



Fifth Patient Report of the National Emergency Laparotomy Audit (NELA)

December 2017 to November 2018

Supplementary Tables and Figures

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2 Introduction

Figure 2.1 Number of cases included in the Year 5 analysis

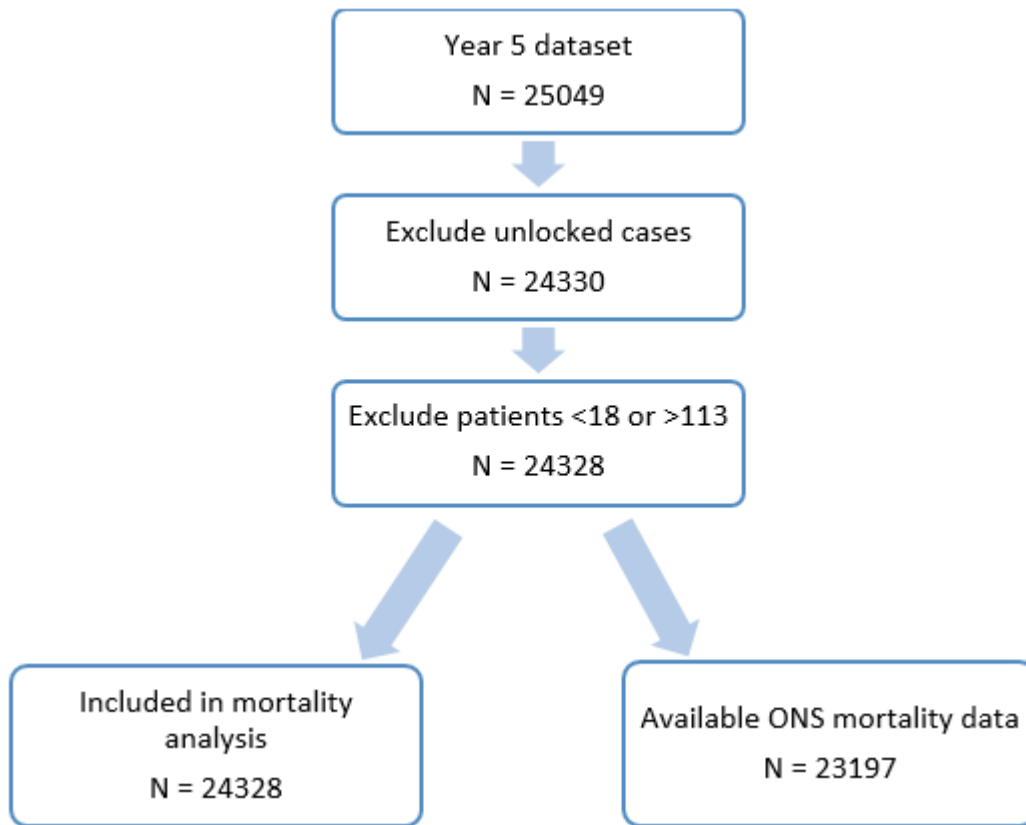
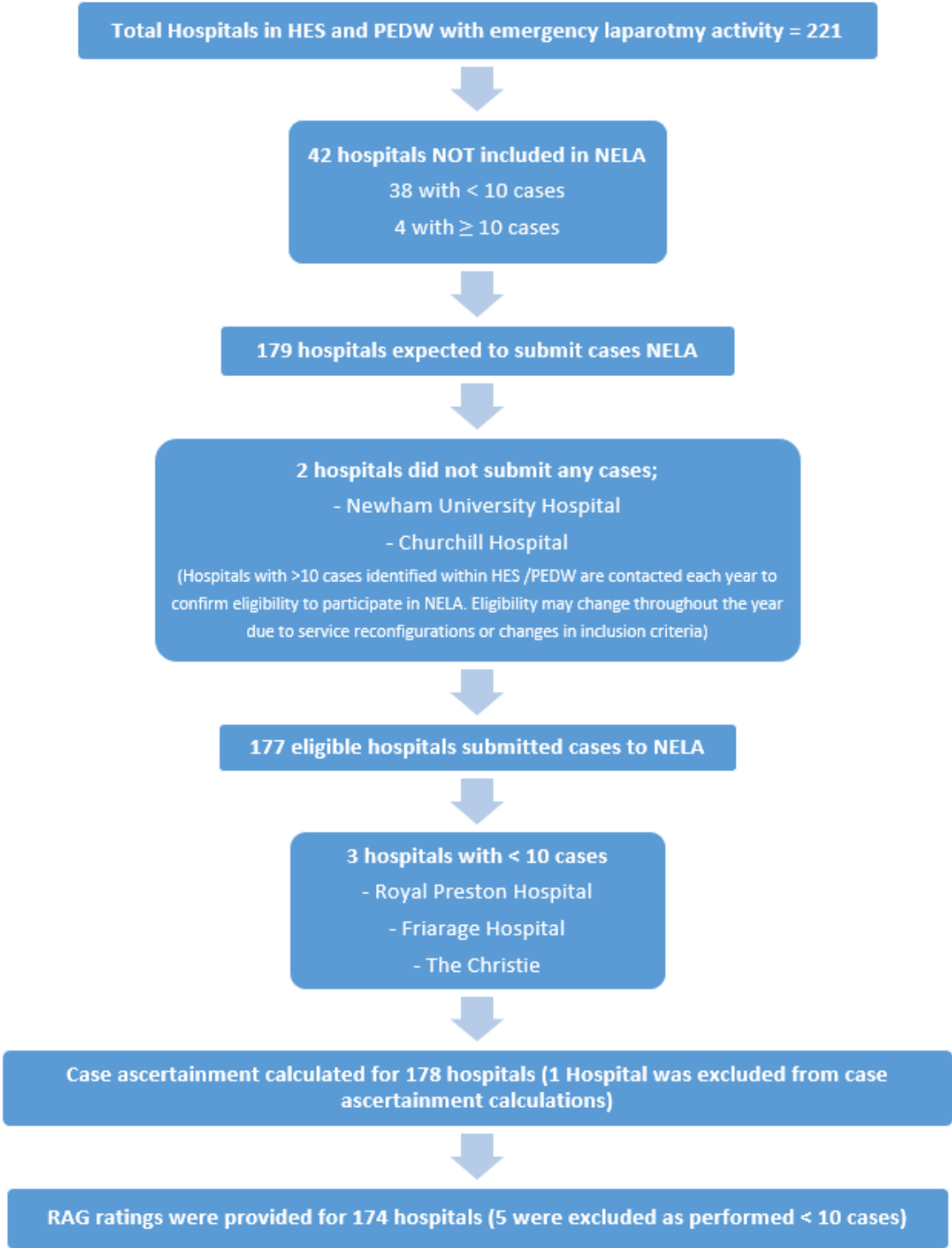


Table 2.1 Number of cases recorded per NELA Audit year

NELA Audit Year	Unlocked cases	Locked cases	% Locked cases
1	21053	20690	98.3
2	23978	23649	98.6
3	25677	25349	98.7
4	24867	24366	98.0
5	25049	24328	97.1

Figure 2.2 Eligible Hospitals included in the data analysis



3 Key findings of the fifth National Emergency Laparotomy Audit

3.1 Who has emergency laparotomy surgery?

Table 3.1.1 Gender by NELA audit year

Gender	Year 1 (n(%))	Year 2 (n(%))	Year 3 (n(%))	Year 4 (n(%))	Year 5 (n(%))
Female	10663 (51.5)	12322 (52.1)	13076 (51.6)	12523 (51.4)	12497 (51.4)
Male	10027 (48.5)	11327 (47.9)	12273 (48.4)	11843 (48.6)	11831 (48.6)

Table 3.1.2 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(%))
18_39	2223 (10.7)	2519 (10.7)	2823 (11.1)	2727 (11.2)	2711 (11.1)
40_49	1999 (9.7)	2314 (9.8)	2461 (9.7)	2269 (9.3)	2246 (9.2)
50_59	2776 (13.4)	3337 (14.1)	3584 (14.1)	3574 (14.7)	3656 (15)
60_69	4310 (20.8)	4874 (20.6)	5227 (20.6)	4932 (20.2)	4837 (19.9)
70_79	5201 (25.1)	5889 (24.9)	6325 (25)	6175 (25.3)	6162 (25.3)
80_89	3641 (17.6)	4165 (17.6)	4330 (17.1)	4141 (17)	4200 (17.3)
>=90	540 (2.6)	551 (2.3)	599 (2.4)	548 (2.2)	516 (2.1)

Table 3.1.3 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(%))
1	2119 (10.2)	2430 (10.3)	2612 (10.3)	2400 (9.8)	2256 (9.3)
2	6964 (33.7)	8174 (34.6)	8937 (35.3)	8660 (35.5)	8720 (35.8)
3	7324 (35.4)	8340 (35.3)	8956 (35.3)	8785 (36.1)	8763 (36)
4	3838 (18.6)	4233 (17.9)	4332 (17.1)	4080 (16.7)	4142 (17)
5	445 (2.2)	472 (2)	512 (2)	441 (1.8)	447 (1.8)

Table 3.1.4 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(%))
<2 hours	3038 (14.7)	3001 (12.7)	2913 (11.5)	2788 (11.4)	2824 (11.6)
2-6 hours	6852 (33.1)	9147 (38.7)	9771 (38.5)	9154 (37.6)	9141 (37.6)
6-18 hours	5172 (25)	7434 (31.4)	8299 (32.7)	8220 (33.7)	7965 (32.7)
>18 hours	2827 (13.7)	3949 (16.7)	4279 (16.9)	4144 (17)	4152 (17.1)
Missing	2801 (13.5)	118 (0.5)	87 (0.3)	60 (0.2)	246 (1)

Table 3.1.5 Preoperative NELA predicted 30 day mortality, by NELA audit year

Preoperative NELA Mortality risk	Year 4 (n(%))	Year 5 (n(%))
High	11117 (45.6)	11061 (45.5)
Low	12661 (52)	12916 (53.1)
Missing	588 (2.4)	351 (1.4)



Table 3.1.6 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(%))
Elective	1531 (7.4)	1604 (6.8)	1648 (6.5)	1528 (6.3)	1451 (6)
Emergency	19159 (92.6)	22045 (93.2)	23701 (93.5)	22820 (93.7)	22863 (94)
Missing	NA	NA	NA	18 (0.1)	14 (0.1)

4 The emergency laparotomy patient perioperative journey

[No figures or tables in this section]

5 Preoperative care

5.1 How do patients present for emergency laparotomy?

Table 5.1.1 Surgical Specialty at admission, by NELA audit year

Surgical Specialty at Admission	Year 4 (n(%))	Year 5 (n(%))
Gastroenterology	530 (2.2)	554 (2.3)
Elderly Care	77 (0.3)	79 (0.3)
Other	1098 (4.5)	1030 (4.2)
General Medicine	2564 (10.5)	2472 (10.2)
General Surgery	19824 (81.4)	19829 (81.5)
Missing	273 (1.1)	364 (1.5)

Table 5.1.2 Documented preoperative NELA risk, by admission specialty

Preoperative NELA Mortality risk	Gastroenterology	Elderly Care	Other	General Medicine	General Surgery	Missing
High	164 (29.6)	68 (86.1)	592 (57.5)	1548 (62.6)	8534 (43)	155 (42.6)
Low	381 (68.8)	9 (11.4)	423 (41.1)	901 (36.4)	10998 (55.5)	204 (56)
Missing	9 (1.6)	2 (2.5)	15 (1.5)	23 (0.9)	297 (1.5)	5 (1.4)

Table 5.1.2 Initial Route of Admission, by NELA Audit Year

Initial Route	Year 4 (n(%))	Year 5 (n(%))
Assessed initially in 'front of house' acute surgical assessment unit	2512 (10.3)	2327 (9.6)
Assessed initially in emergency department	17031 (69.9)	16940 (69.6)
Direct admission from clinic	717 (2.9)	689 (2.8)
Direct referral to ward by GP	1650 (6.8)	1408 (5.8)
Hospital transfer	596 (2.4)	579 (2.4)
Missing	1860 (7.6)	2385 (9.8)

5.2 Timeliness of arrival in theatre

Table 5.2.1 Time to theatre by Urgency of Surgery

Urgency of Surgery	Year 1 (n(%))	Year 2 (n(%))	Year 3 (n(%))	Year 4 (n(%))	Year 5 (n(%))
<2 hours	1190 (69.3)	1869 (71.9)	1991 (75.8)	1839 (73.1)	1852 (72.6)
2-6 hours	3752 (81.1)	6696 (85.6)	7252 (85.7)	6917 (86.4)	7063 (86.3)
6-18 hours	2669 (78.8)	4941 (80.7)	5611 (81.7)	5644 (81.3)	5522 (81.3)

Table 5.2.2 Time in hours from admission to consultant surgeon review, by admitting speciality

Surgical Speciality	Number of patients (n)	Mean	Median (IQR)
Gastroenterology	554	144.9	84.2 (24.5-191)
Elderly Care	79	116.6	77.5 (37.9-148)
Other	1030	158.2	71.8 (19.8-180.5)
General Medicine	2472	112.5	46.5 (19.9-120.2)
General Surgery	19829	28.6	11 (5-18.2)
Missing	364	33.5	11.4 (5.3-20.7)

Table 5.2.3 Proportion of cases with time to 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	1807	1314 (72.7)	4198	3644 (86.8)	2497	2042 (81.8)
Low	349	252 (72.2)	2451	2128 (86.8)	2741	2244 (81.9)
Not Documented	394	286 (72.6)	1531	1291 (84.3)	1552	1236 (79.6)

Table 5.2.4 Time of the day decision to operate by preoperative risk of death

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	1157	1006 (86.9)	506	438 (86.6)	355	304 (85.6)
0800-1159	2780	2263 (81.4)	2303	1984 (86.1)	1451	1183 (81.5)
1200-1759	2638	2108 (79.9)	1689	1327 (78.6)	1025	788 (76.9)
1800-2359	1927	1623 (84.2)	1043	875 (83.9)	646	538 (83.3)

Table 5.2.5 Proportion of cases with time to theatre within Urgency of Surgery, by Time of the day decision to operate.

Time of the day of decision to operate	<2 hours (n)	NCEPOD met (%)	2-6 hours (n)	NCEPOD met (%)	6-18 hours (n)	NCEPOD met (%)
0_8	604	487 (80.6)	1004	874 (87.1)	410	387 (94.4)
8_12	506	329 (65)	2722	2270 (83.4)	3306	2831 (85.6)
12_18	749	525 (70.1)	2591	2267 (87.5)	2012	1431 (71.1)
18_0	691	511 (74)	1863	1652 (88.7)	1062	873 (82.2)

Table 5.2.5 Proportion of cases with time to theatre within NCEPOD, 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	878	217 (24.7%)	1913	232 (12.1%)	952	134 (14.1%)
Consultant_in_person	1558	443 (28.4%)	6002	846 (14.1%)	5672	1108 (19.5%)
Junior_review	35	9 (25.7%)	102	16 (15.7%)	58	8 (13.8%)
Unknown	79	29 (36.7%)	163	23 (14.1%)	108	18 (16.7%)

Table 5.2.6 Time to theatre within NCEPOD by Age Group

age.interval	<2 hours	2-6 hours	6-18 hours
18_39	260; delay = 51 (19.6%)	848; delay = 114 (13.4%)	709; delay = 126 (17.8%)
40_49	241; delay = 51 (21.2%)	809; delay = 102 (12.6%)	589; delay = 100 (17%)
50_59	402; delay = 104 (25.9%)	1245; delay = 151 (12.1%)	992; delay = 192 (19.4%)
60_69	566; delay = 160 (28.3%)	1652; delay = 220 (13.3%)	1291; delay = 264 (20.4%)
70_79	651; delay = 192 (29.5%)	2032; delay = 280 (13.8%)	1773; delay = 306 (17.3%)
80_89	401; delay = 126 (31.4%)	1408; delay = 230 (16.3%)	1272; delay = 245 (19.3%)
>=90	29; delay = 14 (48.3%)	186; delay = 20 (10.8%)	164; delay = 35 (21.3%)

Table 5.2.7 Time to theatre within NCEPOD for patients over 70

age70	<2 hours	2-6 hours	6-18 hours
<70	1469; delay = 366 (24.9%)	4554; delay = 587 (12.9%)	3581; delay = 682 (19%)
>=70	1081; delay = 332 (30.7%)	3626; delay = 530 (14.6%)	3209; delay = 586 (18.3%)

Contacts

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