.4
6	24823	15468	62.3

Table 4.3.3 Preoperative CT scan reporting method, by Urgency of Surgery

NCEPOD Category	In-house Cons.	In-house Regis.	Not reported pre-op	Outsourced service	Unknown
<2 hours	1356 (8.8)	332 (18.4)	8 (19)	571 (12.9)	94 (12.8)
2-6 hours	5560 (35.9)	980 (54.4)	24 (57.1)	2033 (46.1)	269 (36.7)
6-18 hours	5413 (35)	384 (21.3)	7 (16.7)	1428 (32.4)	268 (36.6)
>18 hours	3133 (20.3)	106 (5.9)	3 (7.1)	382 (8.7)	101 (13.8)

Table 4.3.4 CT scan performed and discussion had between radiologist and the requesting team

Audit Year	Total CT scan performed	Total CT discussion
4	21233	9754 (45.9%)
5	21884	9873 (45.1%)
6	22459	10153 (45.2%)

Table 4.3.5 Preoperative CT scan, by reporting radiologist and time of day of admission

<b>Time of Admission</b>	<b>Monday-Friday - In house Consultant (n(%))</b>	<b>Monday-Friday - In house Registrar (n(%))</b>	<b>Monday-Friday - Not reported (n(%))</b>	<b>Monday-Friday - Outsourced service (n(%))</b>	<b>Monday-Friday - Unknown (n(%))</b>	<b>Monday-Friday - Missing (n(%))</b>
0000-0759	2588 (65)	248 (6.2)	9 (0.2)	610 (15.3)	115 (2.9)	409 (10.3)
0800-1159	2769 (71.8)	214 (5.5)	3 (0.1)	338 (8.8)	103 (2.7)	430 (11.1)
1200-1759	4254 (64.3)	442 (6.7)	11 (0.2)	1039 (15.7)	216 (3.3)	657 (9.9)
1800-2359	2475 (54.3)	382 (8.4)	5 (0.1)	1140 (25)	142 (3.1)	413 (9.1)

<b>Time of Admission</b>	<b>Saturday-Sunday - In house Consultant (n(%))</b>	<b>Saturday-Sunday - In house Registrar (n(%))</b>	<b>Saturday-Sunday - Not reported (n(%))</b>	<b>Saturday-Sunday - Outsourced service (n(%))</b>	<b>Saturday-Sunday - Unknown (n(%))</b>	<b>Saturday-Sunday - Missing (n(%))</b>
0000-0759	781 (60.4)	91 (7)	2 (0.2)	277 (21.4)	33 (2.6)	110 (8.5)
0800-1159	761 (70.5)	91 (8.4)	3 (0.3)	128 (11.9)	24 (2.2)	73 (6.8)
1200-1759	1071 (56.1)	185 (9.7)	6 (0.3)	432 (22.6)	54 (2.8)	162 (8.5)
1800-2359	768 (50.3)	149 (9.8)	3 (0.2)	450 (29.5)	46 (3)	111 (7.3)

Table 4.3.6 Preoperative CT scan reporting method by admission weekday and time

Audit Year	Admission Weekday	Admission Time	CT reporting method	Total patients by weekday and time of admission	CT reporting (n(%))
6	Monday - Friday	Day time (8_18)	In-house Consultant	10476	7023 (67)
6	Monday - Friday	Day time (8_18)	In-house Registrar	10476	656 (6.3)
6	Monday - Friday	Day time (8_18)	not reported preoperatively	10476	14 (0.1)
6	Monday - Friday	Day time (8_18)	Outsourced service	10476	1377 (13.1)
6	Monday - Friday	Day time (8_18)	Unknown	10476	319 (3)
6	Monday - Friday	Day time (8_18)	NA	10476	1087 (10.4)
6	Monday - Friday	Out of hour (18_8)	In-house Consultant	8536	5063 (59.3)
6	Monday - Friday	Out of hour (18_8)	In-house Registrar	8536	630 (7.4)
6	Monday - Friday	Out of hour (18_8)	not reported preoperatively	8536	14 (0.2)
6	Monday - Friday	Out of hour (18_8)	Outsourced service	8536	1750 (20.5)
6	Monday - Friday	Out of hour (18_8)	Unknown	8536	257 (3)
6	Monday - Friday	Out of hour (18_8)	NA	8536	822 (9.6)
6	Saturday - Sunday	Day time (8_18)	In-house Consultant	2990	1832 (61.3)
6	Saturday - Sunday	Day time (8_18)	In-house Registrar	2990	276 (9.2)
6	Saturday - Sunday	Day time (8_18)	not reported preoperatively	2990	9 (0.3)
6	Saturday - Sunday	Day time (8_18)	Outsourced service	2990	560 (18.7)
6	Saturday - Sunday	Day time (8_18)	Unknown	2990	78 (2.6)
6	Saturday - Sunday	Day time (8_18)	NA	2990	235 (7.9)
6	Saturday - Sunday	Out of hour (18_8)	In-house Consultant	2821	1549 (54.9)
6	Saturday - Sunday	Out of hour (18_8)	In-house Registrar	2821	240 (8.5)
6	Saturday - Sunday	Out of hour (18_8)	not reported preoperatively	2821	5 (0.2)
6	Saturday - Sunday	Out of hour (18_8)	Outsourced service	2821	727 (25.8)
6	Saturday - Sunday	Out of hour (18_8)	Unknown	2821	79 (2.8)
6	Saturday - Sunday	Out of hour (18_8)	NA	2821	221 (7.8)

Table 4.3.7 CT Discrepancies by CT reporting method

CT report discrepancy	In-house Consultant	In-house Registrar	Not reported preoperatively	Outsourced service	Unknown
Discrepancy	823 (5.3)	83 (4.6)	2 (4.8)	275 (6.2)	18 (2.5)
No discrepancy	13268 (85.8)	1507 (83.6)	25 (59.5)	3679 (83.3)	335 (45.7)
Unknown	1376 (8.9)	212 (11.8)	15 (35.7)	460 (10.4)	380 (51.8)

Table 4.3.8 CT discrepancies in Findings

Audit year	Cancer	Sepsis	Ischaemia	Haemorrhage	Osbtruction	Postop Complication
4	214 (5)	473 (5.4)	210 (7.6)		403 (4.2)	41 (4.5)
5	231 (5.4)	510 (5.7)	221 (7.8)		457 (4.5)	46 (4.8)
6	205 (4.7)	495 (5.7)	236 (8)		513 (4.7)	41 (4.3)

Table 4.3.9 CT discrepancies by Urgency of Surgery

Urgency of Surgery	Discrepancy	Missing	No discrepancy	Unknown
<2 hours   (CT perf: 2361)	164 (6.9%)	NA	1929 (81.7%)	268 (11.4%)
>18 hours   (CT perf: 3725)	153 (4.1%)	NA	3215 (86.3%)	357 (9.6%)
2-6 hours   (CT perf: 8867)	505 (5.7%)	1 (0%)	7376 (83.2%)	985 (11.1%)
6-18 hours   (CT perf: 7500)	378 (5%)	NA	6290 (83.9%)	832 (11.1%)
NA   (CT perf: 6)	1 (16.7%)	NA	4 (66.7%)	1 (16.7%)

Table 4.3.10 CT discrepancies by Preoperative discussion

Audit year	CT Discussion	Discrepancy	No discrepancy	Unknown
4	No   (n: 6083)	279 (4.6%)	5572 (91.6%)	232 (3.8%)
4	Unknown   (n: 5183)	151 (2.9%)	3182 (61.4%)	1850 (35.7%)
4	Yes   (n: 9754)	663 (6.8%)	8543 (87.6%)	548 (5.6%)
5	No   (n: 6970)	329 (4.7%)	6385 (91.6%)	256 (3.7%)
5	Unknown   (n: 5039)	151 (3%)	3145 (62.4%)	1743 (34.6%)
5	Yes   (n: 9873)	693 (7%)	8644 (87.6%)	536 (5.4%)
6	No   (n: 7802)	305 (3.9%)	7146 (91.6%)	351 (4.5%)
6	Unknown   (n: 4503)	145 (3.2%)	2801 (62.2%)	1557 (34.6%)
6	Yes   (n: 10153)	751 (7.4%)	8867 (87.3%)	535 (5.3%)

Table 4.3.11 CT discrepancies by CT reporting method

Audit year	CT reporting method	Total patients (n)	CT discrepancy (n)	CT discrepancy (%)
6	In-house Consultant	15467	823	5.3
6	In-house Registrar	1802	83	4.6
6	not reported preoperatively	42	2	4.8
6	Outsourced service	4414	275	6.2
6	Unknown	733	18	2.5

## 4.4 Consultant input before surgery

Table 4.4.1 Consultant Anaesthetist preoperative review of patients according to predicted risk category

Preoperative risk of death	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Unknown	No input
High	10980	28.7	66.6	95.3	2.8	2.0
Low	9869	36.0	55.1	91.1	3.6	5.2
Not Documented	3974	32.3	49.6	81.9	9.7	8.5

Table 4.4.2 Consultant Anaesthetist preoperative review according to patient age

Age group	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Unknown	No input
18-24	584	32.9	58.4	91.3	3.8	5.0
25-34	1265	36.6	51.8	88.4	4.3	7.3
35-44	1754	34.8	54.1	88.9	5.0	6.2
45-54	3045	33.7	56.3	90.0	4.4	5.7
55-64	4256	31.9	59.3	91.2	4.5	4.4
>=65	13919	31.2	61.4	92.6	4.0	3.4

Table 4.4.3 Consultant Anaesthetist preoperative input according to ASA grade

ASA Score	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Unknown	No input
1	2412	36.1	51.5	87.6	5.3	7.1
2	8970	36.3	53.3	89.6	4.9	5.5
3	9015	31.3	61.3	92.6	3.8	3.6
4	4074	24.2	71.0	95.2	2.8	2.0
5	352	16.2	79.5	95.7	3.1	1.1

Table 4.4.4 Consultant Surgeon preoperative review

Surgeon review	Total patients (n)	%
Consultant_discussion	4634	18.7
Consultant_in_person	19315	77.8
Junior_review	218	0.9
Unknown	656	2.6

Table 4.4.5 Consultant Surgeon preoperative review according to predicted risk category of patient



Preoperative Risk of Death	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown
High	10980	20.4	77.1	97.5	0.6	1.8
Low	9869	18.0	78.7	96.7	1.0	2.4
Not Documented	3974	15.6	77.5	93.1	1.3	5.6

Table 4.4.6 Consultant Surgeon preoperative input according to patient ASA grade

ASA Score	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown
1	2412	21.8	73.4	95.2	1.7	3.2
2	8970	18.1	78.0	96.1	1.0	2.9
3	9015	16.8	79.9	96.7	0.7	2.6
4	4074	22.0	75.5	97.5	0.5	2.0
5	352	19.9	75.9	95.8	0.6	3.7

Table 4.4.7 Consultant Surgeon preoperative review according to patient age

Age group	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown
18-24	584	18.7	76.7	95.4	2.1	2.6
25-34	1265	20.7	74.2	94.9	1.4	3.7
35-44	1754	19.7	75.7	95.4	1.3	3.4
45-54	3045	18.2	78.0	96.2	1.0	2.8
55-64	4256	19.2	77.2	96.4	0.9	2.7
>=65	13919	18.3	78.6	96.9	0.7	2.4

Table 4.4.8 Preoperative Consultant Intensivist input by age group (<65 & ≥ 65 years old)

Age group	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown	No input
<65	10904	32.9	12.3	45.2	6.5	6.8	41.5
>=65	13919	46.0	15.9	61.9	7.0	6.9	24.2

Table 4.4.9 Consultant Intensivist preoperative review according to predicted risk category of patient

Preoperative Risk of Death	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown	No input
High	10980	52.7	21.8	74.5	8.4	5.2	11.9
Low	9869	31.4	7.6	39.0	6.1	6.1	48.8
Not Documented	3974	27.8	10.5	38.3	4.0	13.4	44.4

Table 4.4.10 Consultant Intensivist preoperative input according to ASA grade

ASA Score	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown	No input
1	2412	24.3	6.7	31.0	5.9	7.4	55.7
2	8970	33.7	8.2	41.9	5.9	7.7	44.4
3	9015	47.8	13.1	60.9	7.3	7.1	24.7
4	4074	48.0	31.2	79.2	7.9	4.6	8.2
5	352	30.7	56.8	87.5	7.7	3.1	1.7

Table 4.4.11 Consultant Surgeon involvement according to admission time

Admission time	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown
0000-0759	5273	17.1	79.6	96.7	0.9	2.4
0800-1159	4937	15.7	80.7	96.4	0.6	2.9
1200-1759	8529	18.8	77.6	96.4	0.9	2.7
1800-2359	6084	22.3	74.2	96.5	1.0	2.5

Table 4.4.12 Consultant Surgeon involvement according to day of the week

Admission day	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown
Mon	4101	17.9	78.2	96.1	0.9	3.0
Tue	3768	18.2	78.2	96.4	0.8	2.8
Wed	3651	18.3	78.2	96.5	0.9	2.6
Thu	3700	17.7	78.9	96.6	0.9	2.5
Fri	3792	17.6	79.1	96.7	0.9	2.3
Sat	2858	21.1	75.2	96.3	1.0	2.7
Sun	2953	20.8	75.9	96.7	0.8	2.5

Table 4.4.13 Consultant Anaesthetist involvement according to admission time

Admission time	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Unknown
0000-0759	5273	31.4	60.2	91.6	4.0
0800-1159	4937	31.7	60.0	91.7	4.4
1200-1759	8529	32.7	58.9	91.6	4.2
1800-2359	6084	32.6	58.5	91.1	4.2

Table 4.4.14 Consultant Anaesthetist involvement according to day of the week

Admission day	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Unknown
Mon	4101	30.8	61.2	92.0	3.8
Tue	3768	32.1	59.2	91.3	4.7
Wed	3651	30.5	61.6	92.1	4.3
Thu	3700	32.3	60.2	92.5	3.5
Fri	3792	33.9	57.1	91.0	4.2
Sat	2858	33.1	57.0	90.1	4.6
Sun	2953	33.2	57.9	91.1	4.5

Table 4.4.15 Consultant Intensivist involvement according to admission time

Admission time	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown
0000-0759	5273	40.0	15.6	55.6	6.2	7.1
0800-1159	4937	40.6	15.1	55.7	5.9	6.8
1200-1759	8529	40.5	13.5	54.0	6.9	6.9
1800-2359	6084	39.7	13.7	53.4	7.8	6.7

Table 4.4.16 Consultant Intensivist involvement according to day of the week

Admission day	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown
Mon	4101	40.4	14.6	55.0	6.0	7.0
Tue	3768	40.0	14.3	54.3	7.1	6.6
Wed	3651	39.9	16.1	56.0	6.5	6.8
Thu	3700	40.7	14.8	55.5	6.8	6.4
Fri	3792	39.6	13.8	53.4	7.0	7.0
Sat	2858	41.3	12.7	54.0	7.4	7.1
Sun	2953	40.0	13.5	53.5	7.0	7.4

Table 4.4.17 Preoperative Consultant Intensivist input by age group

Age group	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown	No input
18-24	584	25.2	10.3	35.5	4.5	6.0	54.1
25-34	1265	26.2	10.2	36.4	5.0	6.2	52.4
35-44	1754	30.0	10.1	40.1	6.3	5.9	47.6
45-54	3045	32.8	12.9	45.7	6.6	6.9	40.9
55-64	4256	37.3	13.6	50.9	7.2	7.4	34.5
>=65	13919	46.0	15.9	61.9	7.0	6.9	24.2

Table 4.4.18 Preoperative Consultant Intensivist input by age group

Age group	Total patients	Consultant discussion	Consultant in person	Consultant input (total)	Junior review	Unknown	No input
18_39	2648	27.3	10.4	37.7	5.1	6.3	50.9
40_49	2312	30.1	11.1	41.2	6.7	6.1	45.9
50_59	3737	35.5	13.6	49.1	7.0	7.5	36.5
60_69	4908	38.7	15.2	53.9	6.9	7.2	31.9
70_79	6523	45.3	15.5	60.8	6.8	6.6	25.8
80_89	4170	50.9	16.0	66.9	7.4	7.1	18.6
>=90	525	50.7	17.7	68.4	8.0	7.2	16.4

Table 4.4.19 Missing data in preoperative Consultant input

Audit year	Anaesthetist review - Unknown (n(%))	Surgeon review - Unknown (n(%))	Intensivist review - Unknown (n(%))
4	1380 (5.7)	936 (3.8)	2026 (8.3)
5	1329 (5.4)	900 (3.6)	1969 (8)
6	1042 (4.2)	656 (2.6)	1706 (6.9)

## 4.5 Management of patients with peritonitis and sepsis

Table 4.5.1 Patients undergoing emergency laparotomy who had signs of sepsis

Audit year	Sepsis at admission (n)	%	Sepsis at decision to operate (n)	%
4	7319	30.0	8672	35.6
5	8109	32.8	10216	41.3
6	6188	24.9	8351	33.6

Table 4.5.2 Timeliness of arrival in theatre for patients undergoing emergency laparotomy with signs of sepsis

Audit year	Patients with suspected sepsis arrival to theatre within urgency of surgery (n)	%
4	4884	84.4
5	5491	84.4
6	4378	84.8

Table 4.5.3 Proportion of patients with Sepsis (Indication for surgery) admitted to a critical care environment

Audit year	Total patients with Indication for surgery - Sepsis	Number of patients admitted to CCU (n)	Number of patients admitted to CCU (%)
4	10615	7363	69.4
5	10658	7333	68.8
6	10313	7307	70.9

Table 4.5.4 Proportion of High risk patients with Sepsis (indication for surgery) admitted to CCU

Indication for Surgery (Sepsis)	Postoperative NELA Risk	Number of patients (n)	Admitted to CCU (n)	Admitted to CCU (%)
No	High	14510	5561	38.3
No	Low	14510	2762	19.0
Yes	High	10313	4802	46.6
Yes	Low	10313	2505	24.3

Table 4.5.5 Admission time to administration of antibiotics for patients with suspected sepsis

Audit year	Suspected sepsis at admission (n)	Suspected sepsis at admission (%)	Time to Antibiotics missing	Mean - Time to Antibiotics	Median [IQR] - Time to Antibiotics
24383	7319	30.0	1137	17.8	3.6 [1.5-8.2]
24718	8109	32.8	1209	19.4	3.5 [1.5-7.5]
24823	6188	24.9	840	24.2	3.5 [1.4-8]

Table 4.5.6 Suspected Sepsis - Antibiotics administration within the hour from admission and 30-day & 90-day ONS Mortality

(Missing Antibiotic time or incorrect time not included in denominator)

Audit Year	Total suscep. sepsis	Abx <= 1h	Abx <= 1h 30d mortality	Abx <= 1h 90d mortality
4	6182	1231 (19.9%)	198 (16.1%)	212 (17.2%)
5	6900	1347 (19.5%)	235 (17.4%)	254 (18.9%)
6	5348	1084 (20.3%)	197 (18.2%)	214 (19.7%)

Table 4.5.7 Suspected Sepsis according to Urgency of Surgery and ONS mortality

Audit Year	NCEPOD <18h & suspec sepsis	NCEPOD met (%)	NCEPOD met - 30d mort	NCEPOD met - 90d mort	NCEPOD NOT met (%)	NCEPOD NOT met - 30d mort	NCEPOD NOT met - 90d mort
4	5790	4884 (84.4%)	717 (14.7%)	884 (18.1%)	906 (15.6%)	137 (15.1%)	172 (19%)
5	6504	5491 (84.4%)	753 (13.7%)	919 (16.7%)	1013 (15.6%)	159 (15.7%)	190 (18.8%)
6	5162	4378 (84.8%)	677 (15.5%)	840 (19.2%)	784 (15.2%)	119 (15.2%)	145 (18.5%)

Table 4.5.8 Suspected Sepsis according to Urgency of Surgery

Audit year	NCEPOD category	Number of patients (n)	Number of patients (%)	NCEPOD met (n(%))	NCEPOD met - 30d mortality (n(%))	NCEPOD met - 90d mortality (n(%))
6	<2 hours	1138	22.0	827 (72.7%)	213 (25.8%)	232 (28.1%)
6	2-6 hours	2820	54.6	2519 (89.3%)	351 (13.9%)	381 (15.1%)
6	6-18 hours	1204	23.3	1032 (85.7%)	82 (7.9%)	96 (9.3%)

Audit year	NCEPOD category	NCEPOD not met (n(%))	NCEPOD not met - 30d mortality (n(%))	NCEPOD not met - 90d mortality (n(%))
6	<2 hours	311 (27.3%)	63 (20.3%)	68 (21.9%)
6	2-6 hours	301 (10.7%)	37 (12.3%)	39 (13%)
6	6-18 hours	172 (14.3%)	11 (6.4%)	12 (7%)

Table 4.5.9 Patients with Peritonitis (Indication for surgery)

Audit year	Total patients	Indication for surgery - Peritonitis (n)	Indication for surgery - Peritonitis (%)
4	24383	5008	20.5
5	24718	5186	21.0
6	24823	5090	20.5

Table 4.5.10 Suspected Sepsis by ONS mortality

Audit year	Total patients with suspected sepsis at admission or at decision to operate	30-day Mortality (n)	30-day Mortality (%)
4	9479	1367	14.4
5	11119	1508	13.6
6	9037	1361	15.1

Table 4.5.11 Time to theatre for patients with Peritonitis (indication for surgery)

Audit Year	Median [IQR] Admission to theatre (hours)	Median [IQR] Decision to theatre (hours)
4	18.52 (8-53.25)	2.25 (1.25-4.25)
5	16.86 (7.6-52.52)	2.25 (1.25-4.25)
6	17.25 (7.75-55)	2.25 (1.25-4.25)

Table 4.5.12 Patients with suspected Sepsis admitted to CCU

Audit year	Total patients with suspected sepsis at admission and on decision to operate (n)	Admitted to CCU (n)	Admitted to ccu (%)
4	9479	6835	72.1
5	11119	8025	72.2
6	9037	7001	77.5

## 4.6 Risk assessment

Table 4.6.1 Documented risk by Preoperative risk (NELA)

Preoperative Documented Risk of Death	High	Low	Missing
High	8773 (79.9%)	2122 (19.3%)	85 (0.8%)
Low	1231 (12.5%)	8554 (86.7%)	84 (0.9%)
Not Documented	1373 (34.5%)	2539 (63.9%)	62 (1.6%)

Table 4.6.2 30-day and 90-day ONS Mortality by documented risk of death

Audit year	Preoperative Documented Risk of Death	Total patients (n(%))	30-day mortality (n(%))	90-day mortality (n(%))
4	High	10418 (42.7%)	1919 (18.4%)	2459 (23.6%)
4	Low	7740 (31.7%)	154 (2%)	298 (3.9%)
4	Not Documented	6225 (25.5%)	367 (5.9%)	558 (9%)
5	High	10978 (44.4%)	1941 (17.7%)	2501 (22.8%)
5	Low	8104 (32.8%)	146 (1.8%)	255 (3.1%)
5	Not Documented	5636 (22.8%)	323 (5.7%)	510 (9%)
6	High	10980 (44.2%)	1908 (17.4%)	2522 (23%)
6	Low	9869 (39.8%)	166 (1.7%)	328 (3.3%)
6	Not Documented	3974 (16%)	237 (6%)	369 (9.3%)

Table 4.6.3 Documented risk by method of assessment



<b>Preoperative Risk of death</b>	<b>Clinical Judgement only (n(%))</b>	<b>Formal assessment only (n(%))</b>	<b>Clinical Judgement and formal (n(%))</b>	<b>Physiological (n(%))</b>	<b>Surgical APGAR (n(%))</b>	<b>Other risk assessment (n(%))</b>
High	1185 (10.8%)	6517 (59.4%)	2923 (26.6%)	57 (0.5%)	8 (0.1%)	58 (0.5%)
Low	1729 (17.5%)	5894 (59.7%)	1938 (19.6%)	50 (0.5%)	3 (0%)	48 (0.5%)
Not Documented	1 (0%)	1 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Table 4.6.4 Documented risk by NELA audit year

<b>Preoperative Risk of death</b>	<b>Audit year 4</b>	<b>Audit year 5</b>	<b>Audit year 6</b>
High	10418 (42.7%)	10978 (44.4%)	10980 (44.2%)
Low	7740 (31.7%)	8104 (32.8%)	9869 (39.8%)
Not Documented	6225 (25.5%)	5636 (22.8%)	3974 (16%)

Table 4.6.5 Risk assessment according to preoperative NELA risk

<b>Preop Risk Assessment</b>	<b>Preop NELA risk - High</b>	<b>Preop NELA risk - Low</b>
High	8858 (76.3%)	2122 (16.1%)
Low	1315 (11.3%)	8554 (64.7%)
Not Documented	1435 (12.4%)	2539 (19.2%)

Table 4.6.6 Consultant presence (Surgeon and Anaesthetist) by preoperative NELA and documented risk

<b>Risk Assessment</b>	<b>Total patients (n)</b>	<b>Consultant presence (n)</b>	<b>Consultant presence (%)</b>
High NELA risk and Low documented risk	1231	1028	83.5
High NELA risk and Not documented risk	1373	1157	84.3

Table 4.6.7 High risk patient by documented risk of death and CCU admission

<b>Risk Assessment</b>	<b>Total patients (n)</b>	<b>Admission to CCU (n)</b>	<b>Admission to CCU (%)</b>
High NELA risk and Low documented risk	1231	808	65.6
High NELA risk and Not documented risk	1373	1044	76.0

Table 4.6.8 Preoperative NELA calculated risk by documented risk of death and ONS mortality

Risk Assessment	Total patients (n)	30-day Mortality (n)	30-day Mortality (%)
High NELA risk and High documented risk	8773	1818	20.7
High NELA risk and Low documented risk	1231	72	5.8
High NELA risk and Not documented risk	1373	202	14.7
Low NELA risk and Not documented risk	2539	29	1.1
Low NELA risk and High documented risk	2122	73	3.4
Low NELA risk and High documented risk	8554	93	1.1

Table 4.6.9 Preoperative NELA calculated risk by documented risk of death and Length of Stay

Risk Assessment	Total patients (n)	Median LOS	25th Quantile	75th Quantile	Mean LOS
High NELA risk and Low documented risk	1231	12	7	20	16.4
High NELA risk and Not documented risk	1373	13	8	23	18.3
High NELA risk and High documented risk	8773	14	8	25	19.6
Low NELA risk and Low documented risk	8554	8	5	13	10.8
Low NELA risk and Not documented risk	2539	8	5	13	11.6
Low NELA risk and High documented risk	2122	11	7	18	15.7

Table 4.6.10 Preoperative NELA calculated risk by documented risk of death and NELA audit year

Preoperative NELA risk	Preoperative Documented Risk	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
High	Documented	8837 (80.6%)	9335 (83.4%)	10004 (87.9%)
High	Not documented	2130 (19.4%)	1853 (16.6%)	1373 (12.1%)
Low	Documented	8695 (69.7%)	9509 (72.7%)	10676 (80.8%)
Low	Not documented	3772 (30.3%)	3563 (27.3%)	2539 (19.2%)
Missing	Documented	626 (66%)	238 (52%)	169 (73.2%)
Missing	Not documented	323 (34%)	220 (48%)	62 (26.8%)

Table 4.6.11 Preoperative Risk assessment by age group

Preoperative risk of death	18-24	25-34	35-44	45-54	55-64	>=65
High	94 (16.1%)	185 (14.6%)	335 (19.1%)	748 (24.6%)	1522 (35.8%)	8096 (58.2%)
Low	373 (63.9%)	783 (61.9%)	1045 (59.6%)	1704 (56%)	2064 (48.5%)	3900 (28%)
Not Documented	117 (20%)	297 (23.5%)	374 (21.3%)	593 (19.5%)	670 (15.7%)	1923 (13.8%)

Table 4.6.12 Preoperative Risk assessment by age group

Preoperative risk of death	<65	>=65
High	2884 (26.4%)	8096 (58.2%)
Low	5969 (54.7%)	3900 (28%)
Not Documented	2051 (18.8%)	1923 (13.8%)

Table 4.6.13 Preoperative Risk assessment according to ASA score

Preoperative risk of death	ASA grade 1	ASA grade 2	ASA grade 3	ASA grade 4	ASA grade 5
High	241 (10%)	1965 (21.9%)	4997 (55.4%)	3461 (85%)	316 (89.8%)
Low	1741 (72.2%)	5369 (59.9%)	2583 (28.7%)	172 (4.2%)	4 (1.1%)
Not Documented	430 (17.8%)	1636 (18.2%)	1435 (15.9%)	441 (10.8%)	32 (9.1%)

Table 4.6.14 Preoperative Risk assessment by Urgency of Surgery

Preoperative risk of death	<2 hours	2-6 hours	6-18 hours	>18 hours	NA
High	1918 (68.5%)	4777 (49.6%)	2952 (36.2%)	1329 (31.3%)	4 (66.7%)
Low	524 (18.7%)	3456 (35.9%)	3758 (46.1%)	2130 (50.1%)	1 (16.7%)
Not Documented	356 (12.7%)	1393 (14.5%)	1434 (17.6%)	790 (18.6%)	1 (16.7%)

Table 4.6.15 Preoperative documented risk by frailty for year 6 (From December 2018 change to frailty assessment scoring system)

Preoperative risk of death	frail	Missing	not frail	Unknown
Documented	7419 (88.8%)	195 (78.3%)	11340 (83.3%)	1895 (72.6%)
Not documented	938 (11.2%)	54 (21.7%)	2268 (16.7%)	714 (27.4%)

Table 4.6.16 Preoperative documented risk for suspected Sepsis on admission

Preop Risk Assessment	NO suspected sepsis	Suspected sepsis	Unknown	Missing
High	6066 (37.5%)	3673 (59.4%)	452 (45.7%)	789 (53.9%)
Low	7430 (45.9%)	1762 (28.5%)	282 (28.5%)	395 (27%)
Not Documented	2688 (16.6%)	753 (12.2%)	254 (25.7%)	279 (19.1%)

Table 4.6.17 Preoperative documented risk and ONS mortality

Audit year	Preoperative Documented risk	Total patients (n)	30-day mortality (n(%))	90-day mortality (n(%))
4	Documented	18158	2073 (11.4%)	2757 (15.2%)
4	Not documented	6225	367 (5.9%)	558 (9%)
5	Documented	19082	2087 (10.9%)	2756 (14.4%)
5	Not documented	5636	323 (5.7%)	510 (9%)
6	Documented	20849	2074 (9.9%)	2850 (13.7%)
6	Not documented	3974	237 (6%)	369 (9.3%)

Table 4.6.18 ONS mortality for patients with no documented risk of death

Audit year	Preoperative Documented risk	Total patients (n)	30-day mortality (n(%))	90-day mortality (n(%))
4	Not documented	6225	367 (5.9%)	558 (9%)
5	Not documented	5636	323 (5.7%)	510 (9%)
6	Not documented	3974	237 (6%)	369 (9.3%)

Table 4.6.19 Documented risk assessment according to CCU admission

Documented risk assessment	Not admitted to CCU	Admitted to CCU	Missing
High	1447 (15.8)	9496 (60.8)	37 (80.4)
Low	5785 (63.2)	4082 (26.1)	2 (4.3)
Not Documented	1915 (20.9)	2052 (13.1)	7 (15.2)

Table 4.6.20 Documented risk assessment according to consultant surgeon presence

Preoperative Documented Risk	Surgeon in theatre (yr4)	Surgeon in theatre (yr5)	Surgeon in theatre (yr6)
High	9658 (92.7)	10291 (93.7)	10466 (95.3)
Low	6853 (88.5)	7273 (89.7)	9075 (92)
Not Documented	5516 (88.6)	5033 (89.3)	3614 (90.9)

Table 4.6.21 Documented risk assessment according to consultant anaesthetist presence

Preoperative Documented Risk	Anaesthetist in theatre (yr4)	Anaesthetist in theatre (yr5)	Anaesthetist in theatre (yr6)
High	9308 (89.3)	9890 (90.1)	10206 (93)
Low	6241 (80.6)	6608 (81.5)	8290 (84)
Not Documented	5037 (80.9)	4574 (81.2)	3355 (84.4)

Table 4.6.22 Documented risk assessment according to Consultant Surgeon and Anaesthetist presence

Preoperative Documented Risk	Surgeon & Anaesthetist in theatre (yr4)	Surgeon & Anaesthetist in theatre (yr5)	Surgeon & Anaesthetist in theatre (yr6)
High	9658 (92.7)	10291 (93.7)	10466 (95.3)
Low	6853 (88.5)	7273 (89.7)	9075 (92)
Not Documented	5516 (88.6)	5033 (89.3)	3614 (90.9)

Table 4.6.23 Documented risk assessment in Indication for surgery groups

Audit year	Preoperative Documented Risk	Sepsis (n(%))	Obstruction (n(%))	Ischaemia (n(%))	Bleeding (n(%))	Other (n(%))
4	High	5344 (50.3)	5145 (37)	1319 (63.7)	427 (55.2)	99 (45.6)
4	Low	2768 (26.1)	5106 (36.7)	376 (18.2)	113 (14.6)	39 (18)
4	Not Documented	2503 (23.6)	3643 (26.2)	375 (18.1)	233 (30.1)	79 (36.4)
5	High	5542 (52)	5552 (38.9)	1371 (65)	418 (57.3)	83 (47.7)
5	Low	2822 (26.5)	5426 (38)	378 (17.9)	105 (14.4)	37 (21.3)
5	Not Documented	2294 (21.5)	3310 (23.2)	361 (17.1)	207 (28.4)	54 (31)
6	High	5193 (50.4)	5898 (39.6)	1414 (65)	393 (58.9)	68 (45.9)
6	Low	3551 (34.4)	6591 (44.3)	501 (23)	122 (18.3)	44 (29.7)
6	Not Documented	1569 (15.2)	2387 (16)	260 (12)	152 (22.8)	36 (24.3)

## 5 Intraoperative care

### 5.1 What are the indications for emergency laparotomy?

Table 5.1.1 Indication for surgery groups and timeliness of arrival to theatre, by urgency of surgery

NCEPOD Category	Sepsis - NCEPOD met	Obstruction - NCEPOD met	Ischaemia - NCEPOD met	Bleeding - NCEPOD met	Other - NCEPOD met
<2 hours	n: 1515 Met: 1114 (73.5%)	n: 762 Met: 519 (68.1%)	n: 549 Met: 417 (76%)	n: 301 Met: 267 (88.7%)	n: 32 Met: 27 (84.4%)
2-6 hours	n: 4394 Met: 3911 (89%)	n: 4554 Met: 3834 (84.2%)	n: 1058 Met: 973 (92%)	n: 164 Met: 144 (87.8%)	n: 53 Met: 45 (84.9%)
6-18 hours	n: 2173 Met: 1757 (80.9%)	n: 5209 Met: 4261 (81.8%)	n: 276 Met: 260 (94.2%)	n: 51 Met: 39 (76.5%)	n: 20 Met: 19 (95%)

Table 5.1.2 Appropriate time to theatre arrival in each indication for surgery group

Audit year	Sepsis - NCEPOD met	Obstruction - NCEPOD met	Ischaemia - NCEPOD met	Bleeding - NCEPOD met	Other - NCEPOD met
4	6781 (84%)	7616 (80.4%)	1495 (84.7%)	538 (87.3%)	131 (86.2%)
5	6846 (83.6%)	8003 (81.2%)	1527 (85%)	518 (88.7%)	105 (89%)
6	6782 (83.9%)	8614 (81.8%)	1650 (87.6%)	450 (87.2%)	91 (86.7%)

Table 5.1.3 Proportion of patients in each indication for surgery groups

Audit year	Total patients (n)	Sepsis (n(%))	Obstruction (n(%))	Ischaemia (n(%))	Bleeding (n(%))	Other (n(%))
4	24383	10615 (43.5%)	13894 (57%)	2070 (8.5%)	773 (3.2%)	217 (0.9%)
5	24718	10658 (43.1%)	14288 (57.8%)	2110 (8.5%)	730 (3%)	174 (0.7%)
6	24823	10313 (41.5%)	14876 (59.9%)	2175 (8.8%)	667 (2.7%)	148 (0.6%)

Table 5.1.4 Indication for surgery (group) by documented risk of death

Audit year	Preoperative Documented Risk	Sepsis (n(%))	Obstruction (n(%))	Ischaemia (n(%))	Bleeding (n(%))	Other (n(%))
4	High	5344 (50.3)	5145 (37)	1319 (63.7)	427 (55.2)	99 (45.6)
4	Low	2768 (26.1)	5106 (36.7)	376 (18.2)	113 (14.6)	39 (18)
4	Not Documented	2503 (23.6)	3643 (26.2)	375 (18.1)	233 (30.1)	79 (36.4)
5	High	5542 (52)	5552 (38.9)	1371 (65)	418 (57.3)	83 (47.7)
5	Low	2822 (26.5)	5426 (38)	378 (17.9)	105 (14.4)	37 (21.3)
5	Not Documented	2294 (21.5)	3310 (23.2)	361 (17.1)	207 (28.4)	54 (31)
6	High	5193 (50.4)	5898 (39.6)	1414 (65)	393 (58.9)	68 (45.9)
6	Low	3551 (34.4)	6591 (44.3)	501 (23)	122 (18.3)	44 (29.7)
6	Not Documented	1569 (15.2)	2387 (16)	260 (12)	152 (22.8)	36 (24.3)

Table 5.1.5 Consultant Surgeon and Anaesthetist presence in each indication for surgery (group)

Audit year	Total patients (n)	Sepsis (n(%))	Obstruction (n(%))	Ischaemia (n(%))	Bleeding (n(%))
4	8401 (79.1)	10809 (77.8)	1688 (81.5)	665 (86)	158 (72.8)
5	8630 (81)	11260 (78.8)	1729 (81.9)	637 (87.3)	127 (73)
6	8721 (84.6)	12385 (83.3)	1842 (84.7)	596 (89.4)	111 (75)

## 5.2 What are the surgical findings at emergency laparotomy?

Table 5.2.1 Proportion of patients in each finding (group)

Audit year	Sepsis (n(%))	Obstruction (n(%))	Ischaemia and Haemorrhage (n(%))	Ischaemia (n(%))	Haemorrhage (n(%))	Cancer (n(%))	Postop complications (n(%))
1	2414 (11.7%)	39 (0.2%)	2982 (14.5%)	2568 (12.5%)	436 (2.1%)	2556 (12.4%)	6 (0%)
2	3918 (16.6%)	1630 (6.9%)	3499 (14.8%)	3097 (13.1%)	430 (1.8%)	3279 (13.9%)	221 (0.9%)
3	10189 (40.3%)	10774 (42.6%)	3552 (14%)	3093 (12.2%)	488 (1.9%)	4968 (19.6%)	1488 (5.9%)
4	9984 (40.9%)	10757 (44.1%)	3301 (13.5%)	2888 (11.8%)	434 (1.8%)	4656 (19.1%)	1254 (5.1%)
5	10040 (40.6%)	11212 (45.4%)	3328 (13.5%)	2925 (11.8%)	416 (1.7%)	4609 (18.6%)	1278 (5.2%)
6	9644 (38.9%)	11771 (47.4%)	3354 (13.5%)	3006 (12.1%)	364 (1.5%)	4620 (18.6%)	1225 (4.9%)

Table 5.2.2 Consultant Surgeon and Anaesthetist presence by findings

Audit year	Total patients (n)	Sepsis (n(%))	Obstruction (n(%))	Ischaemia (n(%))	Bleeding (n(%))
4	8401 (79.1)	10809 (77.8)	1688 (81.5)	665 (86)	158 (72.8)
5	8630 (81)	11260 (78.8)	1729 (81.9)	637 (87.3)	127 (73)
6	8721 (84.6)	12385 (83.3)	1842 (84.7)	596 (89.4)	111 (75)

## 5.3 What are the procedures performed at emergency laparotomy?

Table 5.3.1 ONS Mortality in the top 10 main procedures

Main procedure	Total patients (n(%))	30-day Mortality (n(%))	90-day Mortality (n(%))
Adhesiolysis	4542 (18.3%)	243 (5.4%)	343 (7.6%)
SB Resection	3929 (15.8%)	409 (10.4%)	559 (14.2%)
Colectomy R	3432 (13.8%)	262 (7.6%)	413 (12%)
Hartmann's	3040 (12.2%)	290 (9.5%)	364 (12%)
Perf PUD Repair	1307 (5.3%)	115 (8.8%)	153 (11.7%)
Colectomy ST	1283 (5.2%)	177 (13.8%)	196 (15.3%)
Stoma Formation	898 (3.6%)	108 (12%)	223 (24.8%)
Colectomy L	838 (3.4%)	75 (8.9%)	91 (10.9%)
Large In Hernia	653 (2.6%)	38 (5.8%)	47 (7.2%)
Abscess Drain	538 (2.2%)	44 (8.2%)	68 (12.6%)

## 5.4 Laparoscopic emergency bowel surgery

Table 5.4.1 Operative approach used in Emergency Laparotomy, by NELA audit year

Operative approach	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
Open	20319 (83.3%)	20076 (81.2%)	19807 (79.8%)
Laparoscopic converted to open	1776 (7.3%)	1906 (7.7%)	2177 (8.8%)
Laparoscopic	1979 (8.1%)	2352 (9.5%)	2492 (10%)
Laparoscopic assisted	309 (1.3%)	384 (1.6%)	347 (1.4%)

Table 5.4.2 30-day and 90-day ONS mortality by operative approach

Audit year	Operative approach	Total patients	30-day mortality (n(%))	90-day mortality (n(%))
4	Open	20319	2229 (11%)	3002 (14.8%)
4	Laparoscopic converted to open	1776	126 (7.1%)	158 (8.9%)
4	Laparoscopic	1979	77 (3.9%)	142 (7.2%)
4	Laparoscopic assisted	309	8 (2.6%)	13 (4.2%)
5	Open	20076	2181 (10.9%)	2908 (14.5%)
5	Laparoscopic converted to open	1906	121 (6.3%)	173 (9.1%)
5	Laparoscopic	2352	96 (4.1%)	162 (6.9%)
5	Laparoscopic assisted	384	12 (3.1%)	23 (6%)
6	Open	19807	2063 (10.4%)	2843 (14.4%)
6	Laparoscopic converted to open	2177	149 (6.8%)	201 (9.2%)
6	Laparoscopic	2492	89 (3.6%)	157 (6.3%)
6	Laparoscopic assisted	347	10 (2.9%)	18 (5.2%)

Table 5.4.3 Time of arrival in the operating in theatre by Operative approach

Time of surgery	Open	Laparoscopic converted to open	Laparoscopic	Laparoscopic assisted
00:00 to 08:00	1951(9.9%)	133(6.1%)	156(6.3%)	11(3.2%)
08:00 to 12:00	4640(23.4%)	502(23.1%)	703(28.2%)	99(28.5%)
12:00 to 18:00	7967(40.2%)	993(45.6%)	1095(43.9%)	174(50.1%)
18:00 to 00:00	4665(23.6%)	484(22.2%)	459(18.4%)	53(15.3%)
Missing	584(2.9%)	65(3%)	79(3.2%)	10(2.9%)

Table 5.4.4 Day of week of arrival in the operating theatre by operative approach



Day of surgery	Open	Laparoscopic converted to open	Laparoscopic	Laparoscopic assisted
Mon	2603(13.1%)	289(13.3%)	319(12.8%)	40(11.5%)
Tue	2910(14.7%)	340(15.6%)	377(15.1%)	59(17%)
Wed	3002(15.2%)	321(14.7%)	399(16%)	59(17%)
Thu	3058(15.4%)	341(15.7%)	398(16%)	52(15%)
Fri	3077(15.5%)	320(14.7%)	409(16.4%)	59(17%)
Sat	2610(13.2%)	288(13.2%)	298(12%)	45(13%)
Sun	2547(12.9%)	278(12.8%)	292(11.7%)	33(9.5%)

Table 5.4.5 Operative approach by documented risk of death

Perioperative Documented Risk	Open	Laparoscopic converted to open	Laparoscopic	Laparoscopic assisted
High	9576(48.3%)	717(32.9%)	606(24.3%)	81(23.3%)
Low	7380(37.3%)	1007(46.3%)	1296(52%)	186(53.6%)
Not Documented	2851(14.4%)	453(20.8%)	590(23.7%)	80(23.1%)

Table 5.4.6 Operative approach by Urgency of surgery

Urgency of Surgery	Open	Laparoscopic converted to open	Laparoscopic	Laparoscopic assisted
<2 hours	2458(12.4%)	184(8.5%)	143(5.7%)	13(3.7%)
2-6 hours	7933(40.1%)	838(38.5%)	774(31.1%)	81(23.3%)
6-18 hours	6363(32.1%)	768(35.3%)	885(35.5%)	128(36.9%)
>18 hours	3047(15.4%)	387(17.8%)	690(27.7%)	125(36%)

Table 5.4.7 Length of Stay by operative approach  
(Includes patients alive at discharge)

Operative approach	Total patients (n)	Mean LOS	Median [IQR] LOS
Open	19807	16.6	11 [7-20]
Laparoscopic converted to open	2177	13.6	9 [6-16]
Laparoscopic	2492	9.3	6 [4-11]
Laparoscopic assisted	347	10.2	7 [5-11]

Table 5.4.8 Consultant presence by operative approach

Operative approach	Total patients (n)	Consultant surgeon presence (n)	Consultant Anaesthetist presence (n)	Surgeon and Anaesthetist presence (n)	Consultant surgeon presence (%)	Consultant Anaesthetist presence (%)	Surgeon and Anaesthetist presence (%)
Open	19807	18430	17579	16668	93.0	88.8	84.2
Laparoscopic converted to open	2177	2041	1823	1744	93.8	83.7	80.1
Laparoscopic	2492	2359	2146	2068	94.7	86.1	83.0
Laparoscopic assisted	347	325	303	291	93.7	87.3	83.9

## 5.5 Consultant presence in theatre

Table 5.5.1 Consultant Surgeon and Anaesthetist present in theatre when Low risk of death (<5%)

Total Low risk patients (n)	Consultant surgeon presence (n)	Consultant Anaesthetist presence (n)	Surgeon and Anaesthetist presence (n)	Consultant surgeon presence (%)	Consultant Anaesthetist presence (%)	Surgeon and Anaesthetist presence (%)
12929	11881	10872	10250	91.9	84.1	79.3

Table 5.5.2 Consultant Surgeon and Anaesthetist present in theatre by documented risk of death

Preoperative Documented risk	Total patients (n)	Consultant surgeon presence (n)	Consultant Anaesthetist presence (n)	Surgeon and Anaesthetist presence (n)	Consultant surgeon presence (%)	Consultant Anaesthetist presence (%)	Surgeon and Anaesthetist presence (%)
High	10980	10466	10206	9815	95.3	93.0	89.4
Low	9869	9075	8290	7806	92.0	84.0	79.1
Not Documented	3974	3614	3355	3150	90.9	84.4	79.3

Table 5.5.3 Consultant Surgeon and Anaesthetist present in theatre by time of day of surgery

Audit year	Time of surgery	Total patients (n)	Consultant surgeon presence (n)	Consultant Anaesthetist presence (n)	Surgeon and Anaesthetist presence (n)	Consultant surgeon presence (%)	Consultant Anaesthetist presence (%)	Surgeon and Anaesthetist presence (%)
4	00:00 to 08:00	1179	987	906	810	83.7	76.8	68.7
4	08:00 to 12:00	2590	2403	2374	2213	92.8	91.7	85.4
4	12:00 to 18:00	4978	4687	4583	4338	94.2	92.1	87.1
4	18:00 to 00:00	3081	2759	2596	2390	89.5	84.3	77.6
4	Missing	434	403	361	343	92.9	83.2	79.0
5	00:00 to 08:00	1389	1181	1085	980	85.0	78.1	70.6
5	08:00 to 12:00	2552	2421	2353	2250	94.9	92.2	88.2
5	12:00 to 18:00	4698	4421	4344	4107	94.1	92.5	87.4
5	18:00 to 00:00	2993	2737	2596	2420	91.4	86.7	80.9
5	Missing	402	382	331	314	95.0	82.3	78.1
6	00:00 to 08:00	1325	1177	1108	1025	88.8	83.6	77.4
6	08:00 to 12:00	2577	2478	2435	2350	96.2	94.5	91.2
6	12:00 to 18:00	4734	4560	4476	4328	96.3	94.6	91.4
6	18:00 to 00:00	2930	2750	2666	2538	93.9	91.0	86.6
6	Missing	328	309	294	280	94.2	89.6	85.4

## 6 Post operative care

### 6.1 Postoperative admission to critical care

Table 6.1.1 Destination for postoperative care following surgery

Postoperative destination	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
CCU	14982 (61.4)	15084 (61)	15630 (63)
Died in theatre	50 (0.2)	58 (0.2)	46 (0.2)
Enhanced	1109 (4.5)	1461 (5.9)	1359 (5.5)
Ward	8242 (33.8)	8115 (32.8)	7788 (31.4)

Table 6.1.2 Destination for postoperative care by Age group

Age group	Postoperative destination	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
18-24	CCU	308 (42.4)	248 (39.4)	230 (39.4)
18-24	Enhanced	43 (5.9)	37 (5.9)	38 (6.5)
18-24	Ward	376 (51.7)	344 (54.7)	316 (54.1)
25-34	CCU	502 (40.7)	491 (39.3)	499 (39.4)
25-34	Enhanced	73 (5.9)	90 (7.2)	93 (7.4)
25-34	Ward	659 (53.4)	667 (53.4)	673 (53.2)
35-44	CCU	731 (43.6)	804 (44.4)	807 (46)
35-44	Enhanced	99 (5.9)	134 (7.4)	114 (6.5)
35-44	Ward	847 (50.5)	871 (48.1)	833 (47.5)
45-54	CCU	1580 (52.3)	1567 (51.2)	1563 (51.4)
45-54	Enhanced	171 (5.7)	185 (6)	188 (6.2)
45-54	Ward	1271 (42.1)	1308 (42.7)	1290 (42.4)
55-64	CCU	2362 (58.1)	2531 (59.3)	2504 (58.9)
55-64	Enhanced	180 (4.4)	257 (6)	259 (6.1)
55-64	Ward	1523 (37.5)	1481 (34.7)	1488 (35)
>=65	CCU	9499 (69.8)	9443 (69.2)	10027 (72.2)
>=65	Enhanced	543 (4)	758 (5.6)	667 (4.8)
>=65	Ward	3566 (26.2)	3444 (25.2)	3188 (23)

Table 6.1.3 Destination for postoperative care by Age group (<65 & ≥ 65)

Age group	Postoperative destination	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
<65	CCU	5483 (51.1)	5641 (51.2)	5603 (51.4)
<65	Enhanced	566 (5.3)	703 (6.4)	692 (6.4)
<65	Ward	4676 (43.6)	4671 (42.4)	4600 (42.2)
>=65	CCU	9499 (69.8)	9443 (69.2)	10027 (72.2)
>=65	Enhanced	543 (4)	758 (5.6)	667 (4.8)
>=65	Ward	3566 (26.2)	3444 (25.2)	3188 (23)

Table 6.1.4 Destination for post-operative care by ASA Score

ASA Score	Postoperative destination	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
1	CCU	809 (33.7)	719 (31.4)	814 (33.7)
1	Enhanced	153 (6.4)	190 (8.3)	165 (6.8)
1	Ward	1438 (59.9)	1381 (60.3)	1433 (59.4)
2	CCU	4004 (46.3)	4006 (45.2)	4261 (47.5)
2	Enhanced	496 (5.7)	641 (7.2)	650 (7.2)
2	Ward	4154 (48)	4212 (47.5)	4055 (45.2)
3	CCU	6145 (70)	6209 (69.8)	6555 (72.8)
3	Enhanced	375 (4.3)	519 (5.8)	444 (4.9)
3	Ward	2260 (25.7)	2172 (24.4)	2009 (22.3)
4	CCU	3613 (88.9)	3744 (89.6)	3677 (90.6)
4	Enhanced	81 (2)	109 (2.6)	97 (2.4)
4	Ward	372 (9.1)	324 (7.8)	283 (7)
5	CCU	411 (94.9)	406 (93.5)	323 (96.7)
5	Enhanced	4 (0.9)	2 (0.5)	3 (0.9)
5	Ward	18 (4.2)	26 (6)	8 (2.4)

Table 6.1.5 Documented Assessment of Risk by destination for postoperative care

Preoperative Documented Risk	Postoperative destination	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
High	CCU	8691 (83.8)	9019 (82.5)	9496 (86.8)
High	Enhanced	262 (2.5)	460 (4.2)	343 (3.1)
High	Ward	1422 (13.7)	1448 (13.3)	1104 (10.1)
Low	CCU	3199 (41.3)	3203 (39.5)	4082 (41.4)
Low	Enhanced	498 (6.4)	679 (8.4)	814 (8.2)
Low	Ward	4042 (52.2)	4222 (52.1)	4971 (50.4)
Not Documented	CCU	3092 (49.7)	2862 (50.8)	2052 (51.7)
Not Documented	Enhanced	349 (5.6)	322 (5.7)	202 (5.1)
Not Documented	Ward	2778 (44.7)	2445 (43.4)	1713 (43.2)

Table 6.1.6 Admission to CCU by Assessment of Risk

Postoperative destination	Preoperative Documented Risk	Audit year 4 (n(%))	Audit year 5 (n(%))	Audit year 6 (n(%))
CCU	High	8691 (58)	9019 (59.8)	9496 (60.8)
CCU	Low	3199 (21.4)	3203 (21.2)	4082 (26.1)
CCU	Not Documented	3092 (20.6)	2862 (19)	2052 (13.1)
Enhanced	High	262 (23.6)	460 (31.5)	343 (25.2)
Enhanced	Low	498 (44.9)	679 (46.5)	814 (59.9)
Enhanced	Not Documented	349 (31.5)	322 (22)	202 (14.9)
Ward	High	1422 (17.3)	1448 (17.8)	1104 (14.2)
Ward	Low	4042 (49)	4222 (52)	4971 (63.8)
Ward	Not Documented	2778 (33.7)	2445 (30.1)	1713 (22)

## 7 Care of the older patient and vulnerable patients

### 7.1 Frailty and emergency laparotomy

Table 7.1.2 Proportion of patients over the age of 80 and over OR aged 65 or over, who had an Emergency Laparotomy

Audit year	Age group	Total patients (n)	Total patients (%)
4	<65	10734	44.0
4	>=65	13649	56.0
5	<65	11032	44.6
5	>=65	13686	55.4
6	<65	10904	43.9
6	>=65	13919	56.1

Table 7.1.3 Proportion of patients aged 80 years old or over who were assessed by a geriatrician

Audit year	Total patients (n)	Assessed by Geriatrician (n)	Assessed by Geriatrician (%)
4	4667	1197	25.6
5	4770	1278	26.8
6	4688	1423	30.4

Table 7.1.4 Proportion of patients aged 65 and frail were assessed by a Geriatrician

Audit year	Total patients (n)	Assessed by Geriatrician (n)	Assessed by Geriatrician (%)
5	1326	485	36.6
6	6669	1924	28.8

Table 7.1.5 Proportion of Patients aged 65 and frail or over 80 years old assessed by a geriatrician

Total patients (n)	Assessed by Geriatrician (n)	Assessed by Geriatrician (%)
8268	2345	28.4

Table 7.1.6 Proportion of patients aged over 65 who had frailty assessment

Total patients (n)	Frailty assessed (n)	Frailty assessed (%)
13919	12126	87.1

Table 7.1.7 Proportion of patients aged 65 and frail and 80 years old or over

Total patients (n)	Patients over 80 years old (n(%))	Patients over 80 years old (n(%))	Patients over 65 and frail (n(%))
24823	4695 (18.9)	13919 (56.1)	6689 (26.9)

Table 7.1.8 Length of stay for patients 80 years old or over  
(Only includes patients who survived to discharge)

Mean LOS	Median LOS	IQR LOS
18.2	14	[9-22]

Table 7.1.9 Length of stay for patients over 65 and frail  
(Only includes patients who survived to discharge)

Mean LOS	Median LOS	IQR LOS
19.7	14.95833	[9-25]

Table 7.1.10 ONS Mortality for patients over 80 years old

Total patients over 80 years old (n)	30-day Mortality (n)	30-day Mortality (%)	90-day Mortality (n)	90-day Mortality (%)
4695	762	16.23003	1041	22.17252

Table 7.1.11 Mortality for patients over 65 and frail

Total patients over 65 years old and frail (n)	30-day Mortality (n)	30-day Mortality (%)	90-day Mortality (n)	90-day Mortality (%)
6689	1210	18.1	1660	24.8

Table 7.1.12 Proportion of patients over the age of 65 years who had a frailty assessment by ONS mortality

Frailty Assessment	Number of patients in total	30-day mortality	90-day mortality
Frail	6689	18.1	24.8
Not frail	5435	6.3	8.9
Unknown/Missing	1795	14.7	20.4

Table 7.1.13 Frail patients by Documented Risk and ONS mortality

Preoperative Risk of death	Frail (n)	Frail (%)	30-day Mortality for frail patient (n)	30-day Mortality for frail patient (%)
High	5768	68.8	1248	21.6
Low	1673	20.0	88	5.3
Not Documented	942	11.2	117	12.4

Table 7.1.14 Frail patients (over 65) by Documented Risk and ONS mortality

Preoperative Risk of death	Frail (n)	Frail (%)	30-day Mortality for frail patient (n)	30-day Mortality for frail patient (%)
High	4813	72.0	1050	21.8
Low	1150	17.2	63	5.5
Not Documented	726	10.9	97	13.4

## 7.2 Patients with learning disabilities (LD) or autism spectrum disorder (ASD)

Table 7.2.1 Patients with learning disabilities and/or autism



Learning disabilities and/or autism	Total patients (n)
No	24011
Yes	307
Unknown	502
Missing	3

Table 7.2.2 Consultant Surgeon presence for patients with learning disabilities and/or autism

Senior Surgeon grade	Total patients with learning disabilities and/or autism (n)	(%)
Consultant	292	95.1
Post-CCT	2	0.7
Research/Clinical Fellow	2	0.7
SAS doctor	3	1.0
Specialty trainee	8	2.6

Table 7.2.3 Consultant Anaesthetist presence for patients with learning disabilities and/or autism

Senior Anaesthetist grade	Total patients with learning disabilities and/or autism (n)	(%)
Consultant	276	89.9
Post-CCT	5	1.6
SAS doctor	8	2.6
Specialty trainee	17	5.5
NA	1	0.3

Table 7.2.4 Consultant presence for all patients with learning disabilities and/or autism

Learning disabilities and/or autism	Total patients	Consultant Surgeon presence (n)	Consultant Anaesthetist presence (n)	Consultant Surgeon and Anaesthetist (n)	Consultant Surgeon presence (%)	Consultant Anaesthetist presence (%)	Consultant Surgeon and Anaesthetist (%)
No	24011	22396	21124	20081	93.3	88.0	83.6
Yes	307	292	276	267	95.1	89.9	87.0
Unknown	502	464	448	420	92.4	89.2	83.7
Missing	3	3	3	3	100.0	100.0	100.0

Table 7.2.6 consultant presence for High risk patients with learning disabilities and/or autism

Learning disabilities and/or autism	Total patients	Consultant Surgeon presence (n)	Consultant Anaesthetist presence (n)	Consultant Surgeon and Anaesthetist (n)	Consultant Surgeon presence (%)	Consultant Anaesthetist presence (%)	Consultant Surgeon and Anaesthetist (%)
No	11208	10630	10359	9934	94.8	92.4	88.6
Yes	132	125	124	119	94.7	93.9	90.2
Unknown	265	241	248	226	90.9	93.6	85.3
Missing	3	3	3	3	100.0	100.0	100.0

Table 7.2.7 Admission to CCU for patients with learning disabilities and/or autism

Learning disabilities and/or autism	CCU admission	Total patients with learning disabilities and/or autism	CCU (n)	CCU (%)
No	No	24011	8858	36.9
No	Yes	24011	15109	62.9
No	Missing	24011	44	0.2
Yes	No	307	97	31.6
Yes	Yes	307	209	68.1
Yes	Missing	307	1	0.3
Unknown	No	502	191	38.0
Unknown	Yes	502	310	61.8
Unknown	Missing	502	1	0.2
Missing	No	3	1	33.3
Missing	Yes	3	2	66.7

Table 7.2.8 Length of stay for patients with learning disabilities and/or autism

Learning disabilities and/or Autism	Total patients (n)	Mean LOS	Median LOS	25th Quantile	75th Quantile
No	21700	15.35949	10	7	18
Yes	269	20.15645	14	9	26
Unknown	441	16.14956	11	6	18
Missing	3	17.00000	13	12	20

Table 7.2.9 30 day and 90 day ONS mortality for patients with learning disabilities and/or autism

<b>Learning disabilities and/or Autism</b>	<b>Total patients</b>	<b>30-day mortality (n)</b>	<b>30-day mortality (%)</b>	<b>90-day mortality (n)</b>	<b>90-day mortality (%)</b>
No	23912	2200	9.2	3081	12.9
Yes	307	36	11.7	43	14.0
Unknown/Missing	99	13	13.1	15	15.2

### 7.3 Intraoperative deaths and end of life care pathways

Table 7.3.1 Patients who died in theatre or were on End of Life pathway

<b>Total patients (n)</b>	<b>In-hospital death (n)</b>	<b>Died in theatre (n)</b>	<b>Patients on End of life Pathway (n)</b>
24823	2410	46	353

Table 7.3.2 Patients who died in theatre by age group

<b>Age group</b>	<b>Died in theatre (n)</b>	<b>Died in theatre (%)</b>
45-54	4	8.7
55-64	5	10.9
>=65	37	80.4

Table 7.3.3 Consultant presence for patients who died in theatre

<b>Consultant surgeon presence (n(%))</b>	<b>Consultant Anaesthetist presence (n(%))</b>	<b>Consultant Surgeon and Anaesthetist presence (n(%))</b>
44 (95.7%)	45 (97.8%)	43 (93.5%)

Table 7.3.4 Postoperative destination for care following surgery by time of surgery

<b>Time of Surgery</b>	<b>CCU (%)</b>	<b>Died in theatre (%)</b>	<b>Enhanced (%)</b>	<b>Ward (%)</b>
00:00 to 08:00	74.5	0.4	5.1	20.0
08:00 to 12:00	57.6	0.2	6.2	36.0
12:00 to 18:00	60.7	0.2	5.7	33.4
18:00 to 00:00	68.7	0.1	4.8	26.4
Missing	58.3	0.4	3.3	38.1

Table 7.3.5 End of life pathway by age group (<65 & ≥ 65)

Age group	End of Life Pathway (n)
<65	99
≥65	254

Table 7.3.6 End of life pathway by age group

Age group	End of Life Pathway (n)
18-24	2
25-34	5
35-44	14
45-54	23
55-64	55
≥65	254

Table 7.3.7 Proportion of patients on End of Life Pathway according to Findings

Audit Year	End of Life Pathway	Total patients	Cancer (n(%))	Sepsis (n(%))	Ischaemia Haemorrhage (n(%))	Obstruction (n(%))	Postop complications (n(%))
6	No	21376	3893 (18.2%)	8447 (39.5%)	2833 (13.3%)	10165 (47.6%)	1080 (5.1%)
6	Yes	353	149 (42.2%)	94 (26.6%)	131 (37.1%)	97 (27.5%)	6 (1.7%)
6	Missing	3094	578 (18.7%)	1103 (35.6%)	390 (12.6%)	1509 (48.8%)	139 (4.5%)

## 8 Outcomes

### 8.1 Risk adjusted mortality

Figure 8.1.1 Trend in the overall unadjusted 30-day and 90-day ONS mortality rates by NELA dataset year

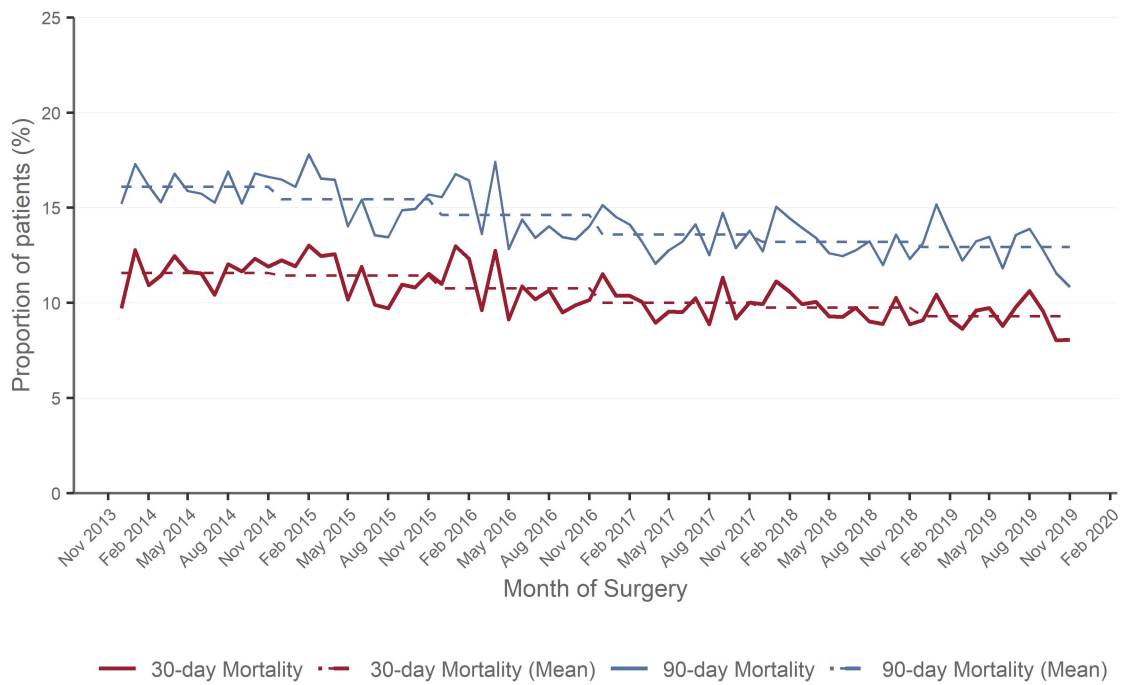


Figure 8.1.3 Trendline of 30-day inpatient and ONS mortality rates over time, by date of operation (ONS Combined - when ONS mortality not available, it was supplemented with in-hospital mortality)

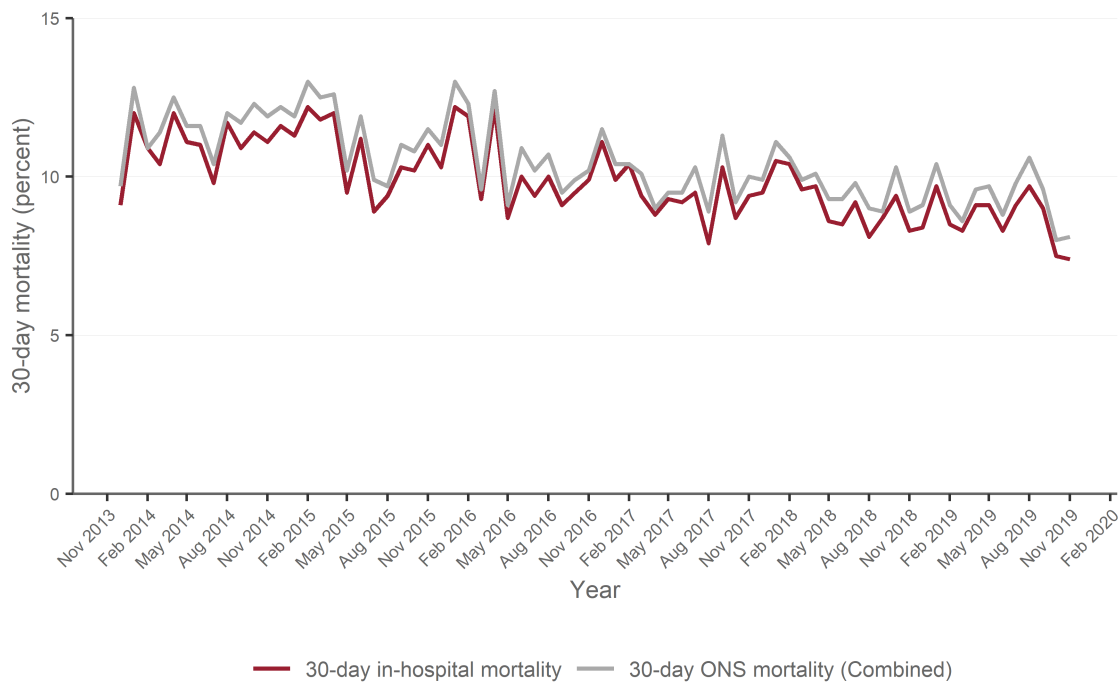


Table 8.1.1 ONS mortality by Audit Year

Audit Year	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
1	20623	2413 (11.7%)	3331 (16.2%)
2	23591	2695 (11.4%)	3640 (15.4%)
3	25306	2720 (10.7%)	3695 (14.6%)
4	24383	2440 (10%)	3315 (13.6%)
5	24718	2410 (9.7%)	3266 (13.2%)
6	24823	2311 (9.3%)	3219 (13%)

Table 8.1.2 ONS 30-day and 90-day mortality by Age group (under 65)

Age group	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
18-24	584 (2.4%)	10 (1.7%)	14 (2.4%)
25-34	1265 (5.1%)	13 (1%)	23 (1.8%)
35-44	1754 (7.1%)	47 (2.7%)	64 (3.6%)
45-54	3045 (12.3%)	120 (3.9%)	180 (5.9%)
55-64	4256 (17.1%)	306 (7.2%)	429 (10.1%)
>=65	13919 (56.1%)	1815 (13%)	2509 (18%)

Table 8.1.3 ONS 30-day and 90-day mortality by Age group (above 65)

Age group	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
< 65	10904 (43.9%)	496 (4.5%)	710 (6.5%)
65-69	2701 (10.9%)	256 (9.5%)	352 (13%)
70-74	3417 (13.8%)	376 (11%)	529 (15.5%)
75-79	3106 (12.5%)	421 (13.6%)	587 (18.9%)
80-84	2691 (10.8%)	400 (14.9%)	542 (20.1%)
85-89	1479 (6%)	272 (18.4%)	372 (25.2%)
>=90	525 (2.1%)	90 (17.1%)	127 (24.2%)

Table 8.1.4 ONS 30-day and 90-day mortality by Age group (ALL)

Age group	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
18_39	2648 (10.7%)	44 (1.7%)	69 (2.6%)
40_49	2312 (9.3%)	78 (3.4%)	107 (4.6%)
50_59	3737 (15.1%)	195 (5.2%)	276 (7.4%)
60_69	4908 (19.8%)	435 (8.9%)	610 (12.4%)
70_79	6523 (26.3%)	797 (12.2%)	1116 (17.1%)
80_89	4170 (16.8%)	672 (16.1%)	914 (21.9%)
>=90	525 (2.1%)	90 (17.1%)	127 (24.2%)

Figure 8.1.4 ONS 30-day and 90-day mortality by Age group

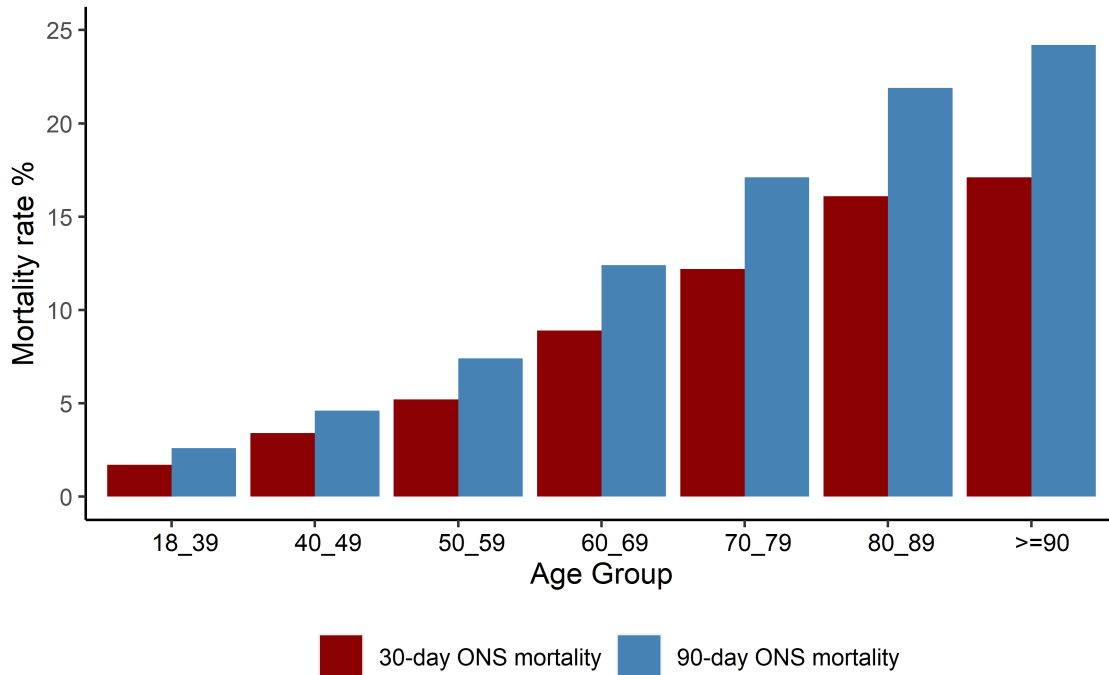


Table 8.1.4 30-day and 90-day mortality by Gender

Sex	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
F	12994 (52.3%)	1214 (9.3%)	1669 (12.8%)
M	11829 (47.7%)	1097 (9.3%)	1550 (13.1%)

Table 8.1.5 ONS 30-day and 90-day mortality by ASA Score

ASA Score	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
1	2412 (9.7%)	24 (1%)	40 (1.7%)
2	8970 (36.1%)	230 (2.6%)	376 (4.2%)
3	9015 (36.3%)	778 (8.6%)	1200 (13.3%)
4	4074 (16.4%)	1073 (26.3%)	1385 (34%)
5	352 (1.4%)	206 (58.5%)	218 (61.9%)

Figure 8.1.5 ONS 30-day and 90-day mortality by ASA Score



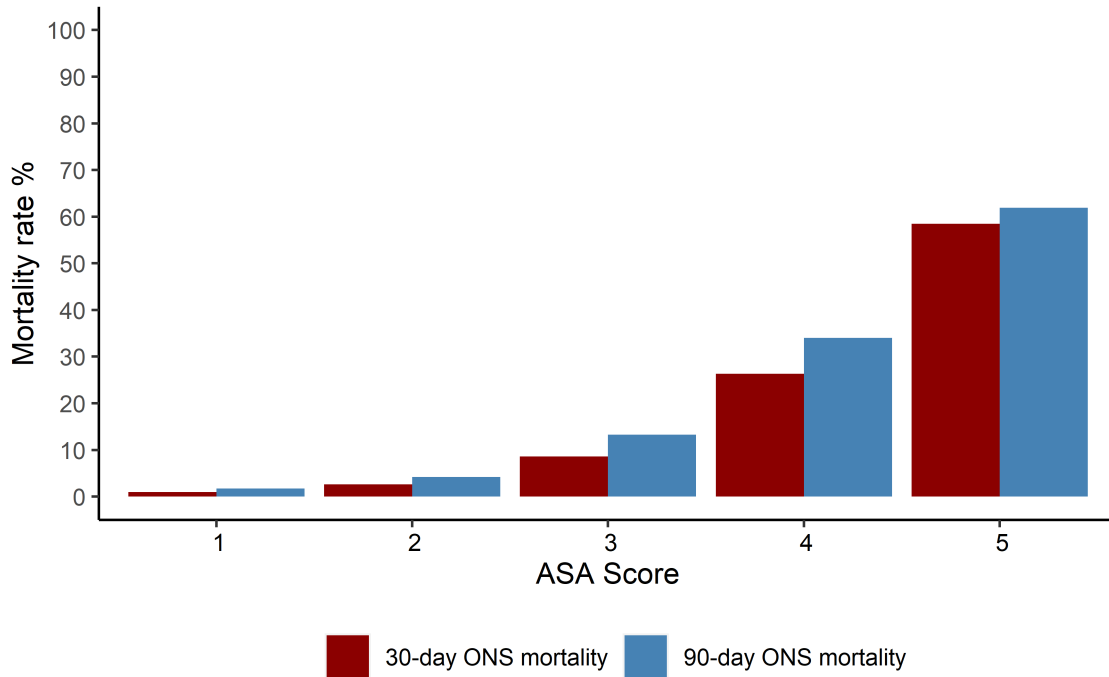


Table 8.1.6 ONS 30-day and 90-day mortality by Admission Type

Admission Type	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
Elective	1464 (5.9%)	143 (9.8%)	189 (12.9%)
Emergency	23359 (94.1%)	2168 (9.3%)	3030 (13%)

Table 8.1.7 ONS 30-day and 90-day mortality by Documented Risk of death

Risk Assessment	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
High	10980 (44.2%)	1908 (17.4%)	2522 (23%)
Low	9869 (39.8%)	166 (1.7%)	328 (3.3%)
Not Documented	3974 (16%)	237 (6%)	369 (9.3%)

Table 8.1.8 ONS 30-day and 90-day mortality by Urgency of Surgery

Urgency of Surgery	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
<2 hours	2798 (11.3%)	595 (21.3%)	692 (24.7%)
2-6 hours	9626 (38.8%)	979 (10.2%)	1282 (13.3%)
6-18 hours	8144 (32.8%)	493 (6.1%)	775 (9.5%)
>18 hours	4249 (17.1%)	243 (5.7%)	469 (11%)

Figure 8.1.6 ONS 30-day and 90-day mortality by Urgency of Surgery

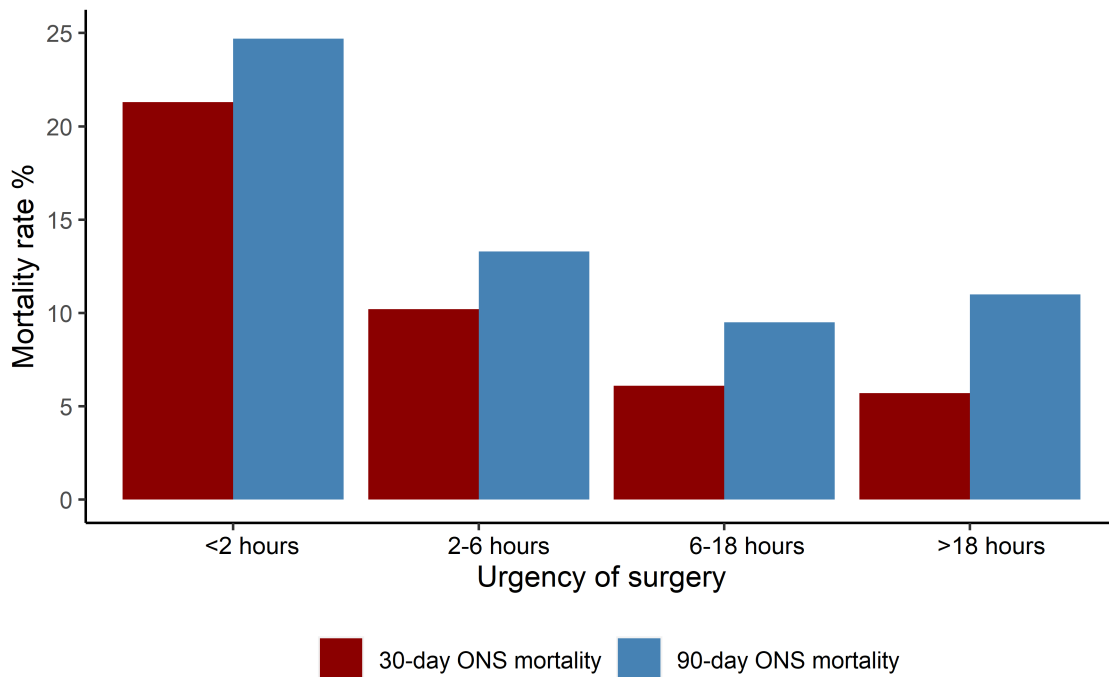


Table 8.1.9 Predicted calculated risk and ONS mortality by time of day of arrival in operating theatre

Time of day	Total patients	Median NELA prep.	Mean NELA prep	ONS 30-day mortality	ONS 90-day mortality
0000-0759	2251 (9.1%)	7.1	14.6	337 (15%)	410 (15%)
0800-1159	5944 (23.9%)	3.5	8.3	438 (7.4%)	659 (7.4%)
1200-1759	10229 (41.2%)	4.0	9.1	930 (9.1%)	1336 (9.1%)
1800-2359	5661 (22.8%)	5.0	10.9	541 (9.6%)	729 (9.6%)
Missing	738 (3%)	3.7	9.0	65 (8.8%)	85 (8.8%)

Table 8.1.10 Unplanned return to theatre by ONS 30-day and 90-day mortality

Unplanned return to theatre	Total patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
Missing	46 (0.2%)	41 (89.1%)	42 (91.3%)
No return	22403 (90.3%)	1875 (8.4%)	2643 (11.8%)
Planned return	783 (3.2%)	137 (17.5%)	180 (23%)
Unknown	225 (0.9%)	29 (12.9%)	38 (16.9%)
Unpl.& planned return	120 (0.5%)	27 (22.5%)	33 (27.5%)
Unplanned return	1246 (5%)	202 (16.2%)	283 (22.7%)

Table 8.1.11 ONS 30-day and 90-day mortality by day of the week of hospital admission and by day of surgery for surgical urgency category < 18h.

Day of week	Admission day (n(%))	ONS 30-day mortality (Adm.)	ONS 90-day mortality(Adm.)	Surgery day (n(%))	ONS 30-day mortality(Surg.)	ONS 90-day mortality(Surg.)
Mon	2937 (16)	297 (10.1%)	391 (13.3%)	2523 (13.8%)	234 (9.3%)	323 (12.8%)
Tue	2751 (15)	293 (10.7%)	368 (13.4%)	2683 (14.6%)	260 (9.7%)	333 (12.4%)
Wed	2682 (14.6)	280 (10.4%)	375 (14%)	2680 (14.6%)	285 (10.6%)	379 (14.1%)
Thu	2740 (15)	274 (10%)	362 (13.2%)	2736 (14.9%)	274 (10%)	367 (13.4%)
Fri	2766 (15.1)	272 (9.8%)	358 (12.9%)	2828 (15.4%)	291 (10.3%)	399 (14.1%)
Sat	2193 (12)	210 (9.6%)	290 (13.2%)	2436 (13.3%)	251 (10.3%)	326 (13.4%)
Sun	2255 (12.3)	212 (9.4%)	290 (12.9%)	2438 (13.3%)	243 (10%)	307 (12.6%)

Table 8.1.12 Preoperative NELA calculated risk by ONS mortality

Preoperative NELA risk	Total patients	Median NELA risk	ONS 30-day mortality	ONS 90-day mortality
High	11608 (46.8)	13.6	2116 (18.2%)	2836 (24.4%)
Low	13215 (53.2)	1.4	195 (1.5%)	383 (2.9%)
Overall	24823 (100)	4.3	2311 (9.3%)	3219 (13%)

Table 8.1.13 Preoperative Documented Risk by ONS mortality

Preoperative Documented risk	Total patients	Median NELA risk	ONS 30-day mortality	ONS 90-day mortality
High	10980	12.0	1908 (17.4)	2522 (23)
Low	9869	1.4	166 (1.7)	328 (3.3)
Not Documented	3974	2.6	237 (6)	369 (9.3)

Table 8.1.14 30-day and 90-day ONS mortality rates according to level of peritoneal contamination

Audit year	Peritoneal contamination	Total of patients	ONS 30-day mortality (n(%))	ONS 90-day mortality (n(%))
6	None	9389 (37.8)	631 ( 6.7 )	978 ( 10.4 )
6	Serous_fluid	7294 (29.4)	666 ( 9.1 )	944 ( 12.9 )
6	Free_pus_blood_or	5800 (23.4)	850 ( 14.7 )	1064 ( 18.3 )
6	Localised_pus	2330 (9.4)	162 ( 7 )	231 ( 9.9 )
6	Missing	10 (0)	2 ( 20 )	2 ( 20 )

## 8.2 Length of stay (LOS)

Table 8.2.1 Postoperative length of stay (in days), by Audit Year (Only includes patients who survived to discharge)

Audit year	Total patients (n)	LOS (Mean and Standard deviation))	LOS (Median and IQR)
1	18003	19.2 SD (25.5)	12 (7-21)
2	20383	17.1 SD (18.8)	11 (7-20)
3	22056	16.8 SD (19.7)	11 (7-19)
4	21439	16.2 SD (17.7)	11 (7-19)
5	21861	16.1 SD (17.8)	11 (7-19)
6	22069	15.4 SD (15.9)	10 (7-18)

Table 8.2.2 Postoperative length of stay (in days), by Age (Only includes patients who survived to discharge)

Age interval	LOS (Mean and Standard deviation))	LOS (Median and IQR)
18-24	11.6 SD (11.8)	8 (5-13)
25-34	11.4 SD (15.9)	7 (5-12)
35-44	11.8 SD (12.3)	8 (5-13)
45-54	13.7 SD (15.1)	9 (6-16)
55-64	14.8 SD (15.6)	10 (6-17)
>=65	17.2 SD (16.6)	12 (7-21)

Table 8.2.3 Postoperative length of stay (in days), by Age group  
(Only includes patients who survived to discharge)

Age interval	LOS (Mean and Standard deviation))	LOS (Median and IQR)
18_39	11.5 SD (13.8)	8 (5-13)
40_49	12.4 SD (13.1)	8 (5-14)
50_59	14.5 SD (15.8)	10 (6-16)
60_69	15.5 SD (15.9)	10 (7-18)
70_79	17.1 SD (17.4)	12 (7-21)
80_89	18.2 SD (15.8)	14 (9-22)
>=90	18.5 SD (15.1)	15 (9-23)

Table 8.2.4 Postoperative length of stay (in days) for patients under 40 years old  
(Only includes patients who survived to discharge)

Patients < 40 years old (n)	LOS (Mean and Standard deviation))	LOS (Median and IQR)
2603 (100)	11.5 SD (13.8)	8 (5-13)

Table 8.2.5 Postoperative length of stay (in days), by Documented Risk  
(Only includes patients who survived to discharge)

Preop. Documented Risk	LOS (Mean and Standard deviation))	LOS (Median and IQR)
High	20.5 SD (19.6)	15 (9-25)
Low	11.5 SD (10.9)	8 (6-13)
Not Documented	13.8 SD (13.8)	9 (6-16)

Table 8.2.6 Postoperative length of stay (in days), by ASA Score

ASA Score	LOS (Mean and Standard deviation))	LOS (Median and IQR)
1	9.2 SD (8.5)	7 (5-10)
2	12.2 SD (12.4)	9 (6-14)
3	17.2 SD (16)	12 (8-21)
4	24.8 SD (22.8)	18 (11-31)
5	30.9 SD (21.8)	26 (13.5-45)

Table 8.2.7 Postoperative length of stay (in days) for patients who had an unplanned return to theatre (Only includes patients who survived to discharge)

Unplanned return to theatre	LOS (Mean and Standard deviation))	LOS (Median and IQR)
Missing	21.4 SD (19.8)	12 (10-20)
No return	14 SD (13.8)	10 (6-17)
Planned return	32.7 SD (26.7)	25 (14-43)
Unknown	13.8 SD (14.3)	9 (5-17)
Unpl.& planned return	51.5 SD (43.4)	45 (24-58.5)
Unplanned return	33.2 SD (24.9)	27 (17-42)

Table 8.2.8 Postoperative length of stay (in days) for patients who had a return to theatre (Only includes patients who survived to discharge)

Return to theatre	LOS (Mean and Standard deviation))	LOS (Median and IQR)
Missing	21.4 SD (19.8)	12 (10-20)
No return to theatre	14 SD (13.8)	10 (6-17)
One or more returns	33.8 SD (26.9)	27 (16-44)
Unknown	13.8 SD (14.3)	9 (5-17)

Table 8.2.9 Postoperative length of stay (in days) for patients who had an unplanned admission to critical care

(Only includes patients who survived to discharge)

Unplanned Admission to Critical Care	LOS (Mean and Standard deviation)	LOS (Median and IQR)
No unplanned admission to ccu	15.1 SD (15.6)	10 (6-18)
Unknown	19.5 SD (17.7)	15 (7-25)
Unplanned admission to ccu	29.8 SD (22.2)	24 (15-38)
NA	21.4 SD (19.8)	12 (10-20)

### 8.3 Unplanned return to theatre

Table 8.3.2 Return to theatre

Return to theatre	Audit Year 4 (n(%))	Audit Year 5 (n(%))	Audit Year 6 (n(%))
Missing	50 (0.2%)	58 (0.2%)	46 (0.2%)
No return to theatre	22576 (92.6%)	22171 (89.7%)	22403 (90.3%)
One or more returns	1464 (6%)	2181 (8.8%)	2149 (8.7%)
Unknown	293 (1.2%)	308 (1.2%)	225 (0.9%)

Table 8.3.3 Unplanned return to theatre

Unplanned return to theatre	Audit Year 4 (n(%))	Audit Year 5 (n(%))	Audit Year 6 (n(%))
Missing	50 (0.2%)	58 (0.2%)	46 (0.2%)
No return	22576 (92.6%)	22171 (89.7%)	22403 (90.3%)
Planned return	NA	744 (3%)	783 (3.2%)
Unknown	293 (1.2%)	308 (1.2%)	225 (0.9%)
Unpl. & planned return	NA	120 (0.5%)	120 (0.5%)
Unplanned return	1464 (6%)	1317 (5.3%)	1246 (5%)

Table 8.3.4 Unplanned return to theatre, by Gender

Unplanned return to theatre	Female	Male
Missing	24 (0.2%)	22 (0.2%)
No return	11865 (91.3%)	10538 (89.1%)
Planned return	364 (2.8%)	419 (3.5%)
Unknown	113 (0.9%)	112 (0.9%)
Unpl. & planned return	43 (0.3%)	77 (0.7%)
Unplanned return	585 (4.5%)	661 (5.6%)

Table 8.3.4 Unplanned return to theatre, by Age group

Unplanned return to theatre	18-24	25-34	35-44	45-54	55-64	>=65
Missing	NA	NA	NA	4 (0.1%)	5 (0.1%)	37 (0.3%)
No return	534 (91.4%)	1167 (92.3%)	1602 (91.3%)	2724 (89.5%)	3787 (89%)	12589 (90.4%)
Planned return	21 (3.6%)	41 (3.2%)	55 (3.1%)	120 (3.9%)	164 (3.9%)	382 (2.7%)
Unknown	6 (1%)	12 (0.9%)	13 (0.7%)	21 (0.7%)	45 (1.1%)	128 (0.9%)
Unpl.& planned return	NA	3 (0.2%)	5 (0.3%)	22 (0.7%)	21 (0.5%)	69 (0.5%)
Unplanned return	23 (3.9%)	42 (3.3%)	79 (4.5%)	154 (5.1%)	234 (5.5%)	714 (5.1%)

Table 8.3.5 Unplanned return to theatre, by Age (<65 and ≥ 65)

Unplanned return to theatre	<65	>=65
Missing	9 (0.1%)	37 (0.3%)
No return	9814 (90%)	12589 (90.4%)
Planned return	401 (3.7%)	382 (2.7%)
Unknown	97 (0.9%)	128 (0.9%)
Unpl.& planned return	51 (0.5%)	69 (0.5%)
Unplanned return	532 (4.9%)	714 (5.1%)

Table 8.3.6 Unplanned return to theatre, by Documented Risk

Unplanned return to theatre	High	Low	Not Documented
Missing	37 (0.3%)	2 (0%)	7 (0.2%)
No return	9525 (86.7%)	9254 (93.8%)	3624 (91.2%)
Planned return	523 (4.8%)	138 (1.4%)	122 (3.1%)
Unknown	110 (1%)	93 (0.9%)	22 (0.6%)
Unpl.& planned return	78 (0.7%)	25 (0.3%)	17 (0.4%)
Unplanned return	707 (6.4%)	357 (3.6%)	182 (4.6%)

Table 8.3.7 Unplanned return to theatre by Urgency of Surgery



Unplanned return to theatre	<2 hours	2-6 hours	6-18 hours
Missing	25 (1%)	11 (0.1%)	2 (0%)
No return	2071 (81.6%)	7747 (89.2%)	6632 (93.4%)
Planned return	194 (7.6%)	338 (3.9%)	121 (1.7%)
Unknown	32 (1.3%)	73 (0.8%)	59 (0.8%)
Unpl.& planned return	24 (0.9%)	49 (0.6%)	19 (0.3%)
Unplanned return	191 (7.5%)	466 (5.4%)	270 (3.8%)

Table 8.3.8 Unplanned return to theatre by Gender

Unplanned return to theatre	Female	Male
Missing	24 (0.2%)	22 (0.2%)
No return	11865 (91.3%)	10538 (89.1%)
Planned return	364 (2.8%)	419 (3.5%)
Unknown	113 (0.9%)	112 (0.9%)
Unpl.& planned return	43 (0.3%)	77 (0.7%)
Unplanned return	585 (4.5%)	661 (5.6%)

Table 8.3.9 Unplanned return to theatre by consultant presence

Unplanned return to theatre	Consultant Surgeon presence	Consultant Anaesthetist presence	Surgeon and Anaesthetist presence
Missing	44 (95.7%)	45 (97.8%)	43 (93.5%)
No return	20860 (93.1%)	19640 (87.7%)	18649 (83.2%)
Planned return	734 (93.7%)	718 (91.7%)	683 (87.2%)
Unknown	214 (95.1%)	206 (91.6%)	196 (87.1%)
Unpl.& planned return	113 (94.2%)	111 (92.5%)	105 (87.5%)
Unplanned return	1190 (95.5%)	1131 (90.8%)	1095 (87.9%)

## 8.4 Unplanned admission to critical care

Table 8.4.1 Postoperative destination following original laparotomy for patients who had an unplanned admission to critical care

<b>Postoperative Destination for Patients with unplanned admission to critical care</b>	<b>Audit Year 4 (n(%))</b>	<b>Audit Year 5 (n(%))</b>	<b>Audit Year 6 (n(%))</b>
CCU	596 (72.6)	612 (73.6)	558 (76.4)
Enhanced	50 (6.1)	46 (5.5)	30 (4.1)
Ward	175 (21.3)	174 (20.9)	142 (19.5)

Table 8.4.2 Proportion of patients who had an unplanned admission to critical care and ONS mortality

<b>Unplanned Critical Care Admission</b>	<b>Total patients (n(%))</b>	<b>ONS 30-day Mortality (n(%))</b>
No unplanned admission to ccu	23939 (96.6)	2106 (8.8)
Unknown/Missing	123 (0.5)	22 (17.9)
Unplanned admission to ccu	730 (2.9)	152 (20.8)

Table 8.4.3 Proportion of patients with unplanned admission to critical care

<b>Unplanned Critical Care Admission</b>	<b>Audit Year 4 (n(%))</b>	<b>Audit Year 5 (n(%))</b>	<b>Audit Year 6 (n(%))</b>
No unplanned admission to ccu	23344 (95.7)	23663 (95.7)	23939 (96.4)
Unknown/Missing	218 (0.9)	223 (0.9)	154 (0.6)
Unplanned admission to ccu	821 (3.4)	832 (3.4)	730 (2.9)



## 9 Contacts

Please contact the **NELA team** for any questions about the audit or data collection.

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National Emergency Laparotomy Audit (NELA)

Royal College of Anaesthetists, Churchill House, 35 Red Lion Square, London WC1R 4SG

020 7092 1676 | [info@nela.org.uk](mailto:info@nela.org.uk) | [www.nela.org.uk](http://www.nela.org.uk)

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