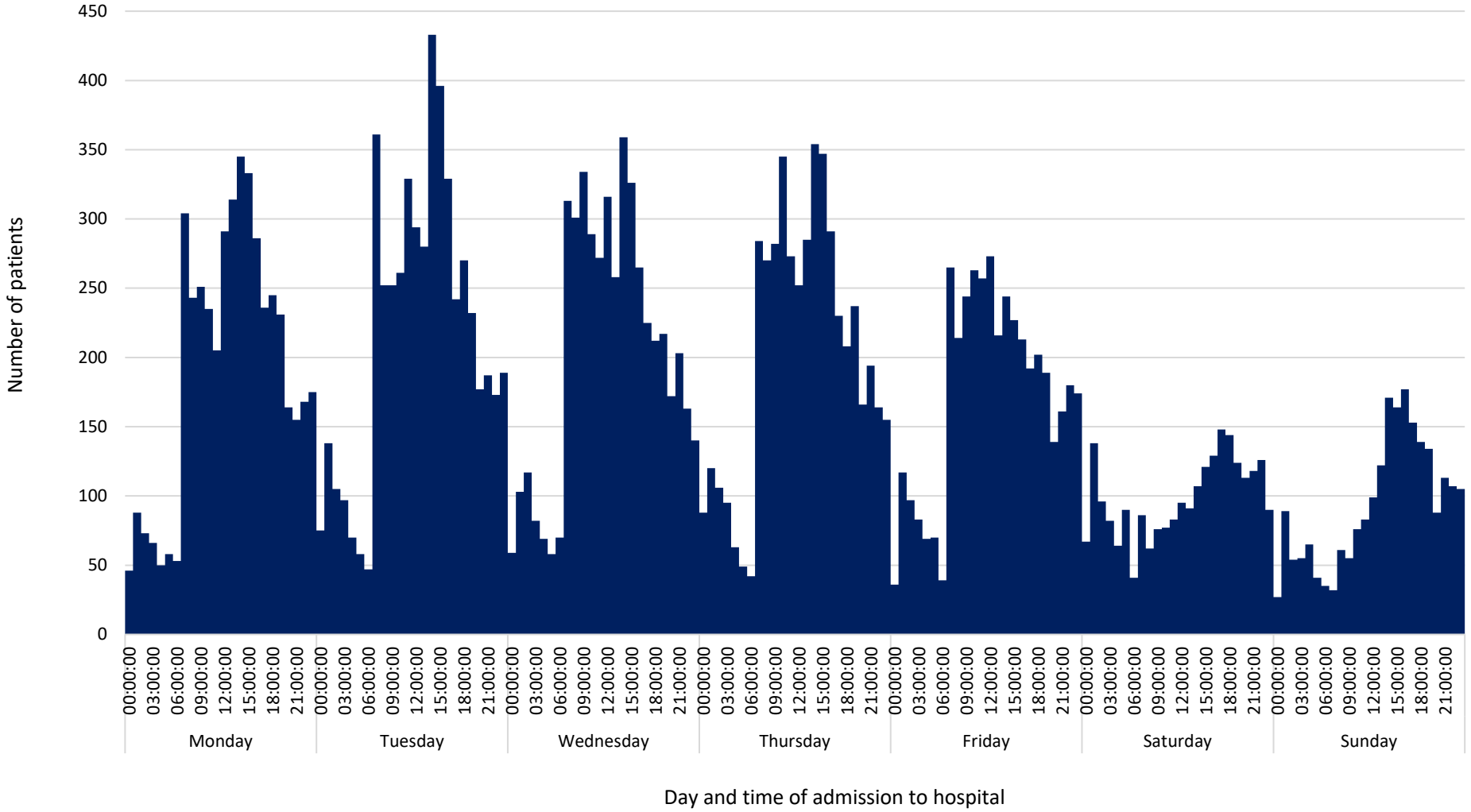
A Shared Aspiration

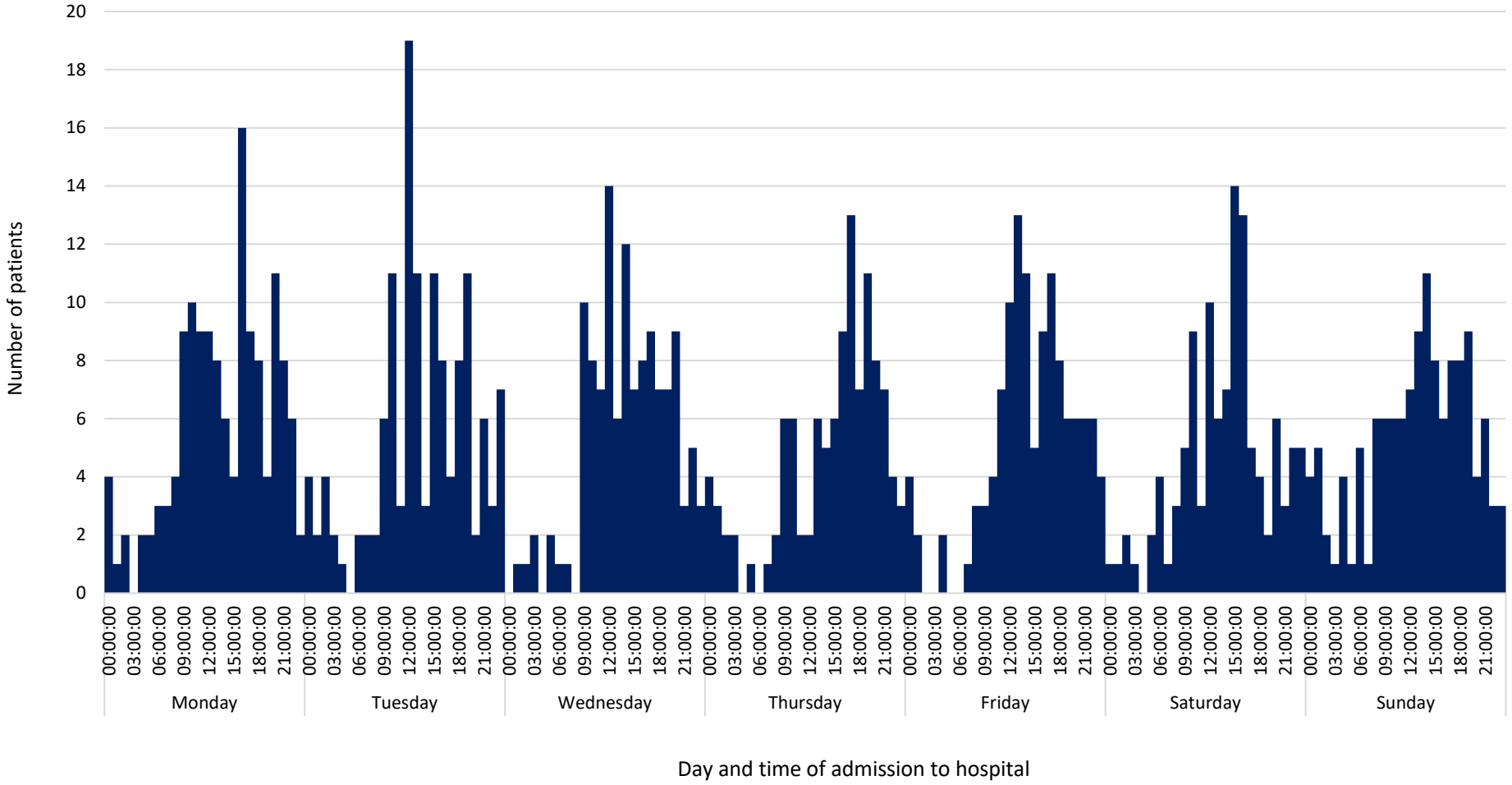
A review of the quality of care provided to adults who underwent a chest drain insertion or pleural aspiration

TABLES AND FIGURES



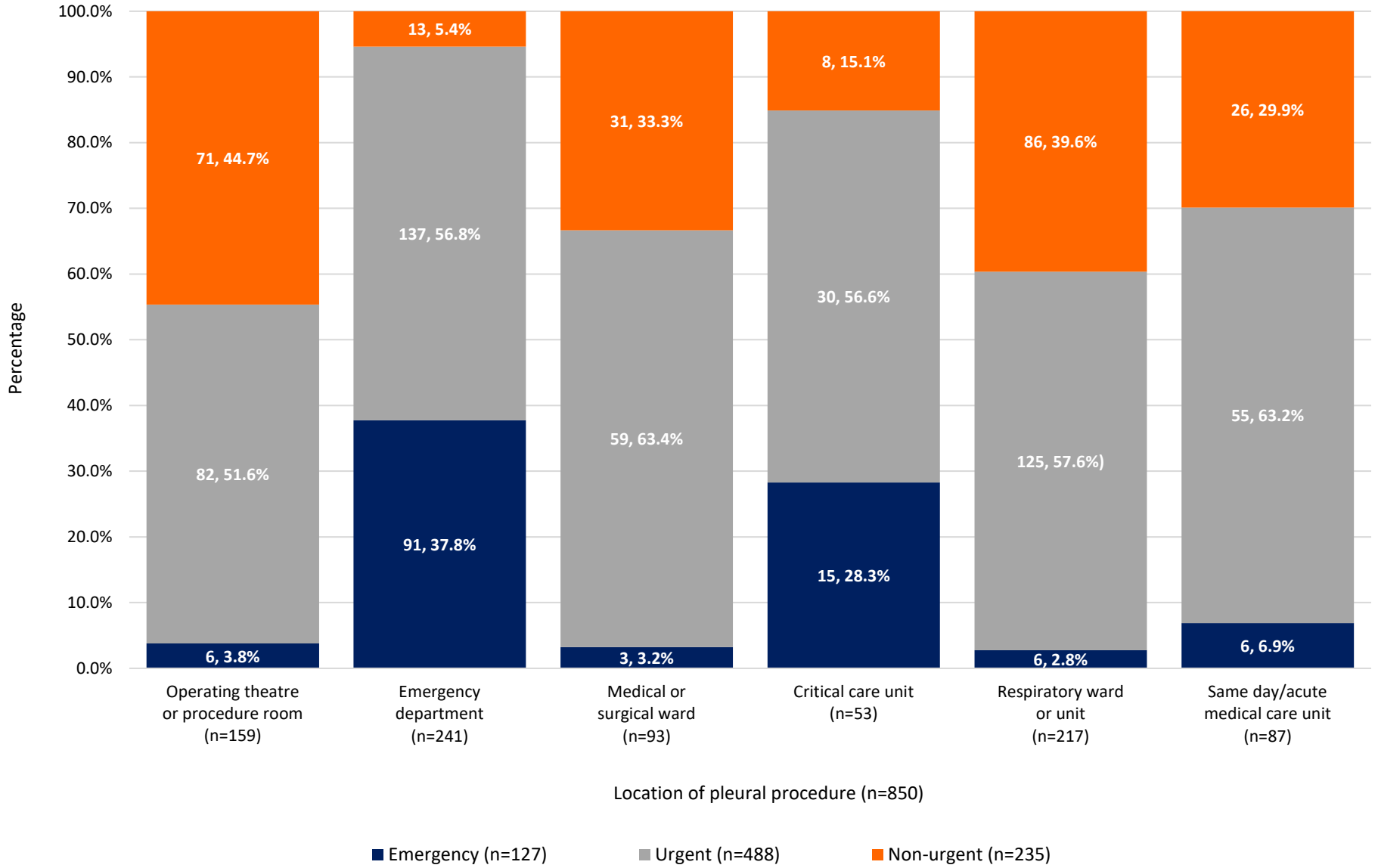
F2.2 Day and time of admission to hospital, whole study population; *n=29,559*

Spreadsheet data



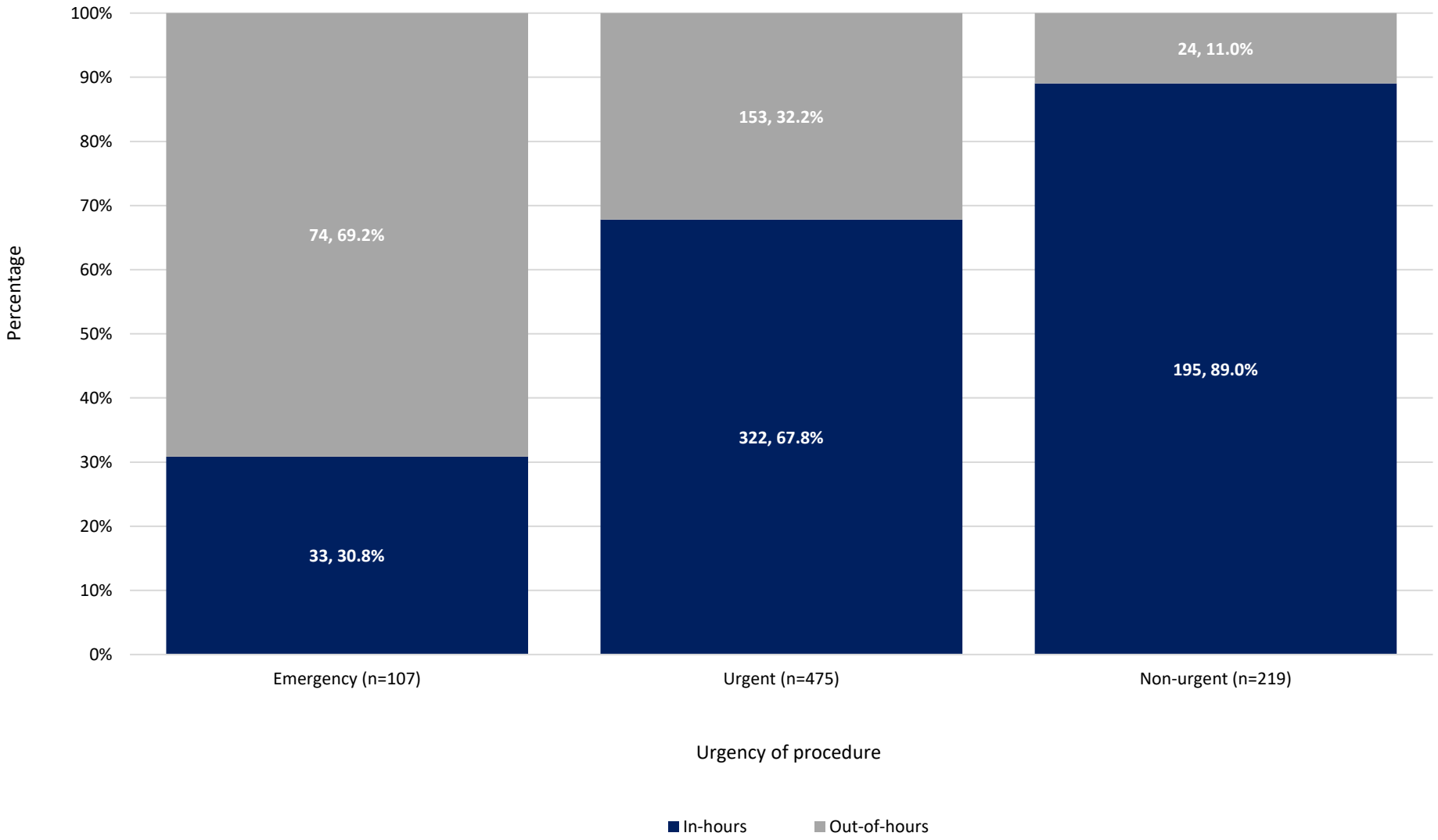
F2.3 Day and time of admission to hospital, sampled population; *n=978*

Clinician questionnaire data



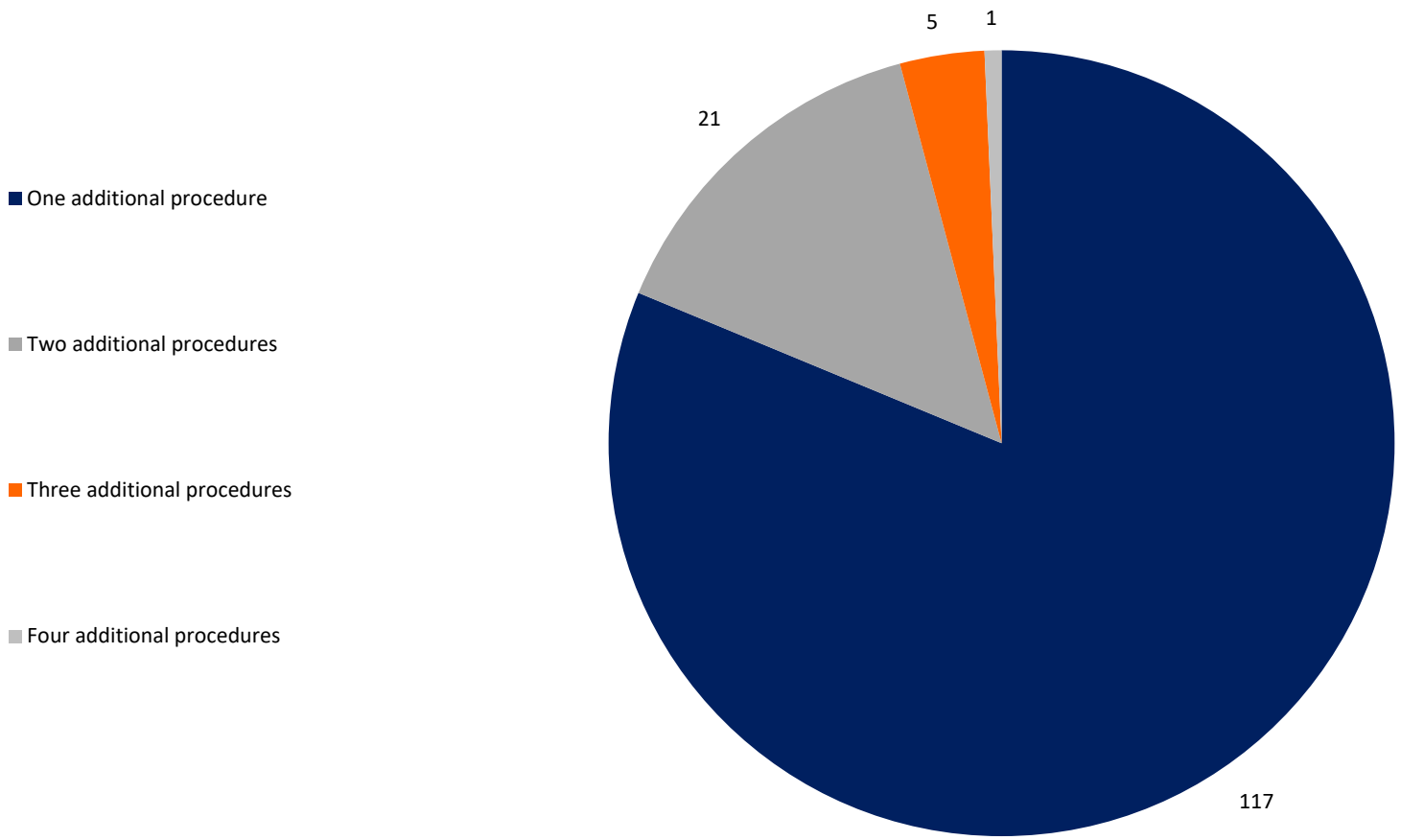
F2.4 Urgency of procedure vs location of procedure

Clinician questionnaire data; n=850



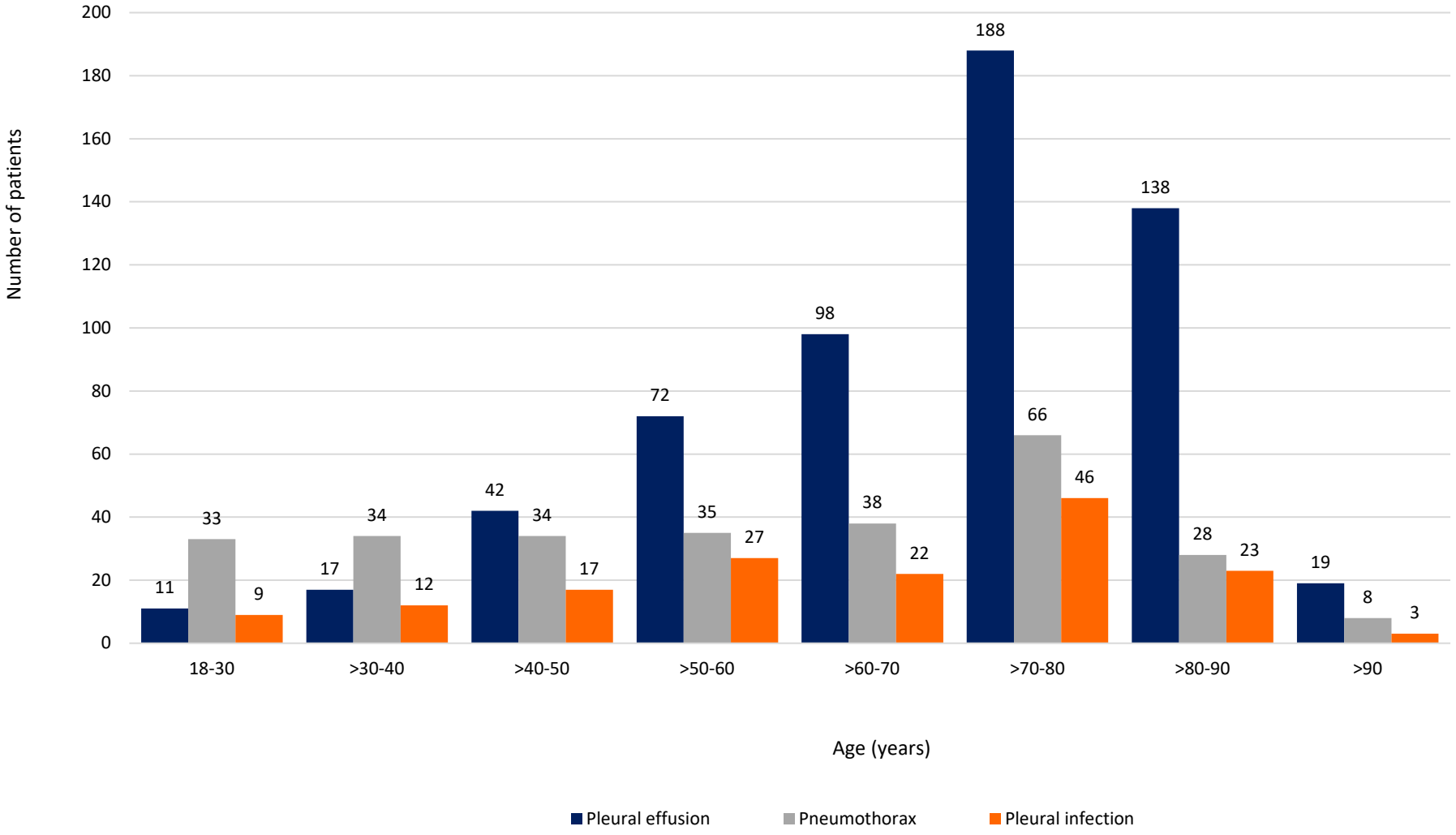
F2.5 Timing of procedure versus urgency

Clinician questionnaire data; *n=801*



F2.6 Number of additional pleural procedures

Clinician questionnaire data; *n=144*

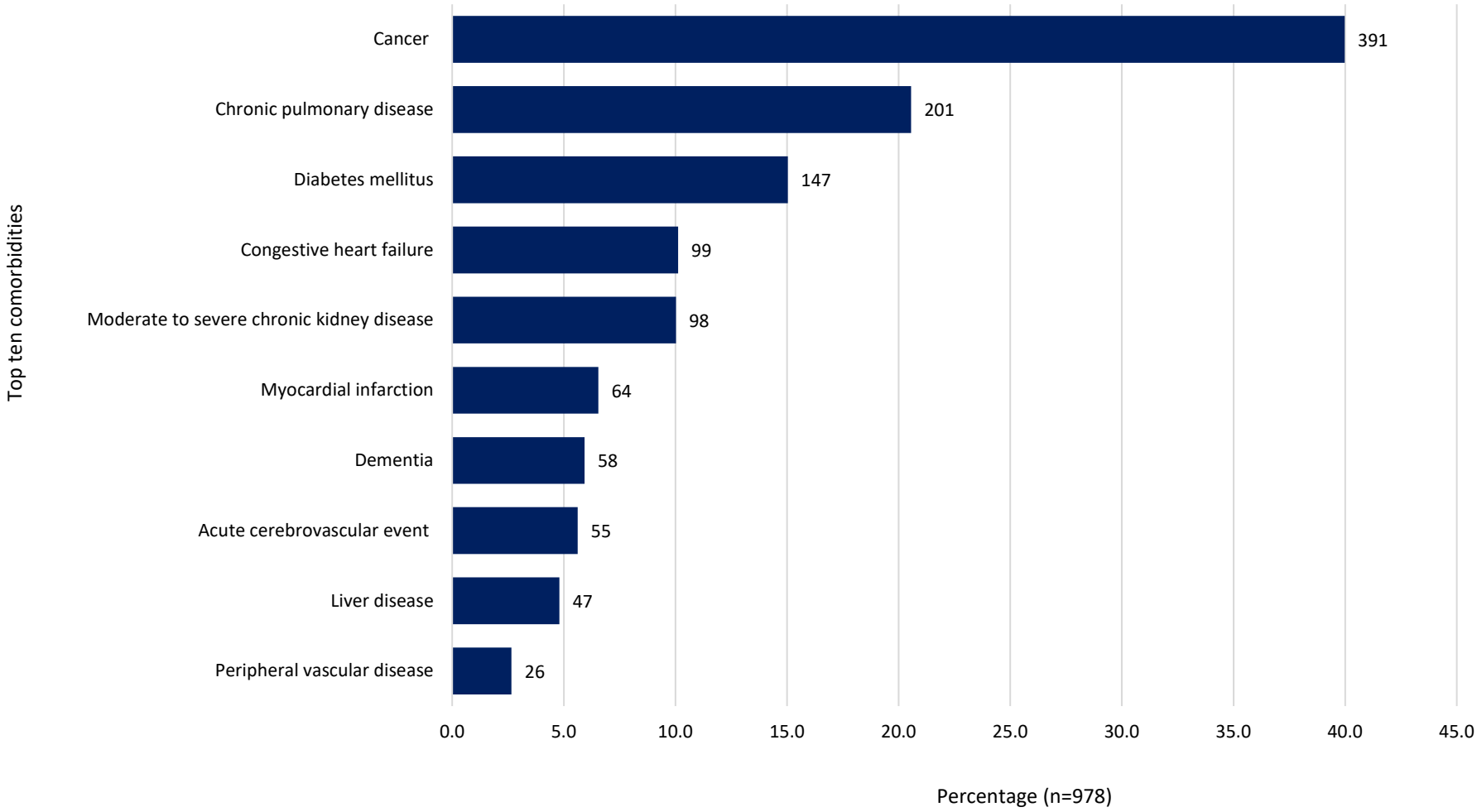


F2.7 Age distribution of patients with effusion, pneumothorax and infection

Clinician questionnaire data; n=978

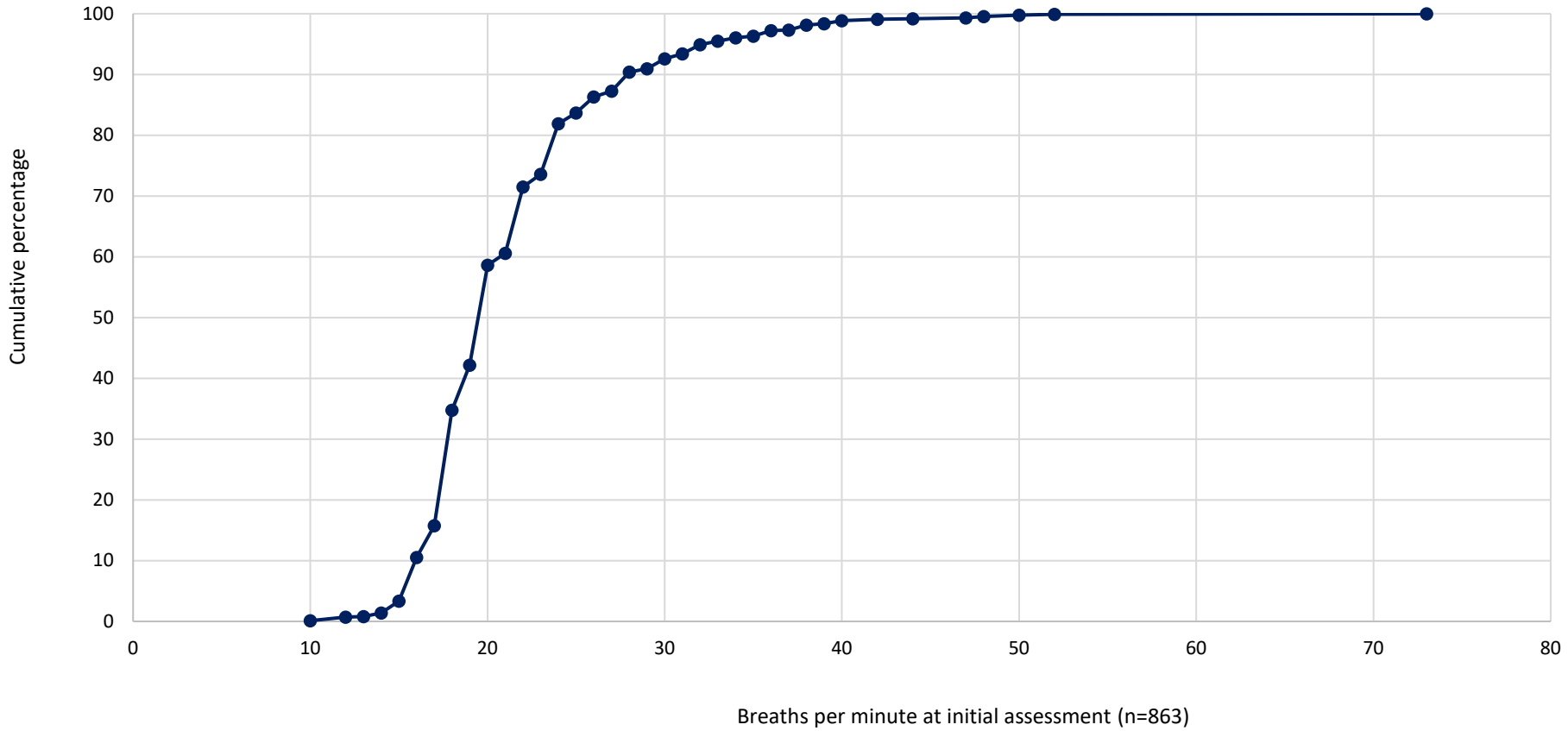
T2.1 Ethnicity of the study population	Number of patients	%	2021 census data
White British/White-other	750	90.0	81.7
Asian/Asian British (Indian, Pakistani, Bangladeshi, Chinese, other Asian)	47	5.6	9.3
Black/African/Caribbean/Black British	21	2.5	4.0
Mixed/Multiple ethnic groups	3	0.4	2.9
Other ethnic group	12	1.4	2.2
Subtotal	**833**		
Unknown	145		
Total	**978**		

Clinician questionnaire data



F2.8 Most common comorbidities

Clinician questionnaire data; n=978 (answers may be multiple)

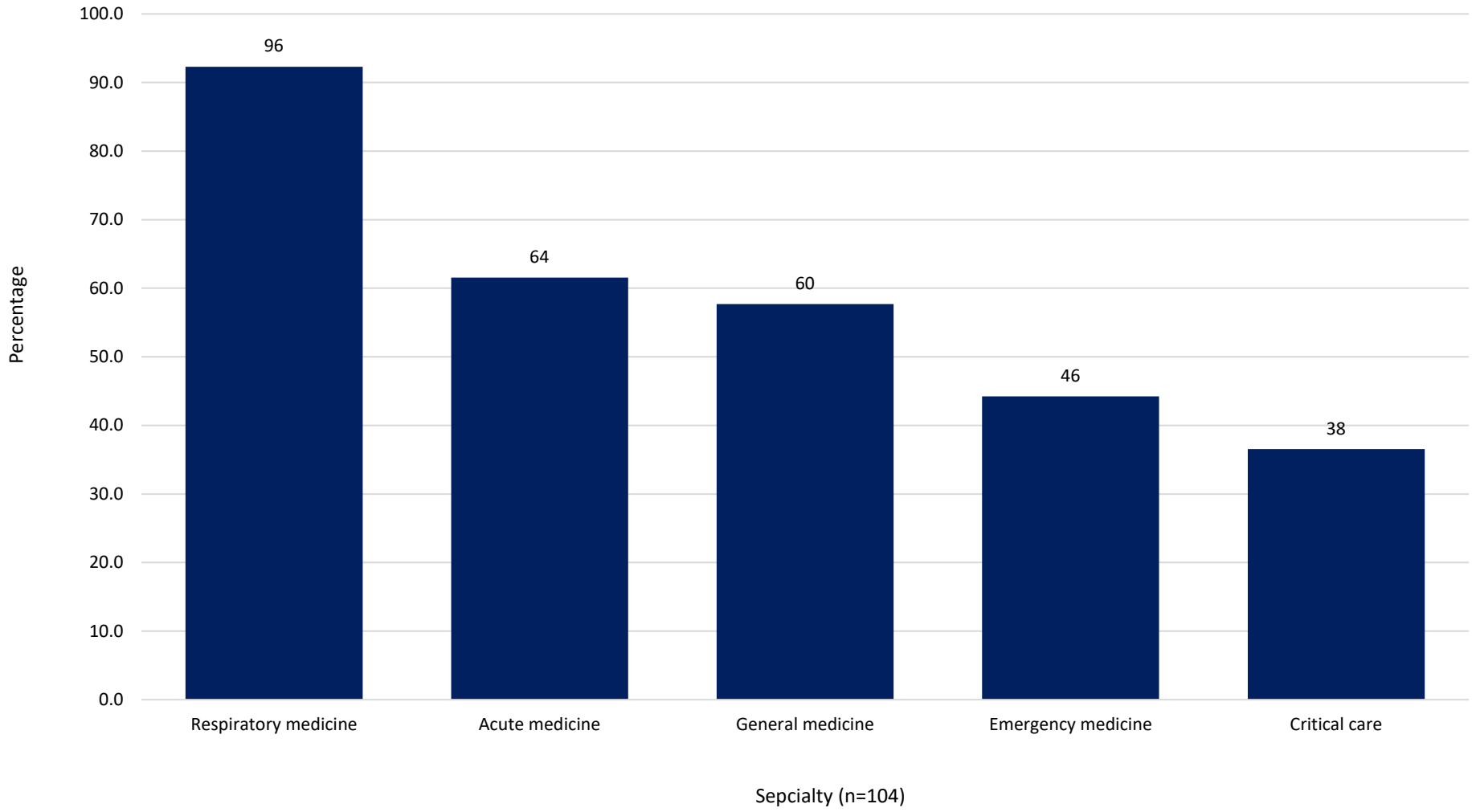


F2.9 Number of breaths per minute at the initial assessment

Clinician questionnaire data; n=863

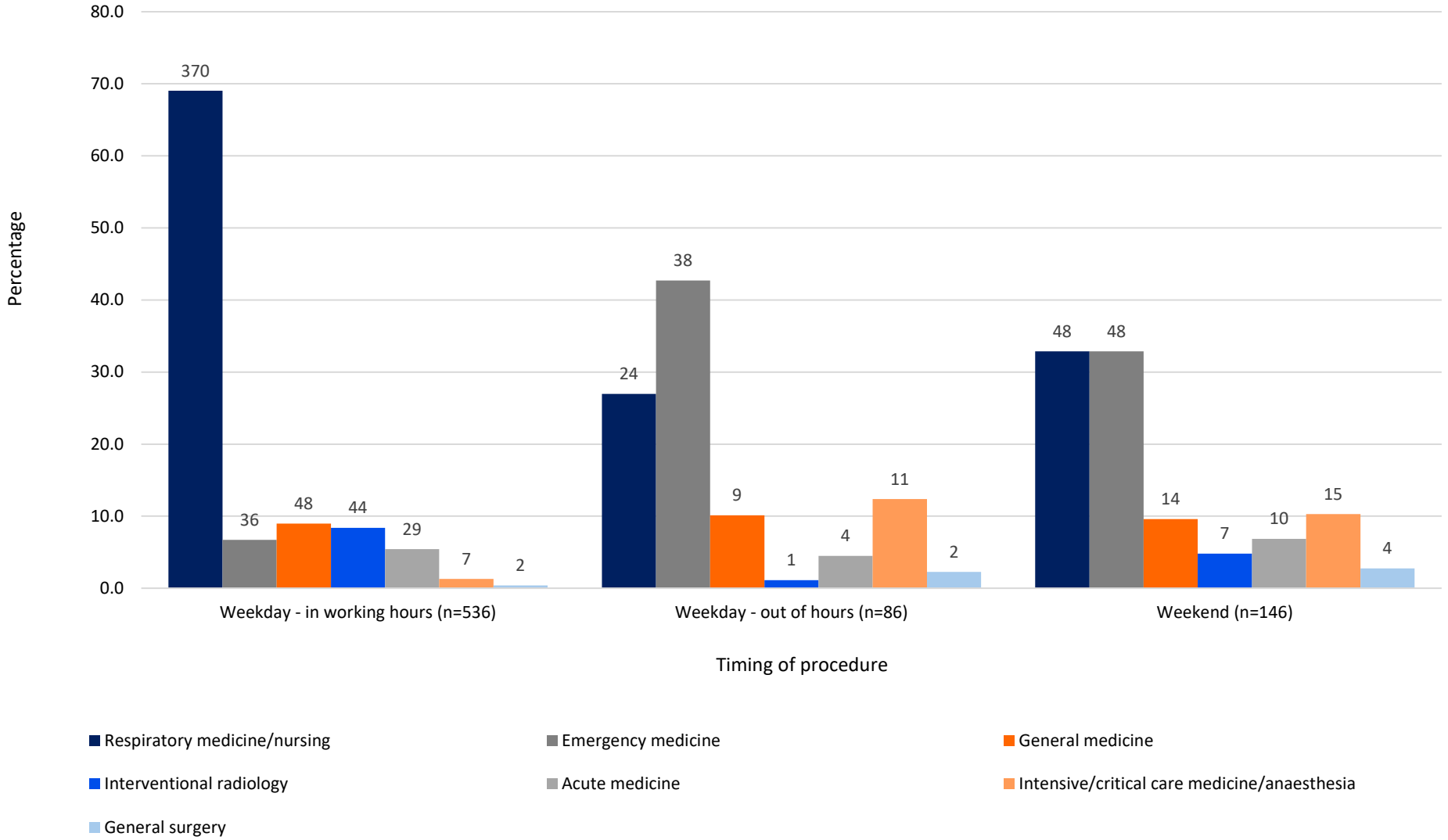
T3.1 Chest drain experience and confidence of doctors in different specialties		
Specialty	**Experience in last year (%)**	**Confident to perform unsupervised (%)**
Respiratory medicine	63/64 (98.4)	58/64 (90.6)
Emergency medicine	63/83 (75.9)	61/83 (73.5)
Intensive care medicine	85/159 (53.5)	97/159 (61.0)
General medicine	121/391 (30.9)	44/391 (11.3)

Clinician survey data; n=697



F3.1 Number of hospitals providing training in pleural procedures for different specialties

Organisational data; n=104 (answers may be multiple)

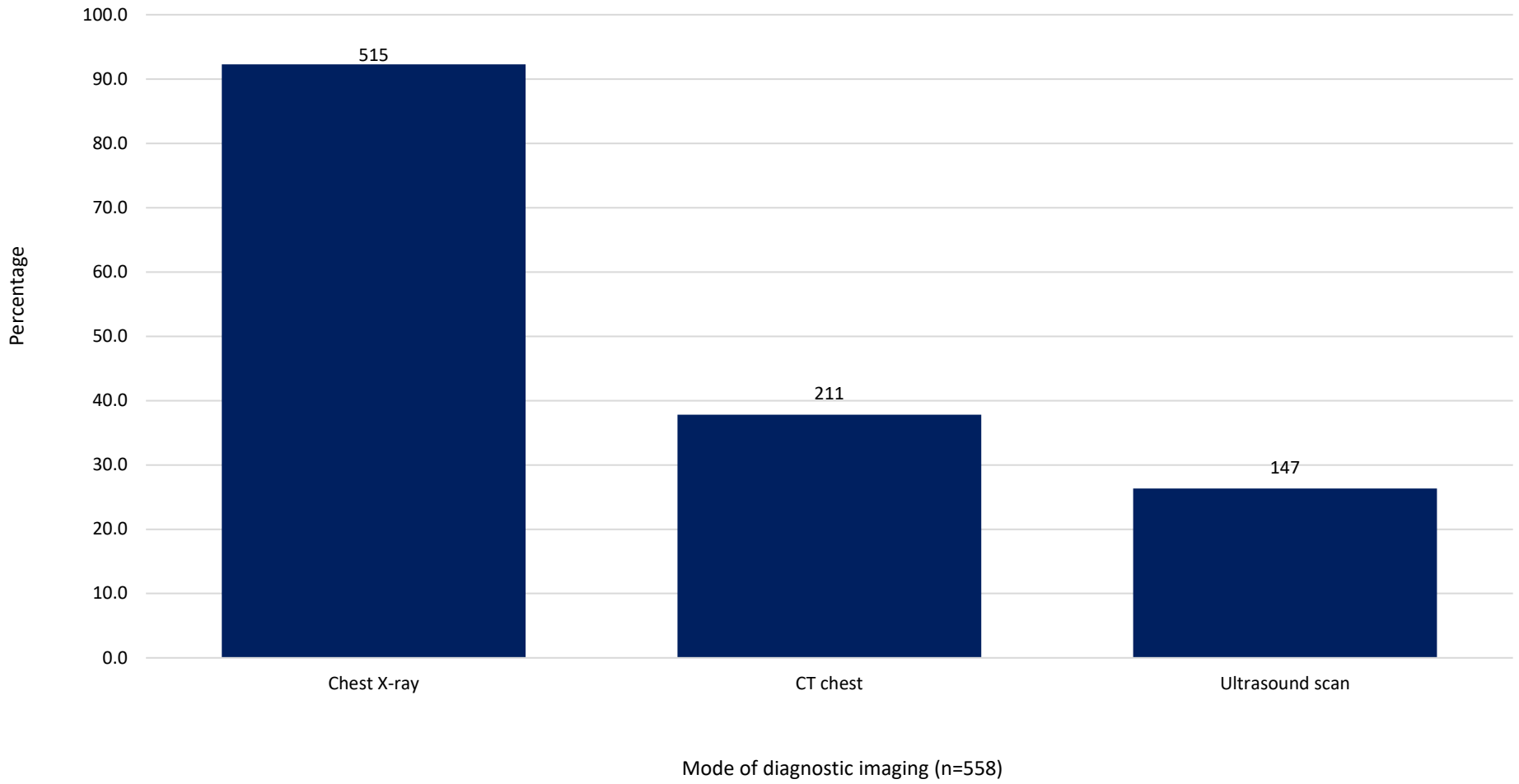


F3.2 The specialty of the operator at different times/locations

Clinician questionnaire data; *n=768*

T4.1 Route of admission	Number of patients	%
Via the emergency department	739	77.5
Referral from attendance at outpatient clinic	73	7.7
Referral from primary care	58	6.1
Hospital transfer	42	4.4
Other	42	4.4
Subtotal	**954**	
Unknown	24	
Total	**978**	

Clinician questionnaire data

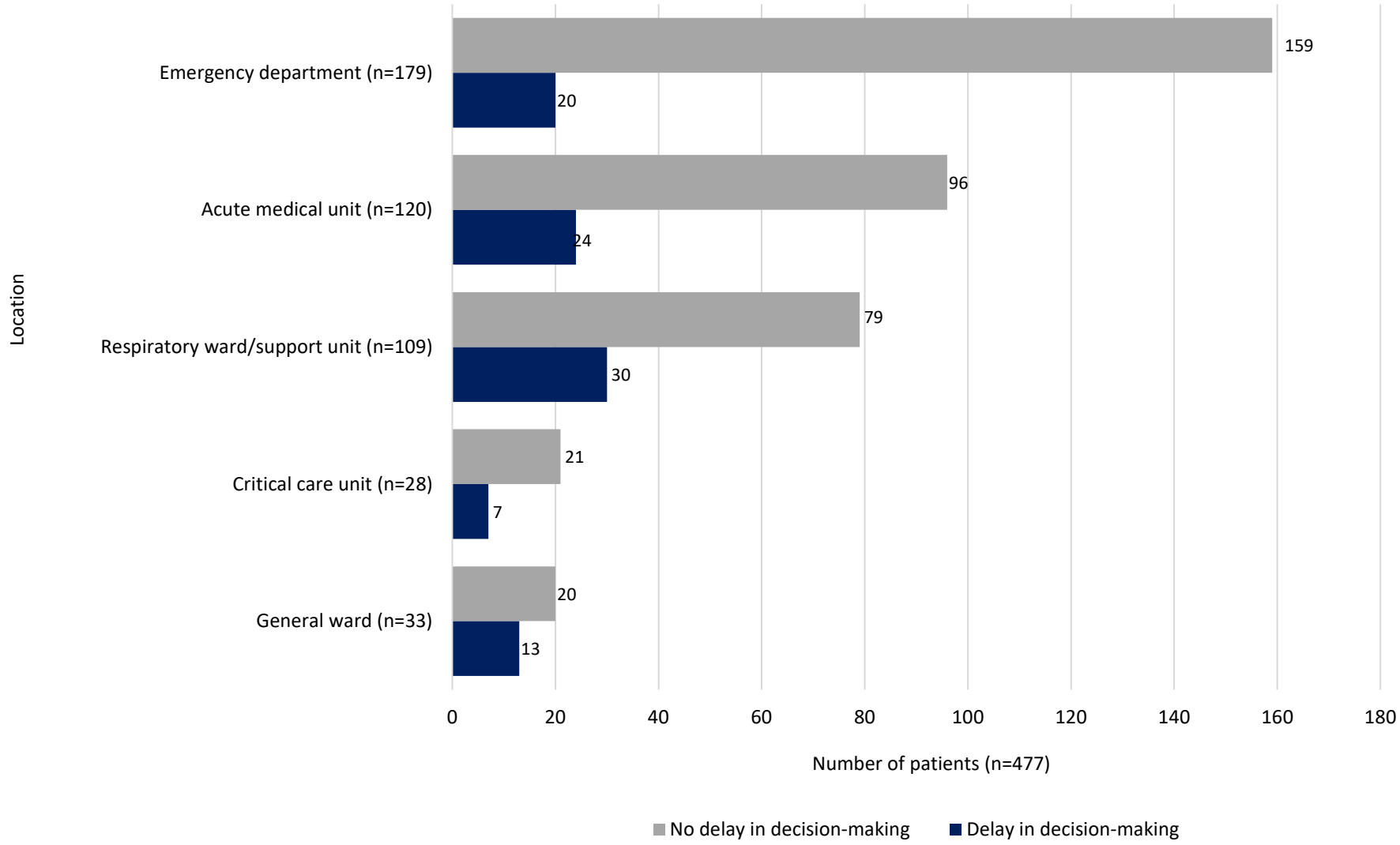


F4.1 Imaging performed prior to the procedure

Case review data; *n=558*

T4.2 Location of the patient when the decision made that pleural procedure was required	Number of patients	%
Emergency department	300	30.7
Respiratory ward	231	23.6
Acute medical unit	178	18.2
General ward	63	6.4
Critical care unit	51	5.2
Respiratory support unit	14	1.4
Outpatient department	11	1.1
Other (specified)	130	13.3
Total	**978**	

Clinician questionnaire data

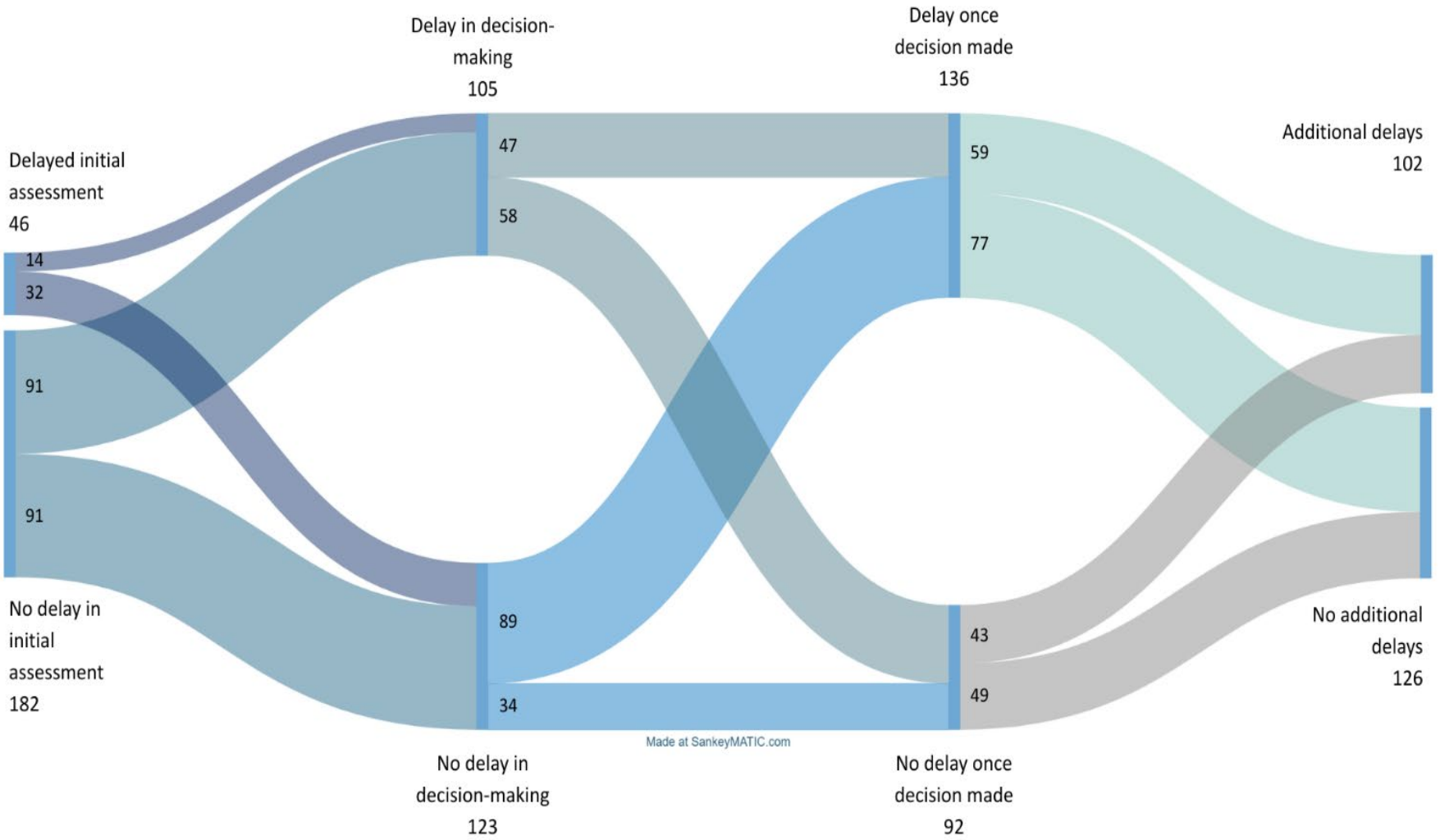


F4.2 Location of decision and delay in decision making

Case review data; n=477

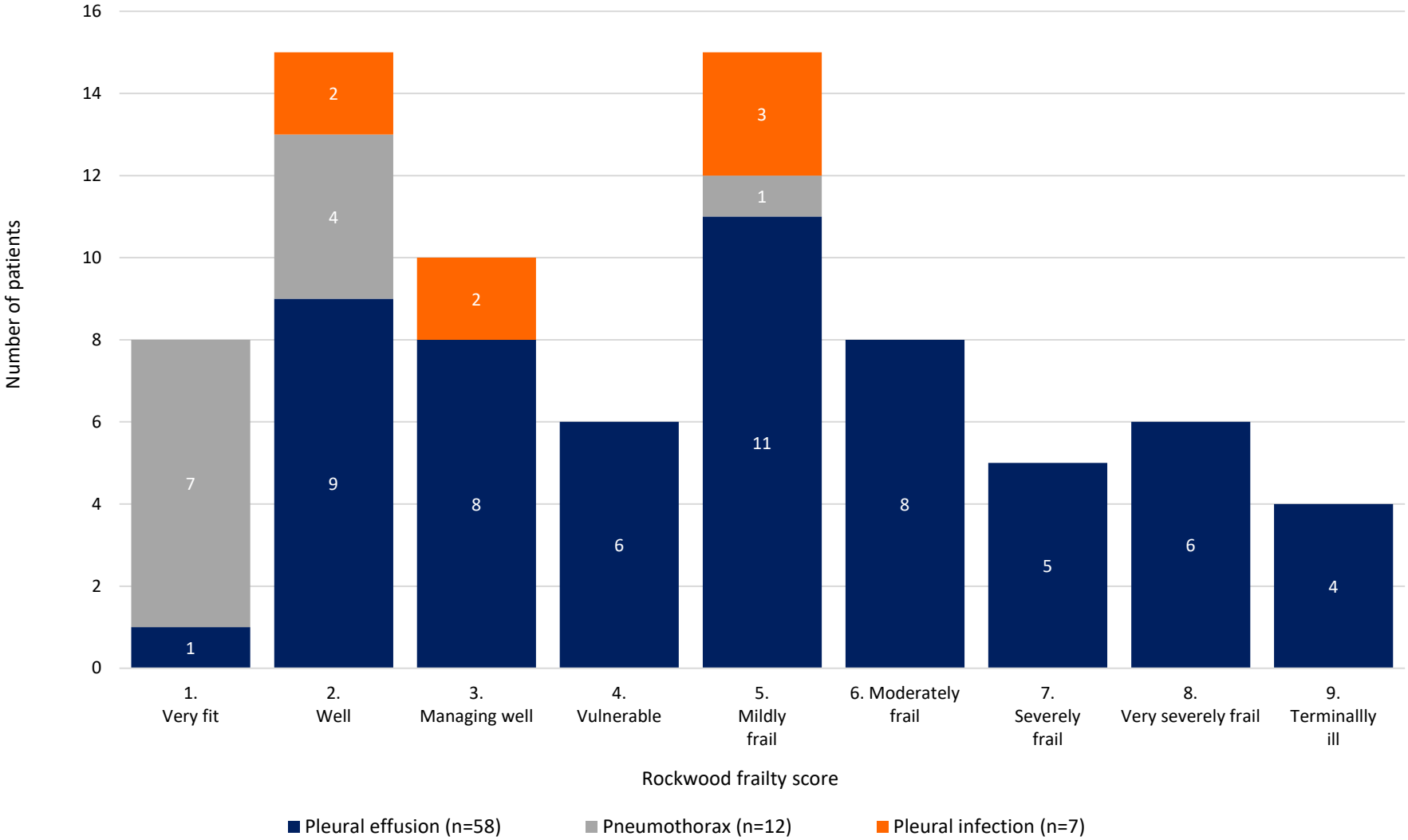
T4.3 Additive and multiple delays in the pathway	Number of patients
Delayed initial assessment	46
Additional patients who experienced delay in decision making	90
Additional patients who experienced delay once decision made	81
Additional patients who experienced delay in their pleural procedure (not elsewhere specified)	11
Total number of patients experiencing delay in the pathway	**228**
No delay/unknown	335
Total	**563**

Case review data



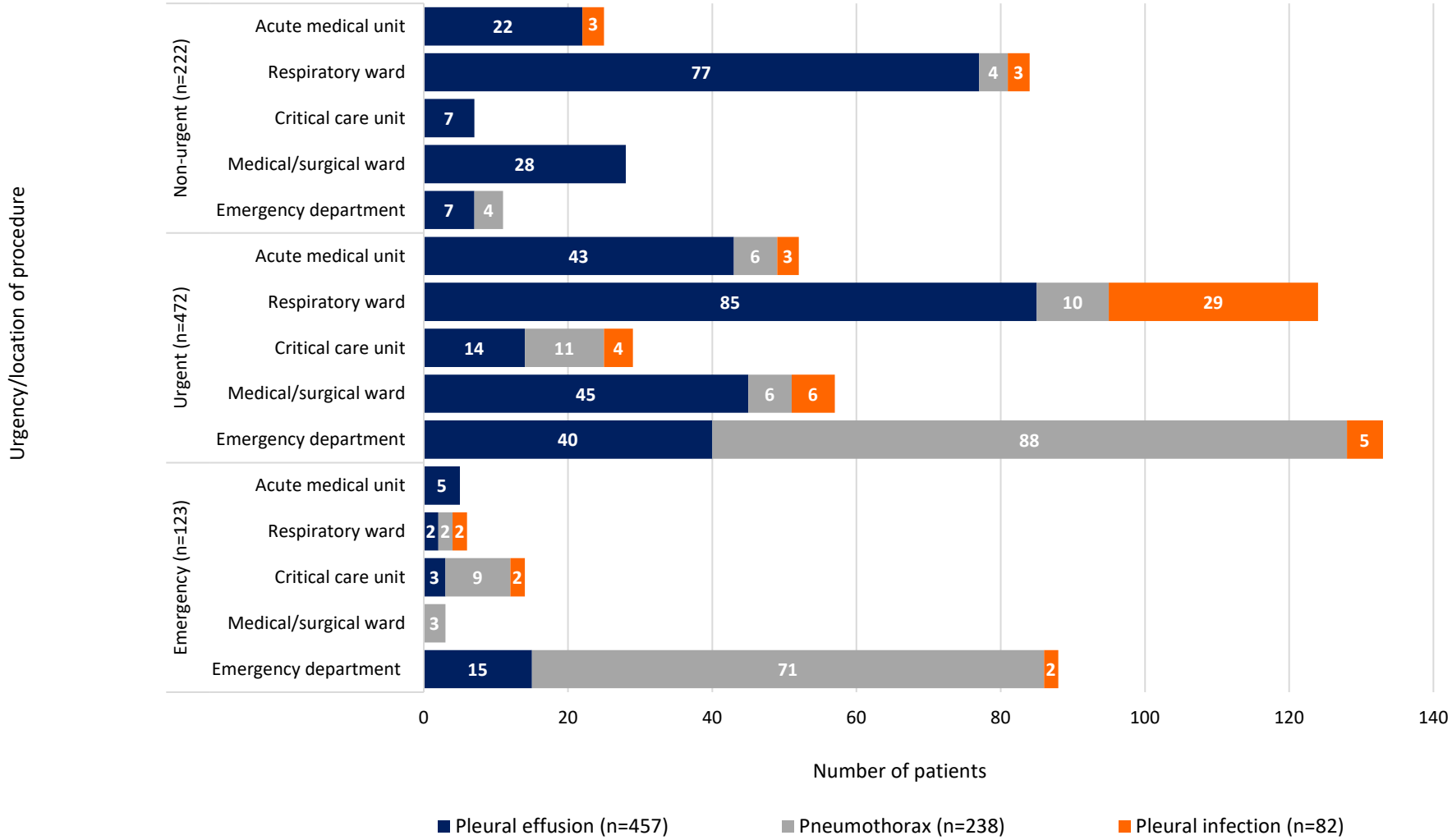
F4.3 Patients experiencing delays

Case review data; n=228



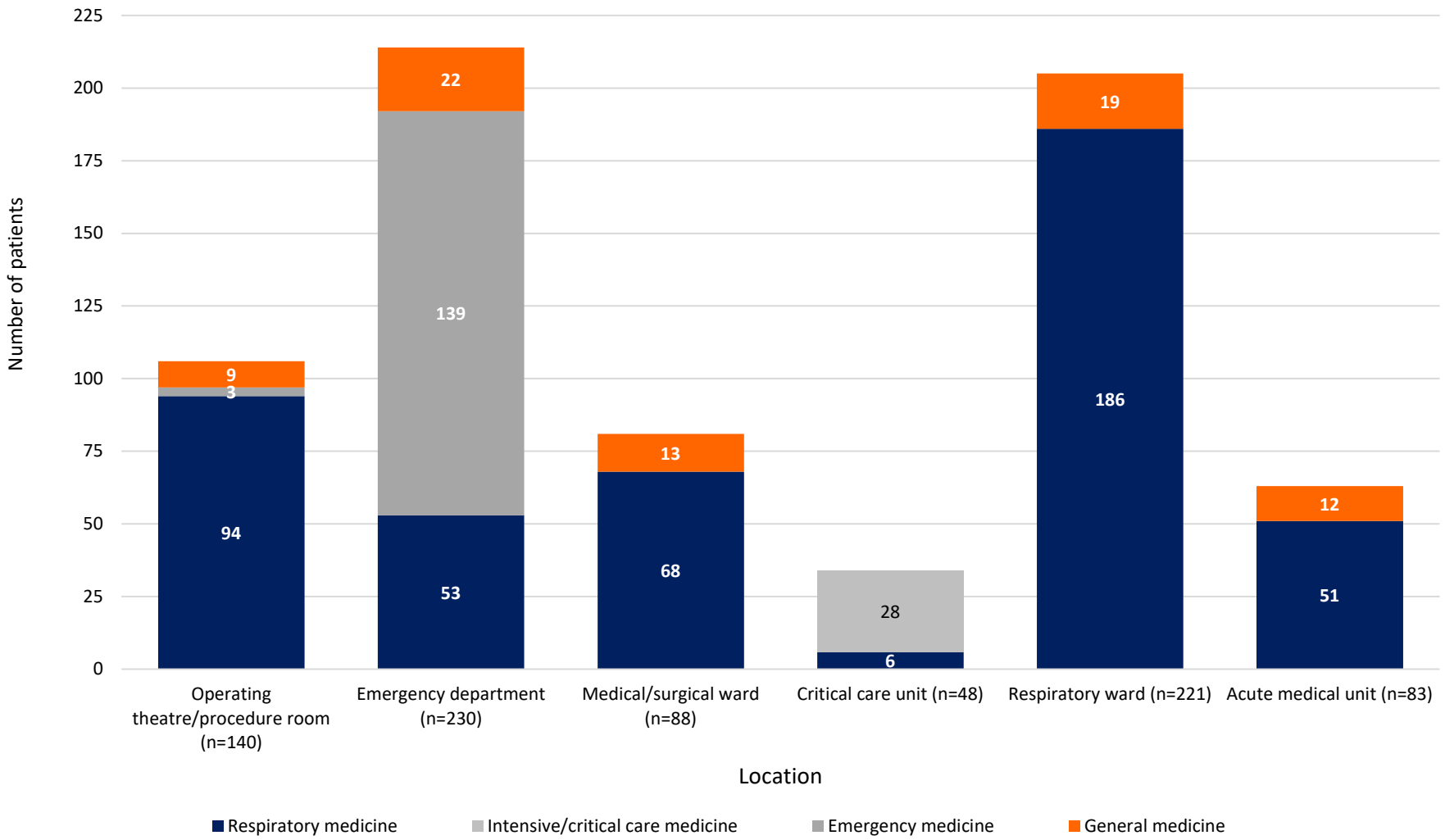
F4.4 Rockwood frailty score of patients believed by the reviewers to have had an inappropriately invasive procedure or indication

Case review data; n=77



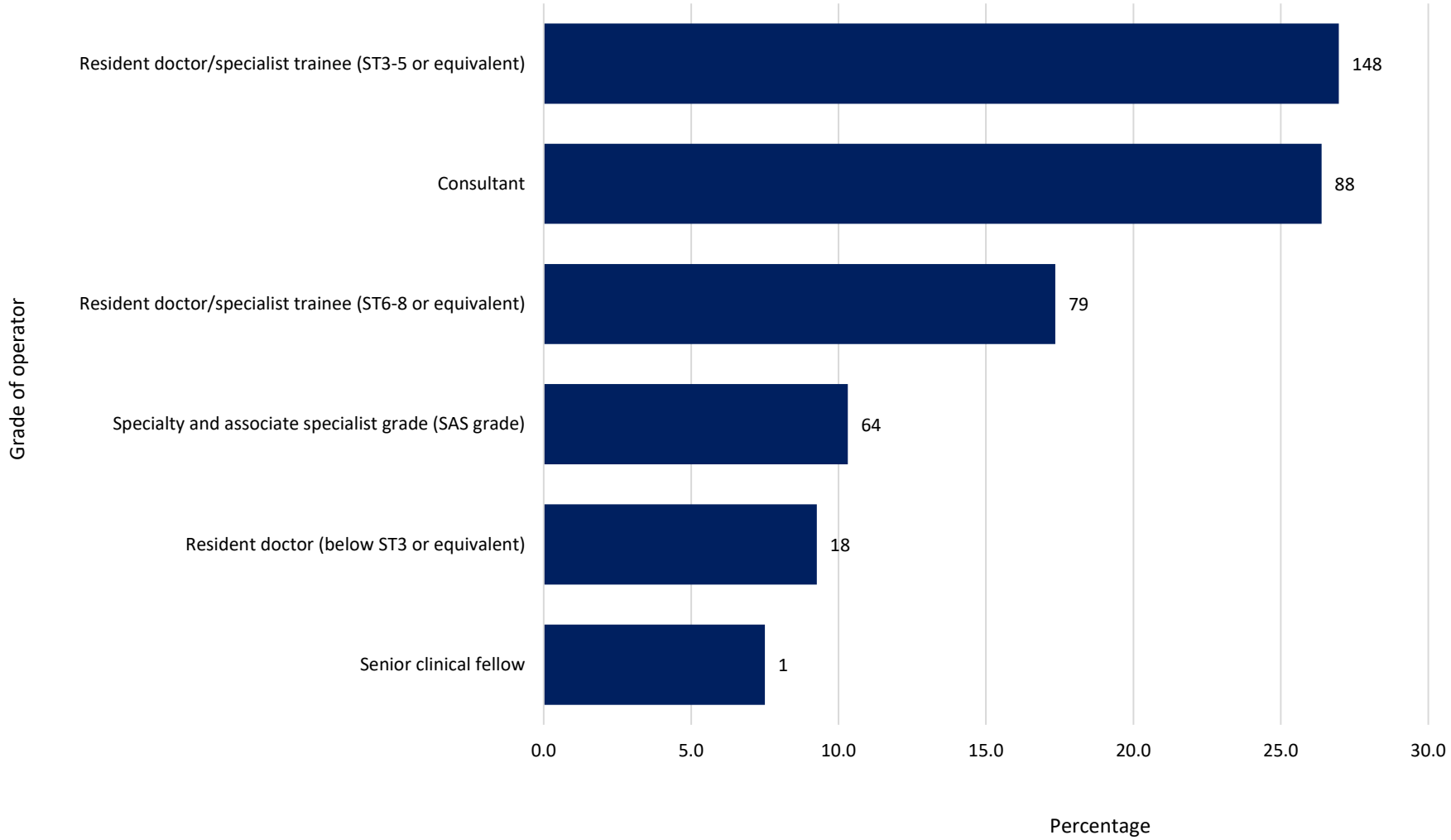
F5.1 Indication for pleural procedure and urgency and location of procedure

Clinician questionnaire data



F5.2 Location of procedure and specialty of operator

Clinician questionnaire data



F5.3 Grade of operator

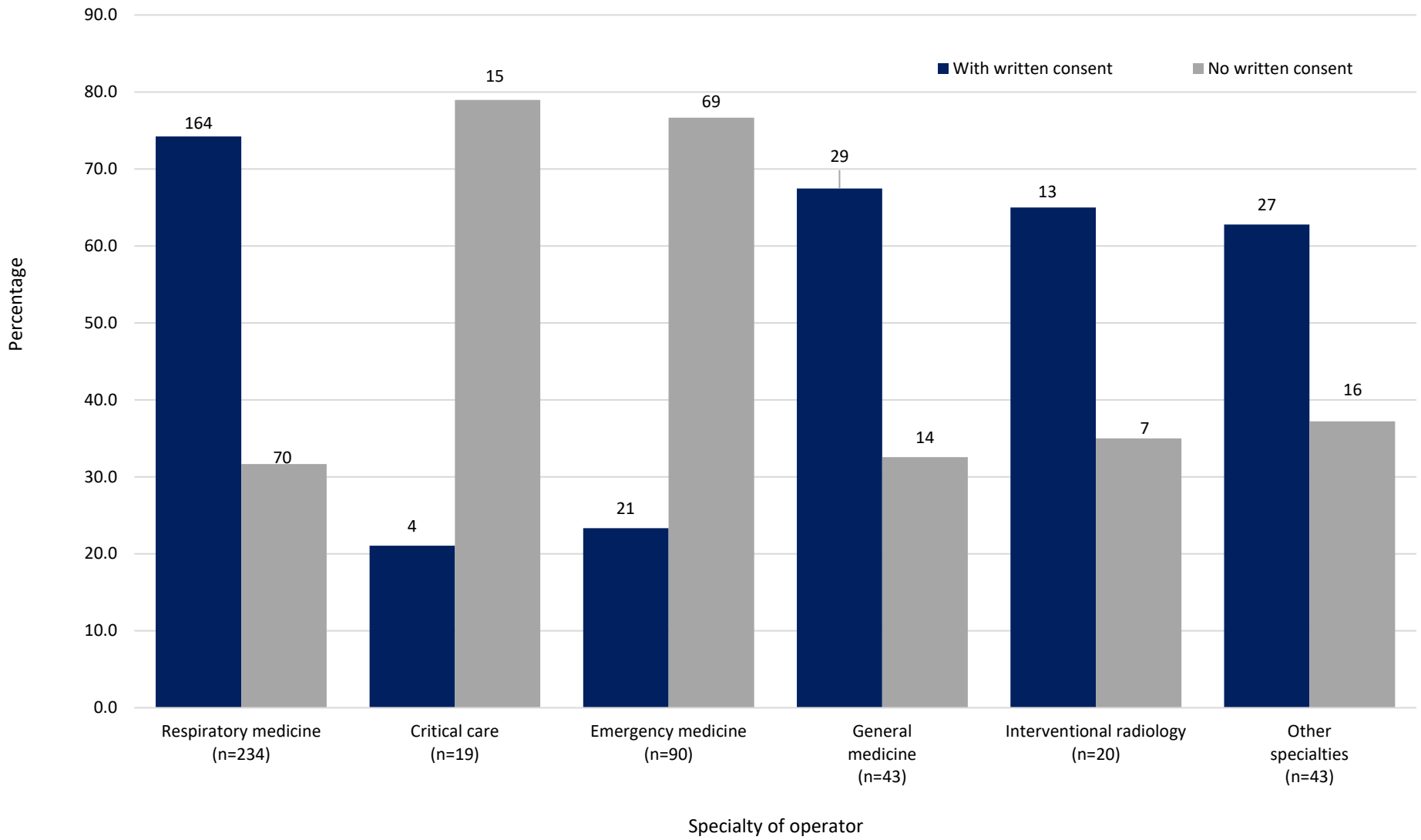
Clinician questionnaire data; n=853

T5.1 How consent was taken	Number of patients	%
Written	314	55.8
Form 4/'Lacks capacity'	131	23.3
Verbal – documented in notes	88	15.6
Not documented	30	5.3
Total	**563**	

Case review data

T5.2 How consent for pleural procedures was recorded	Number of hospitals	%
Via the completion of standard surgical/procedure consent form	121	69.9
Via completion of a 'Best Interest' form/'Form 4'	79	45.7
Via completion of a specific pleural procedures consent form	68	39.3
Verbally and recorded in the notes	64	36.9
Other	15	8.6
Unknown	9	5.4

Organisational data. Answers may be multiple; n=173

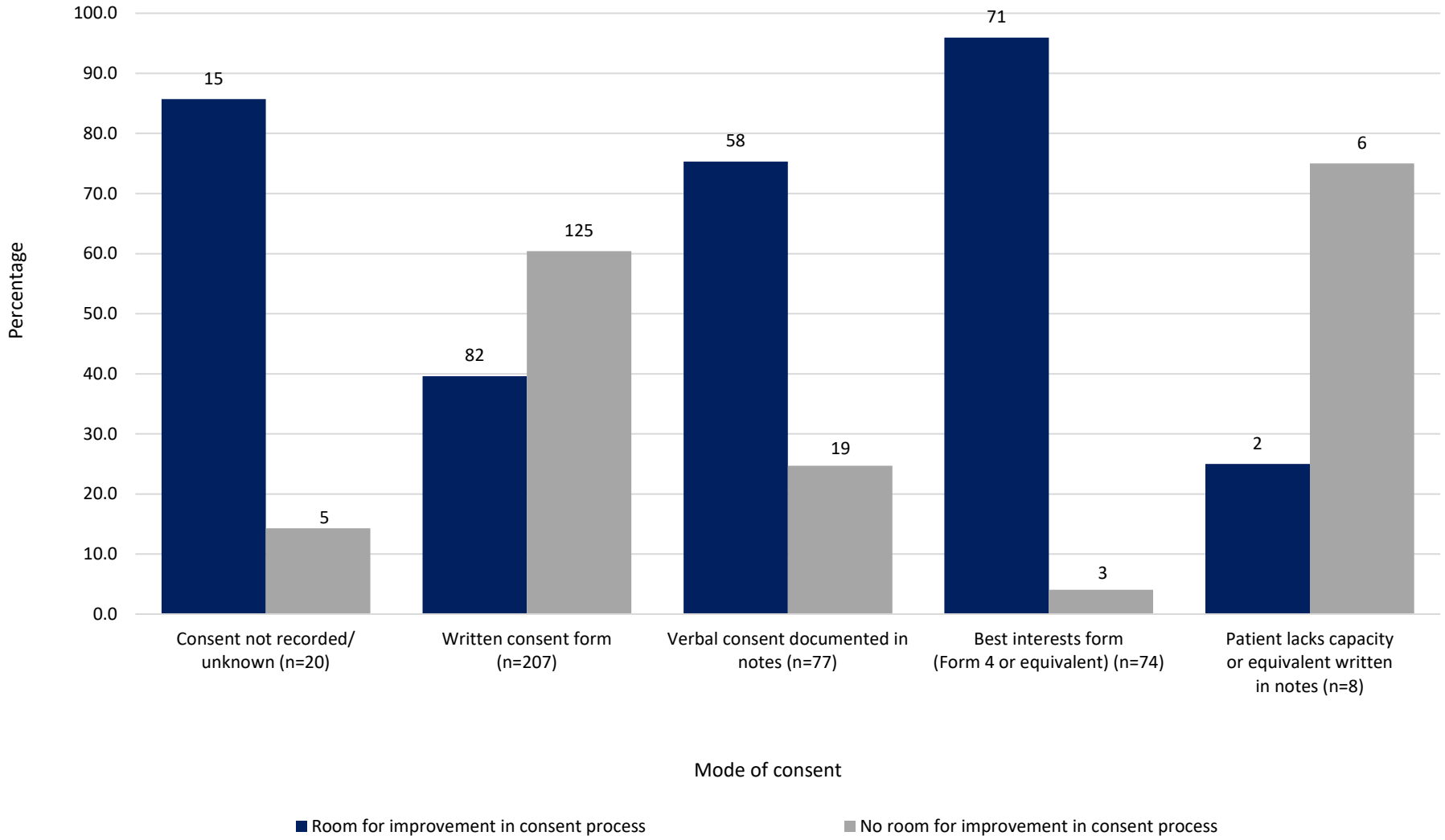


F5.4 The proportion of patients with written consent in different locations where the pleural procedure was performed

Case review data; n=563

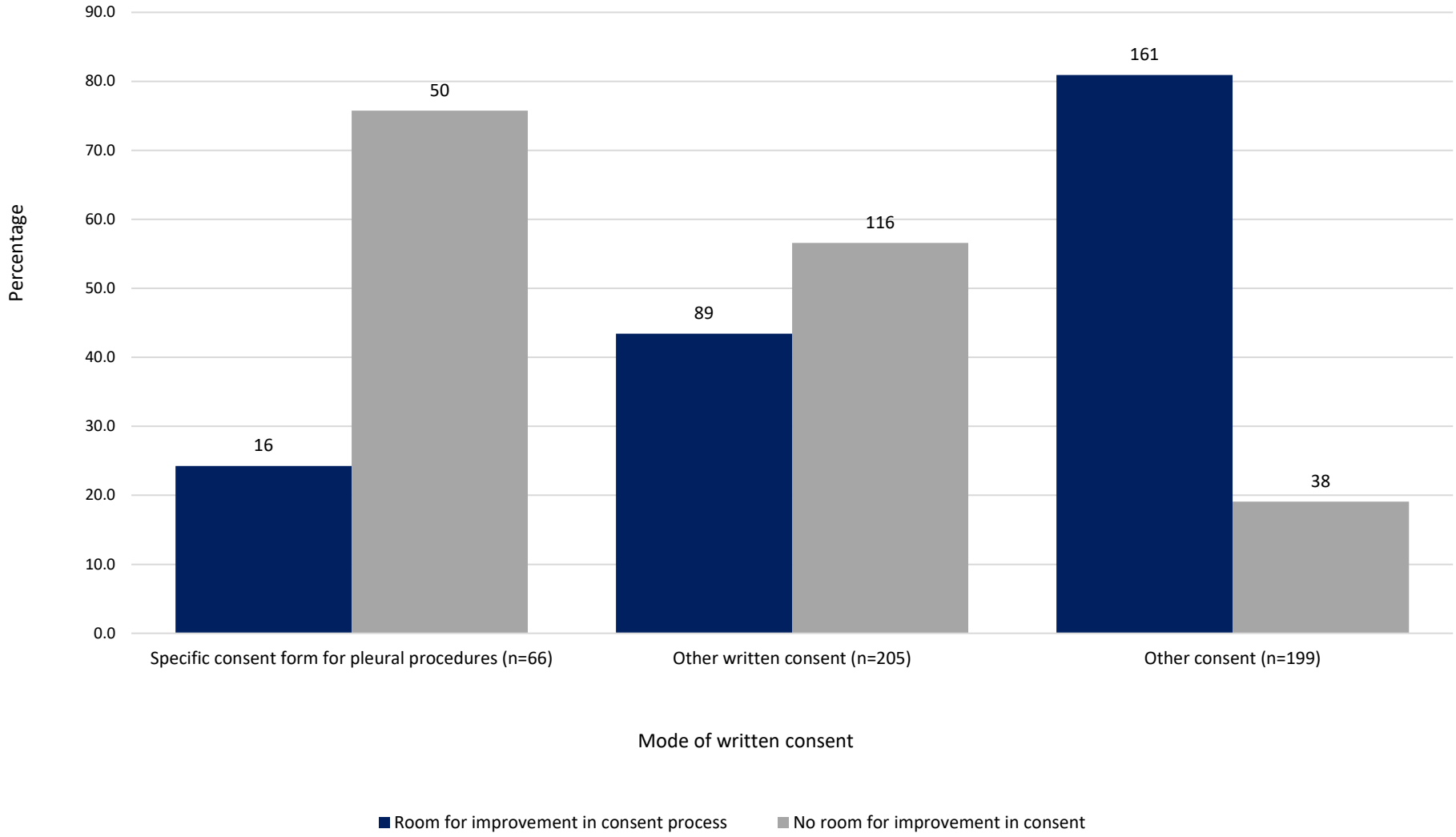
T5.3 Reviewer was of the opinion that the consent process could have been improved	Number of patients	%
Yes	278	57.6
No	205	42.4
Subtotal	**483**	
Unknown	80	
Total	**563**	

Case review data



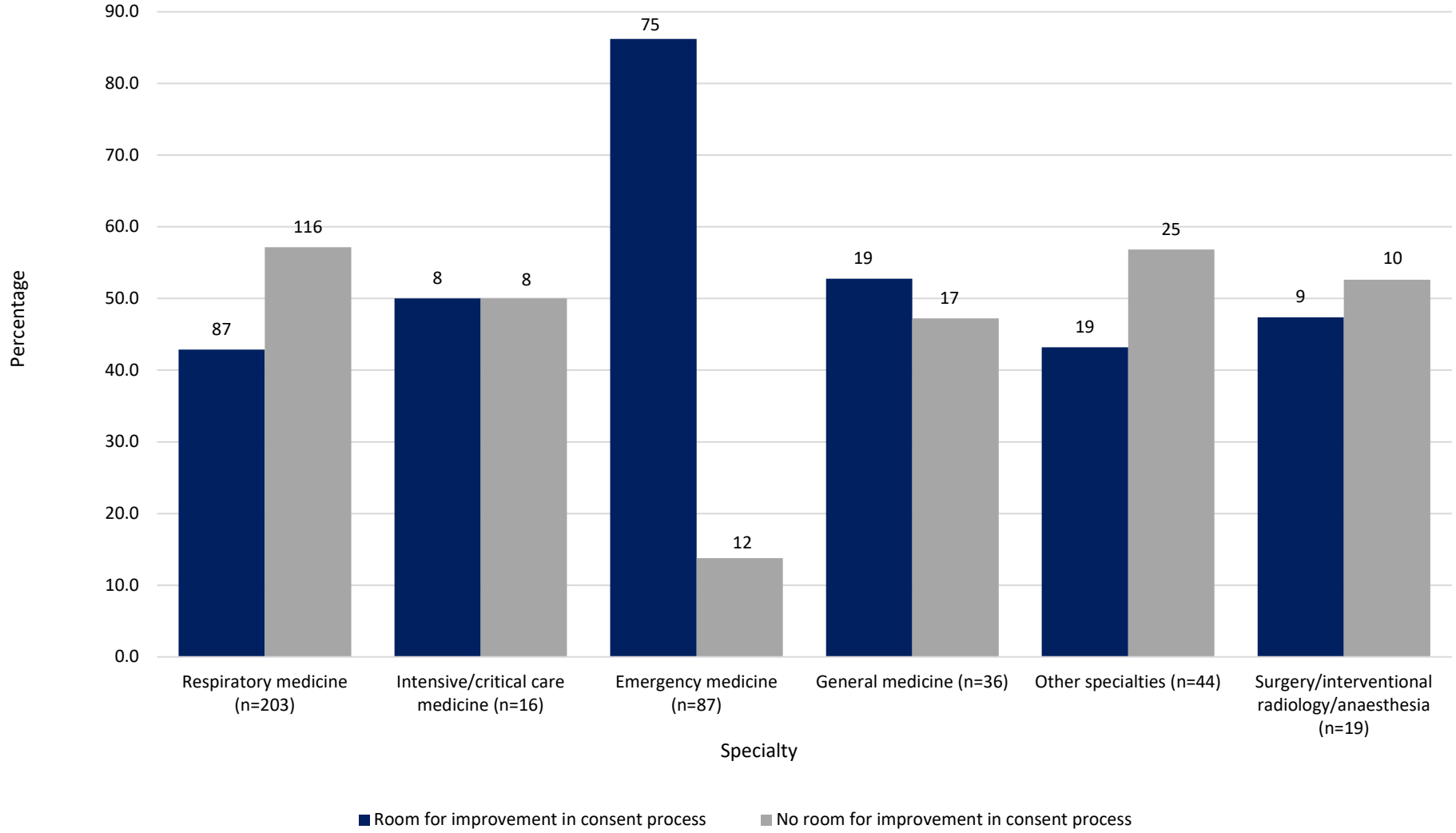
F5.5 Room for improvement in the consent process and the mode of consent taking

Case review data



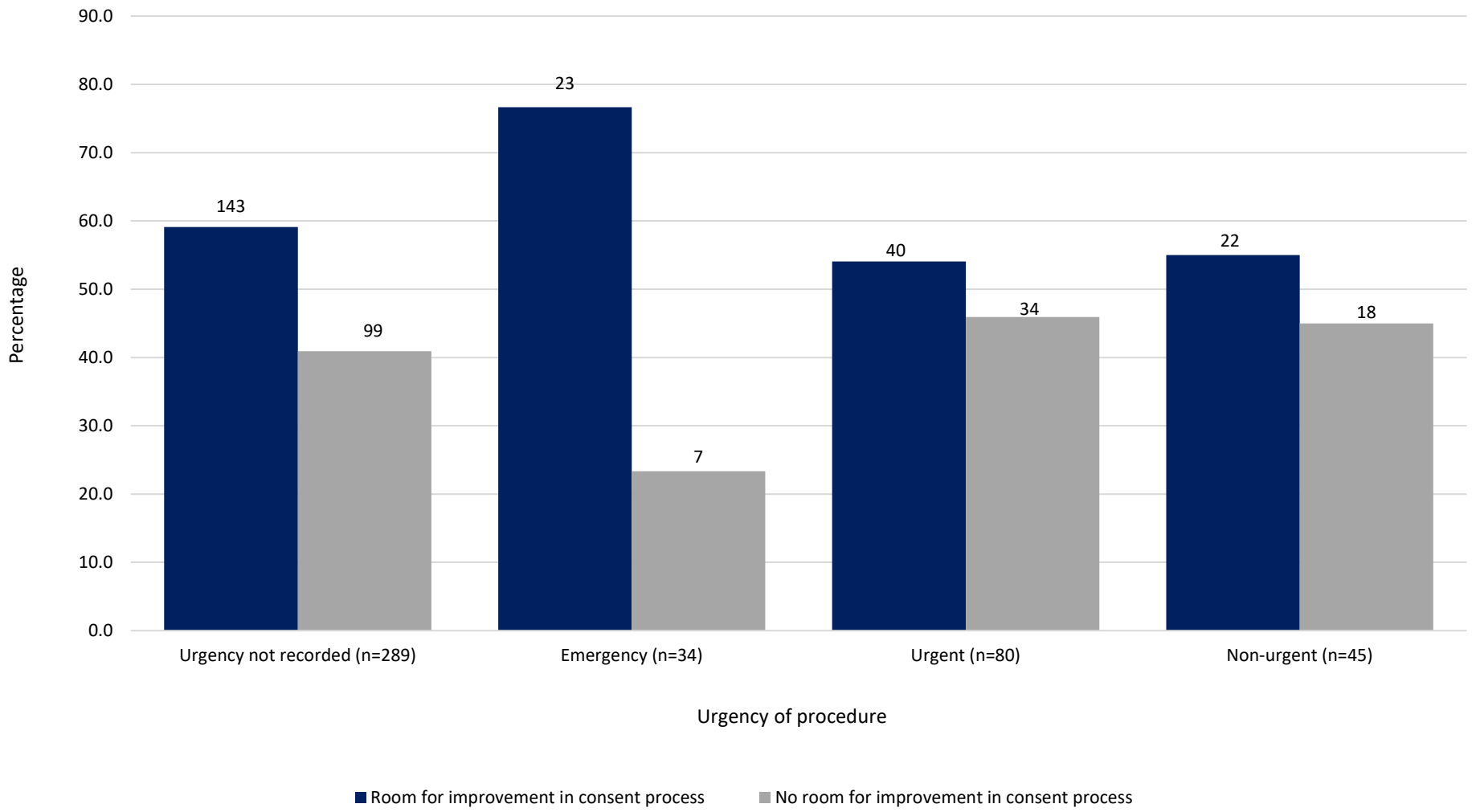
F5.6 Use of pleural-procedure-specific consent form vs room for improvement in the consent process

Case review data



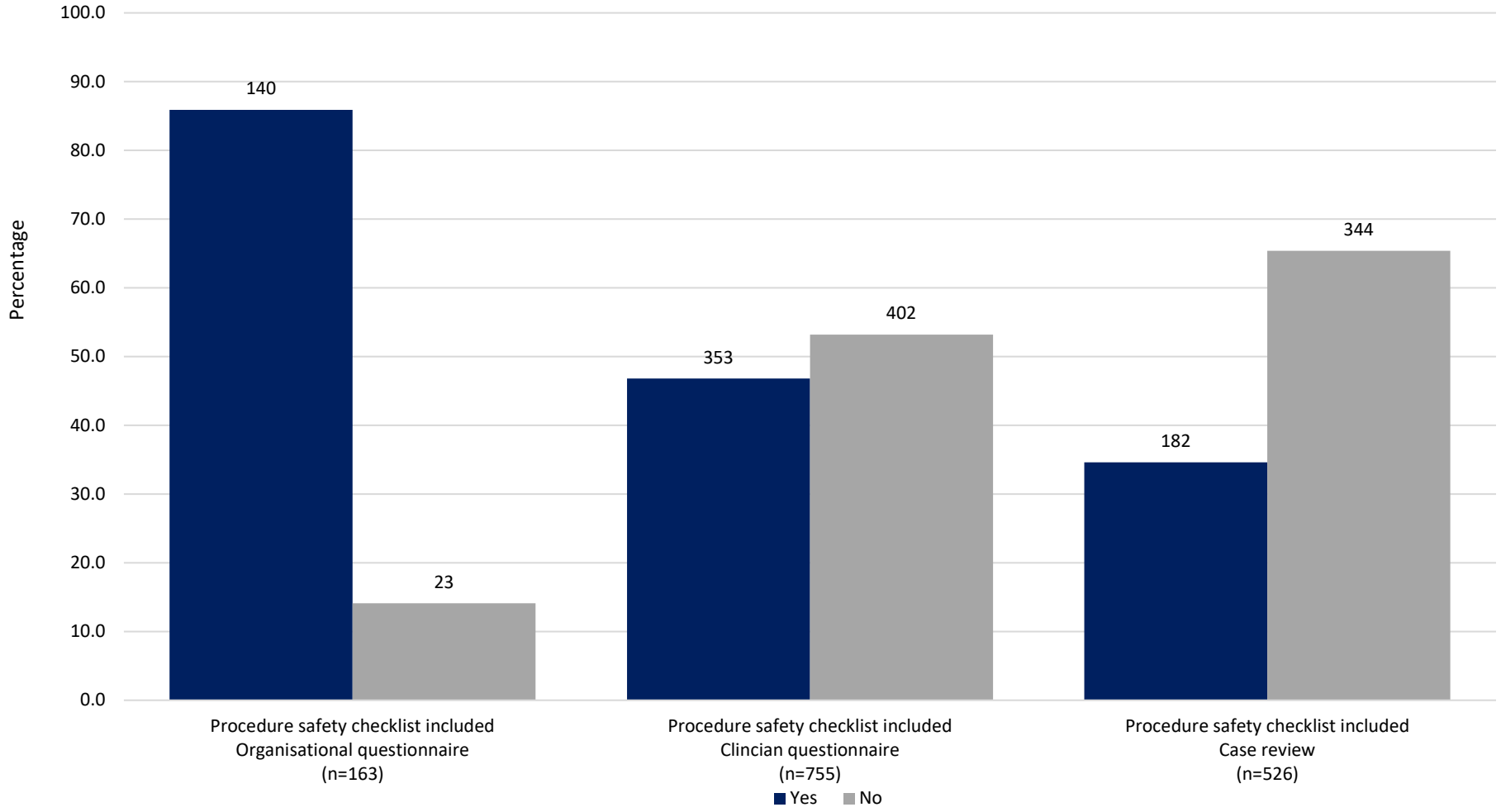
F5.7 Specialty of operator and room for improvement in consent

Case review data



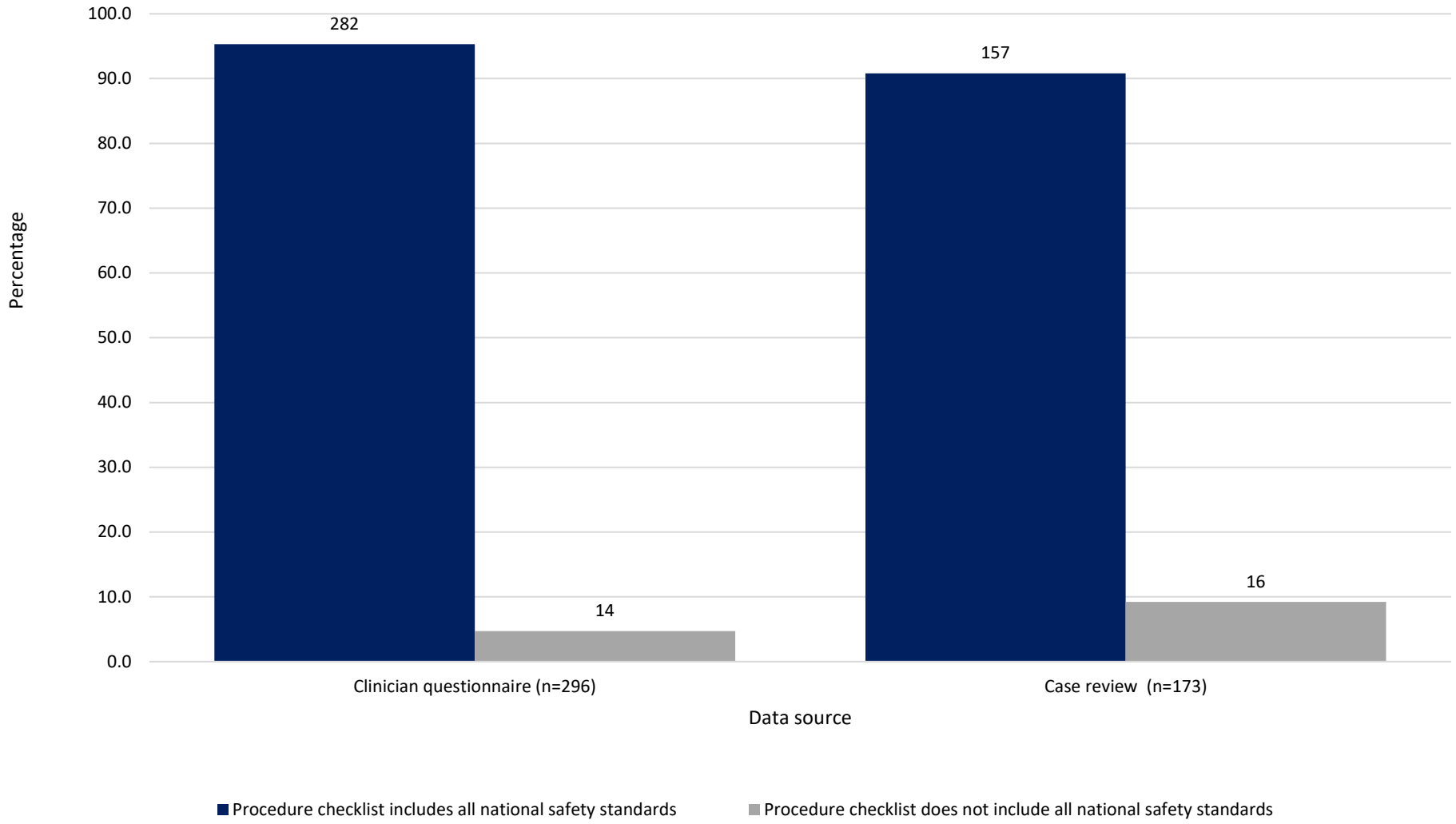
F5.8 Room for improvement in consent associated with the urgency of the procedure

Case review data



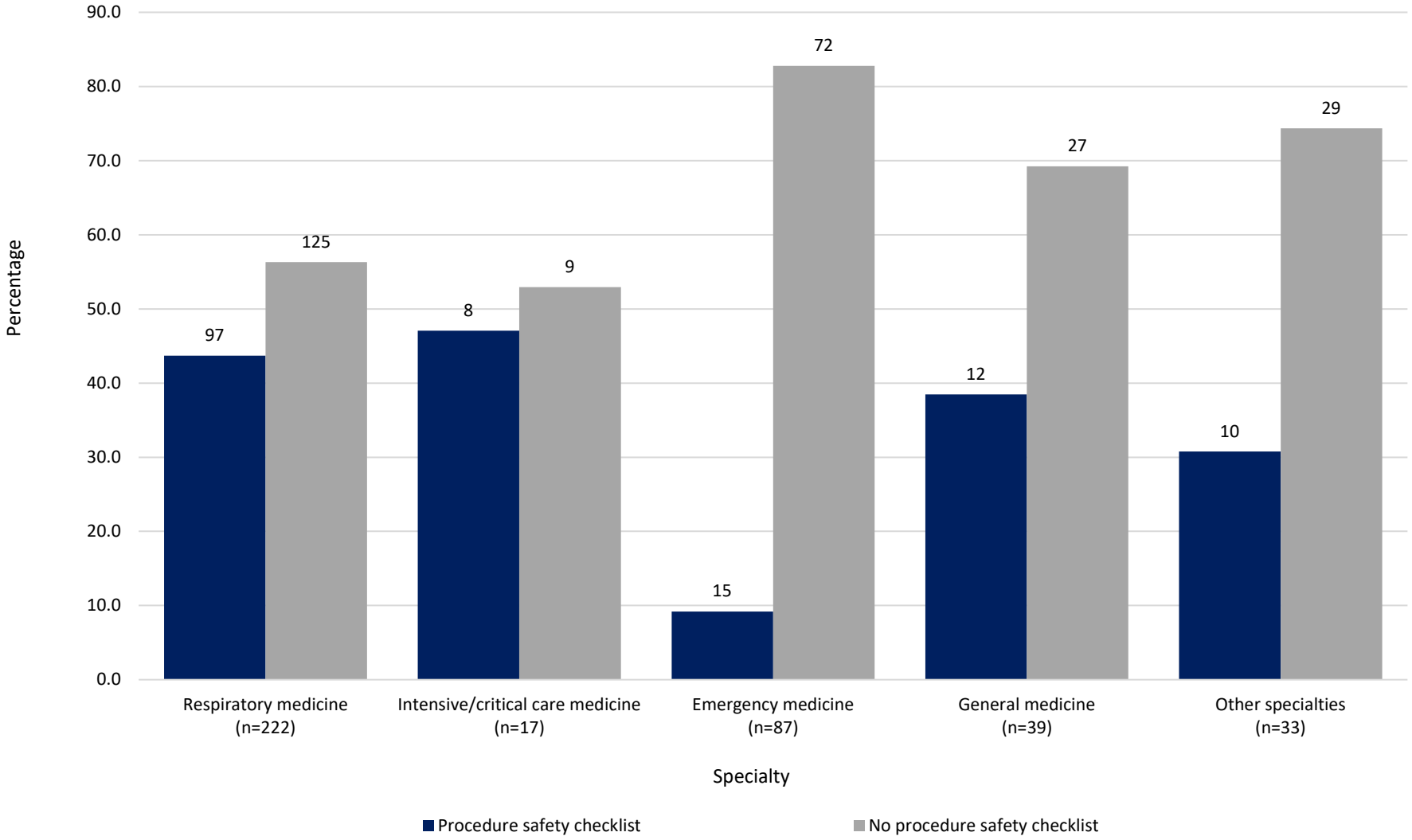
F5.9 Inclusion of a procedure safety checklist

Organisational questionnaire, clinician questionnaire and case review data



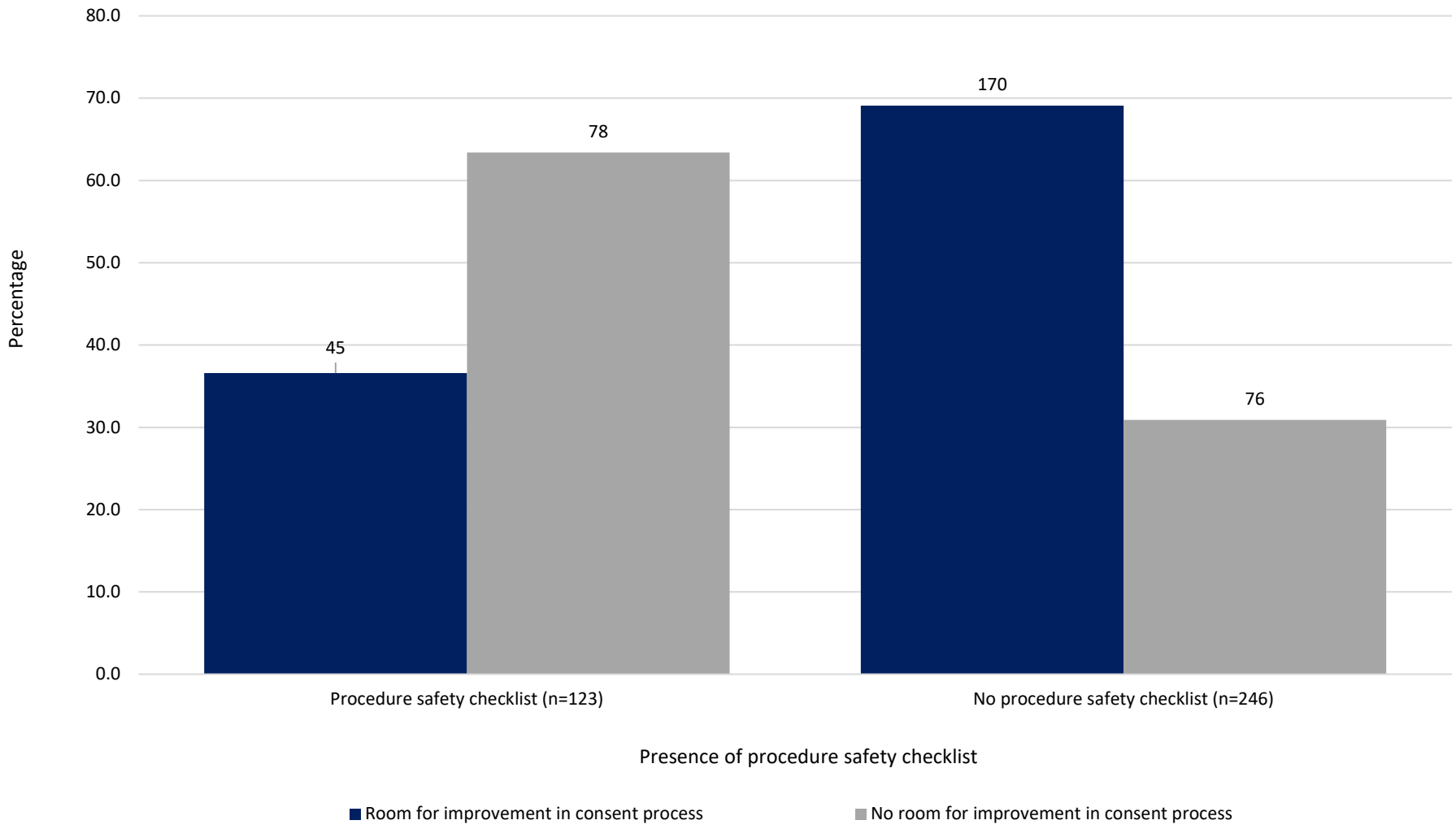
F5.10 Inclusion of all national safety standards in LocSSIPs

Clinician questionnaire data



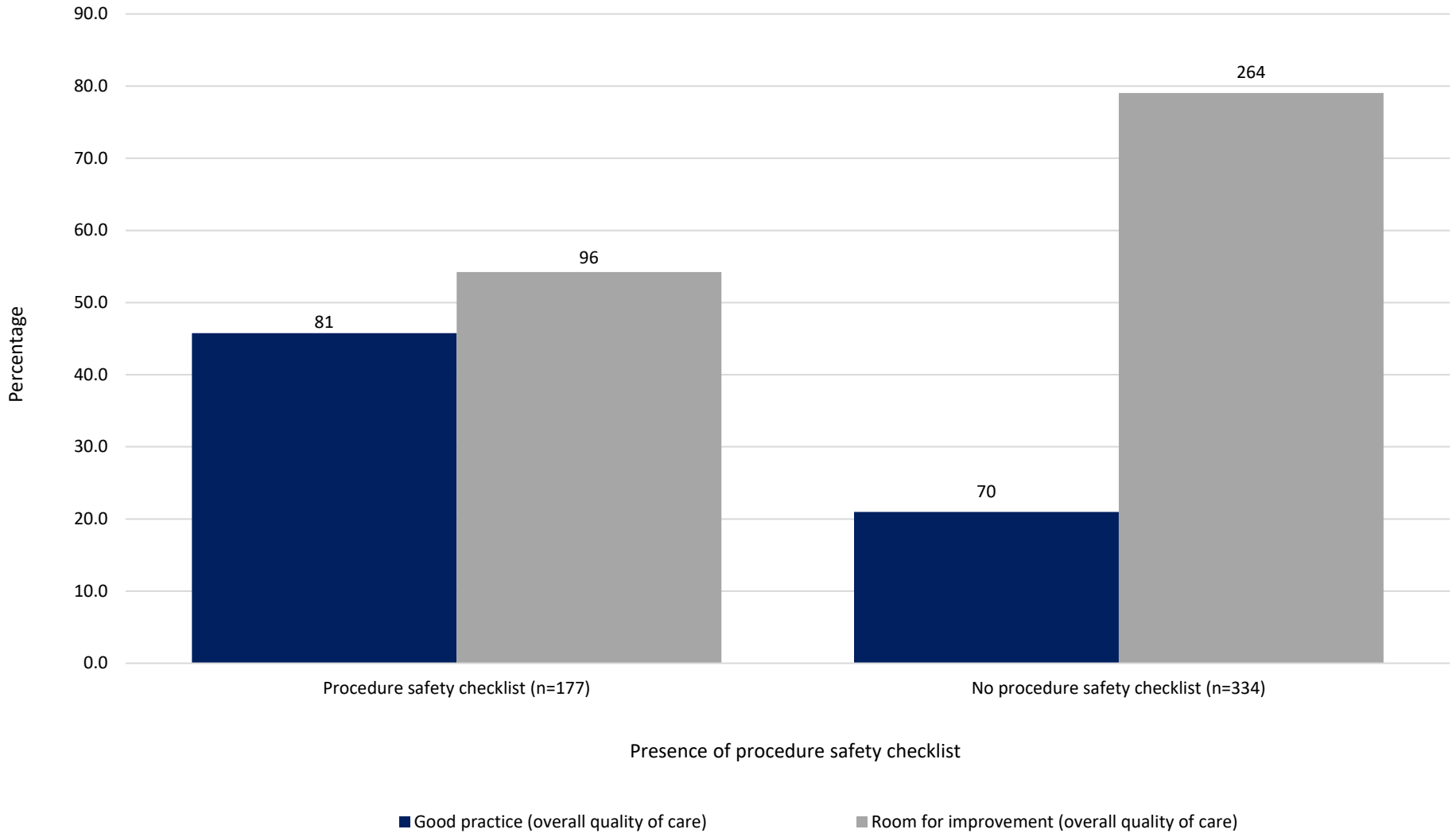
F5.11 Use of LocSSIPs by clinical specialty

Case review data



F5.12 Room for improvement in consent associated with the use of a procedure safety checklist

Case review data



F5.13 Use of a procedure safety checklist and rating of overall quality of care

Case review data

T5.4 Aspects of the procedure that were not documented	Number of patients	%
Maximum depth of pleural fluid*	483	49.4
Drain secured*	264	27.0
Size of drain*	202	20.7
Appropriate position*	200	20.4
Samples sent for analysis	153	15.6
Analgesia/anaesthetic	133	13.6
Consent	108	11.0
Technique employed*	100	10.2
Grade of operator	83	8.5
Pre-procedure tests completed	73	7.5
Ultrasound guidance used*	64	6.5
Post-procedure plan	58	5.9
Specialty of operator	53	5.4
Complications of the procedure	29	3.0
Chest X-ray to confirm position*	22	2.2

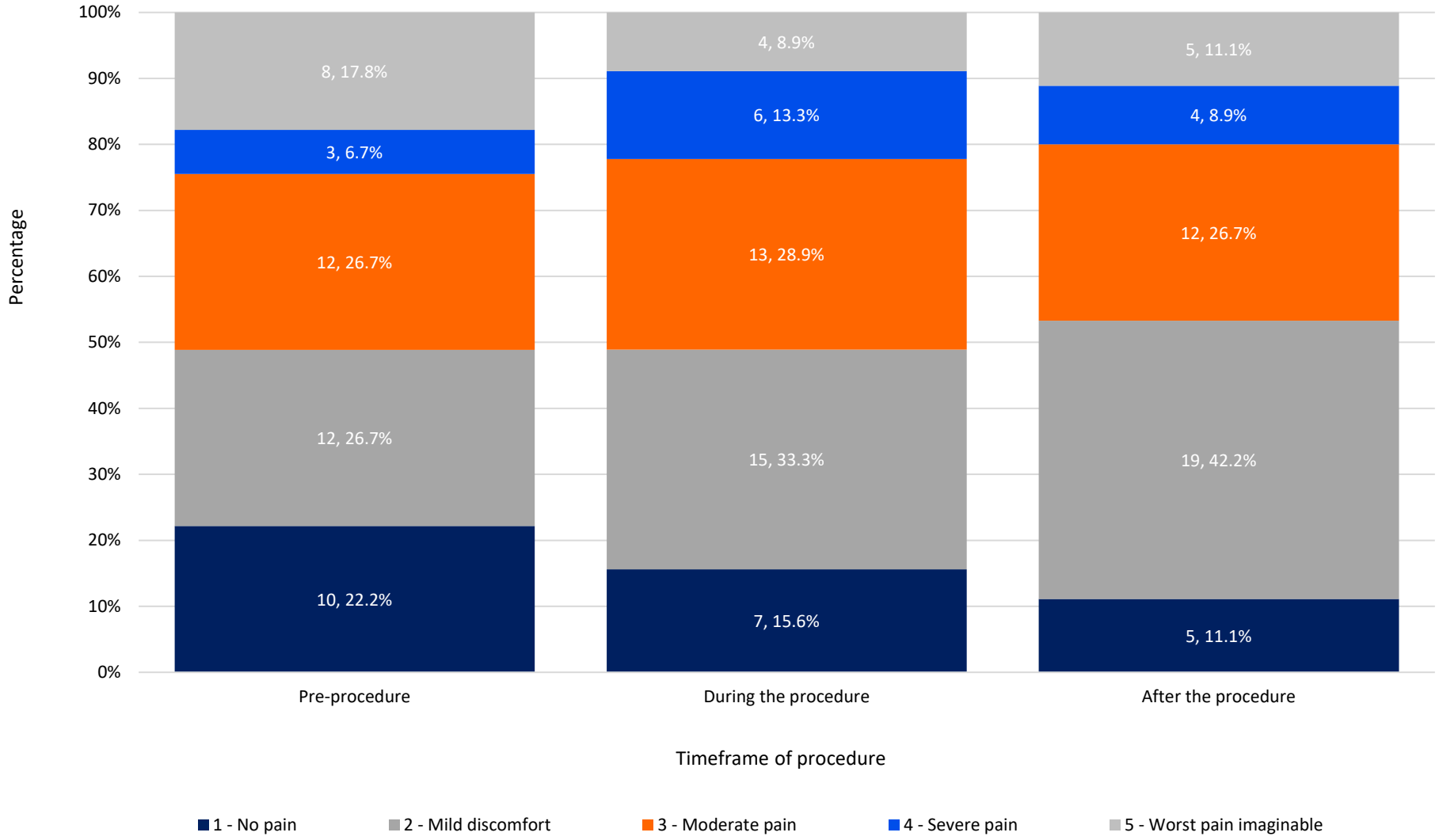
*Clinician questionnaire data. *Answers may be multiple; n=978. **Aspiration/pneumothorax not included in calculation as appropriate*

T5.5 Risk factors for bleeding that were present pre-procedure	Number of patients	%
Anti-coagulants	125	23.9
Anti-platelet agents	25	4.8
Other coagulopathy	14	2.7
Other	13	2.5
Low platelets	8	1.5
None	352	67.4

Case review data. Answers may be multiple; n=522

T5.6 Ultrasound guidance was used during the procedure	Number of patients	%
Yes	344	93.2
No	25	6.8
Subtotal	**369**	
Unclear from notes	43	
N/A: Pneumothorax	151	
Total	**563**	

Case review data



F5.14 Patient rating of pain pre-, peri- and post-procedure

Patient survey data; n= 45

T5.7 Type of anaesthesia/analgesia used	Number of patients	%
Local anaesthetic	771	91.2
Opioids (e.g. codeine)	98	11.6
Paracetamol	78	9.2
General anaesthetic	36	4.3
NSAIDs	7	0.8

Clinician questionnaire data. Answers may be multiple; n=845

T5.8 Documentation of pain	In pain at time of procedure	%	Room for improvement in any aspect of pain management/analgesia	%
Yes	91	11.0	65	17.4
No	740	89.0	308	82.6
Subtotal	**831**		**373**	
Unknown	147		190	
Total	**978**		**563**	

Clinician questionnaire data

T5.9 A standardised documentation template for the insertion of chest drains	Number of hospitals	%
Yes	123	73.7
No	44	26.3
Subtotal	**167**	
Unknown	6	
Total	**173**	

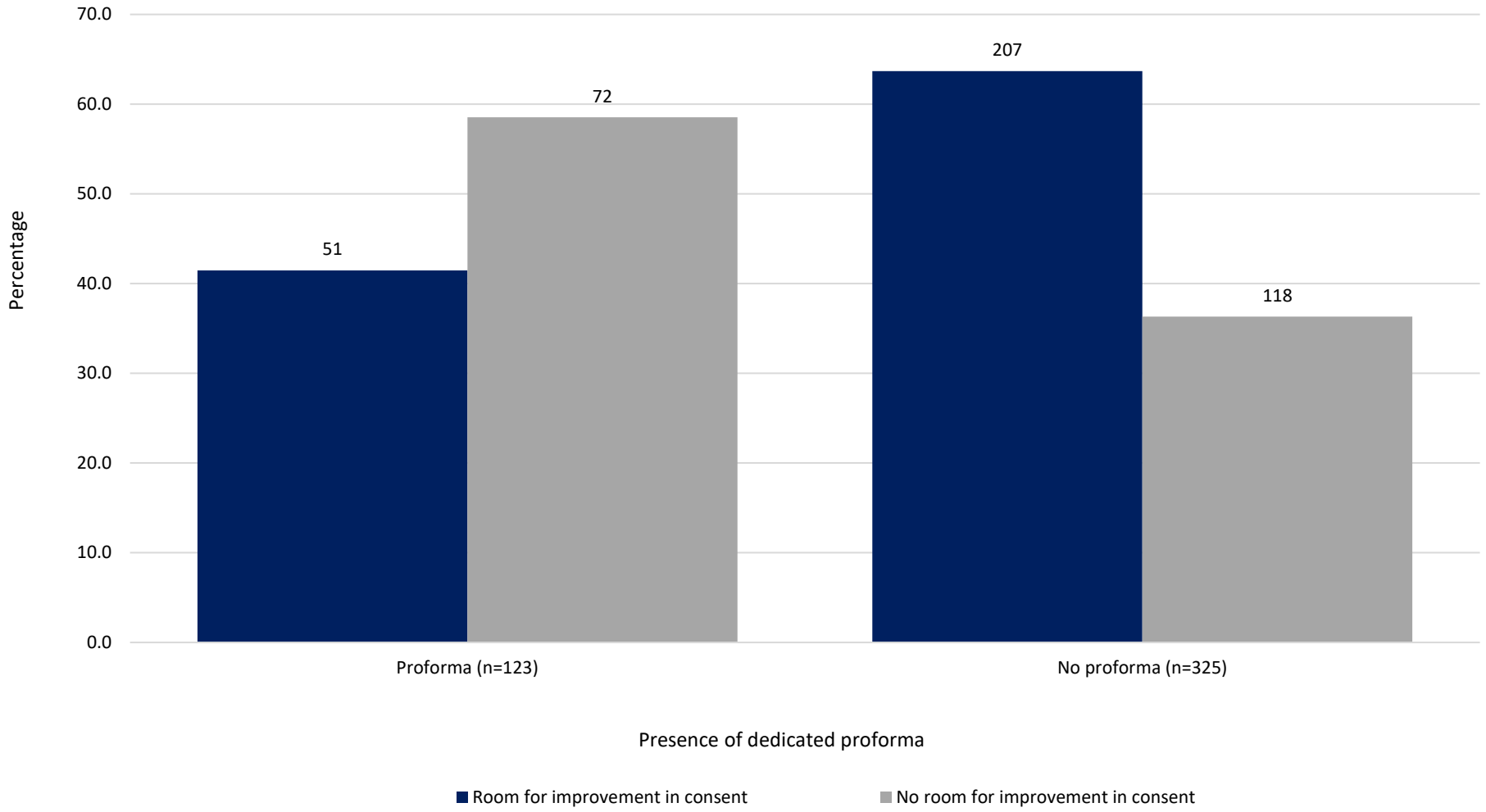
Organisational data

T5.10 Evidence that the patient's peri-procedural care was managed using a specialised proforma	Number of patients	%
Yes	141	27.2
No	377	72.8
Subtotal	**518**	
Unknown	45	
Total	**563**	

Case review data

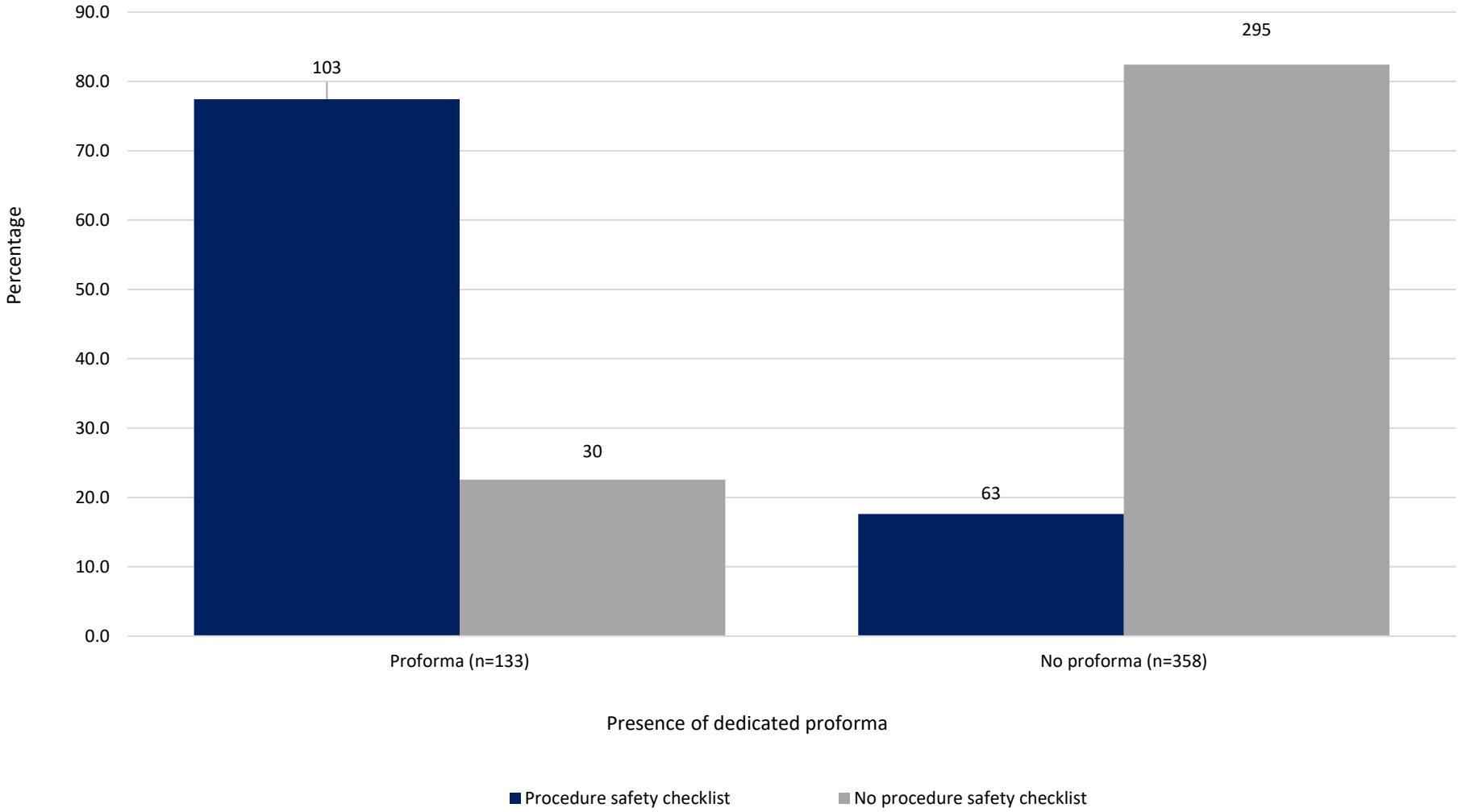
T5.11 A specific proforma for pleural procedures was used in the care of this patient	Number of patients	%
Yes	353	36.1
No, this does not exist locally	221	22.6
No, this was not completed (unknown if this exists locally)	138	14.1
No, this is available locally, but was not completed for this patient	127	13.0
This was not fully completed for this patient	24	2.5
N/A	115	11.8
Total	**978**	

Clinician questionnaire data



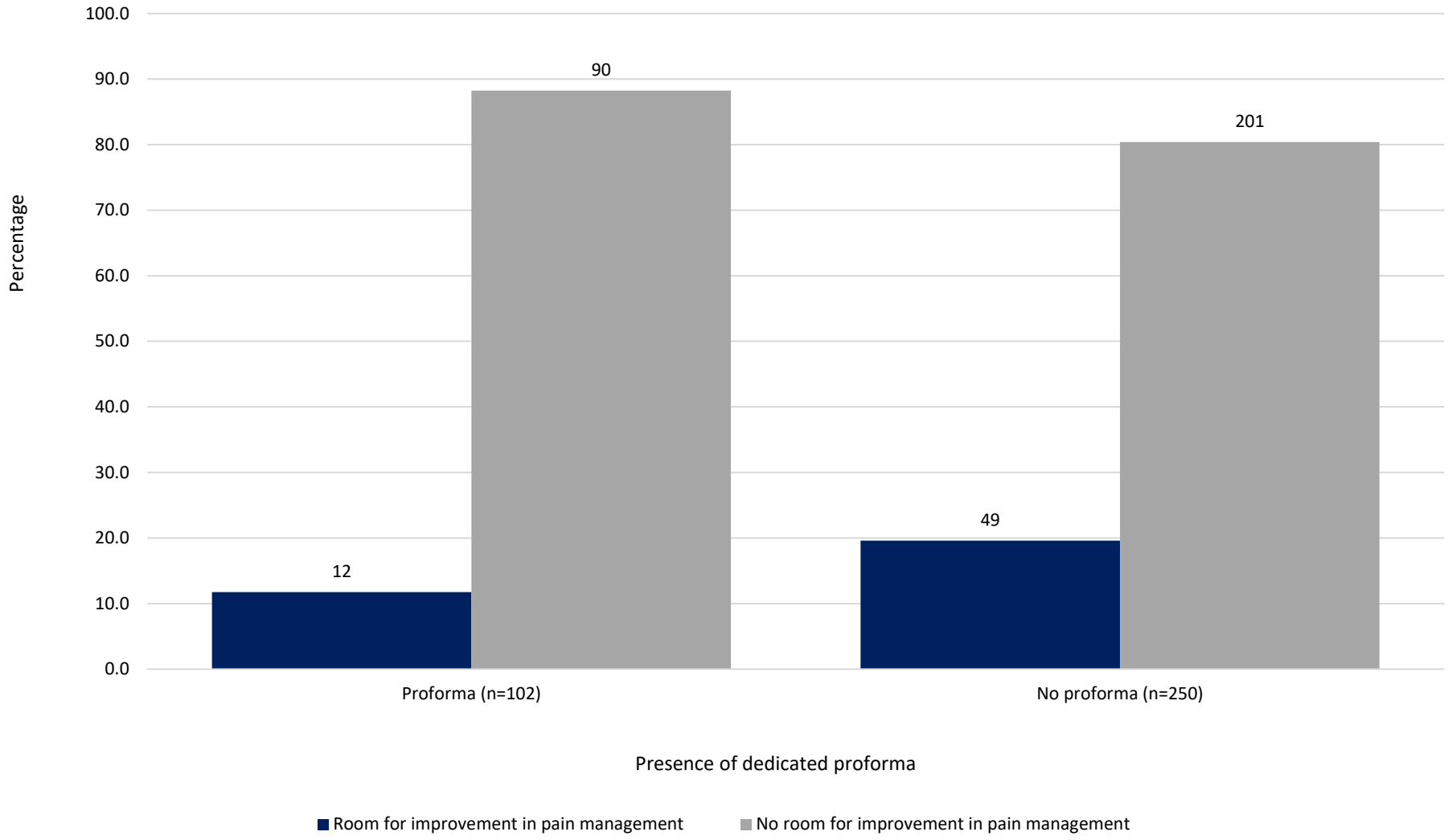
F5.15 Use of a dedicated proforma and room for improvement in consent

Case review data



F5.16 Use of a proforma and use of LocSSIPs

Case review data



F5.17 Use of a proforma and room for improvement in pain management

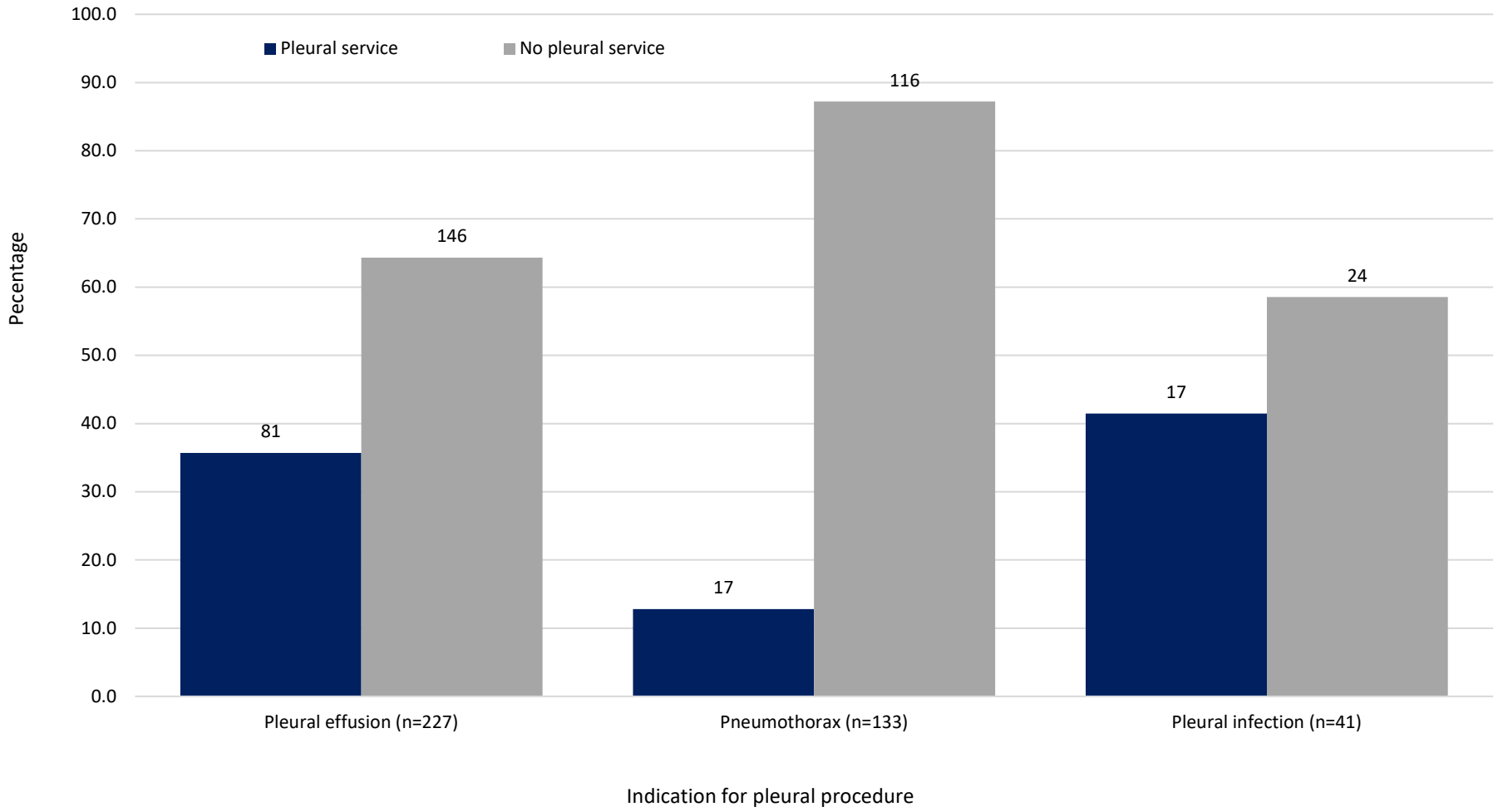
Case review data

T5.13 Evidence that a specialised pleural service was involved in the care of this patient	Number of patients	%
Pleural service	143	27.4
No pleural service	379	72.6
Subtotal	**522**	
Unknown	41	
Total	**563**	

Case review data

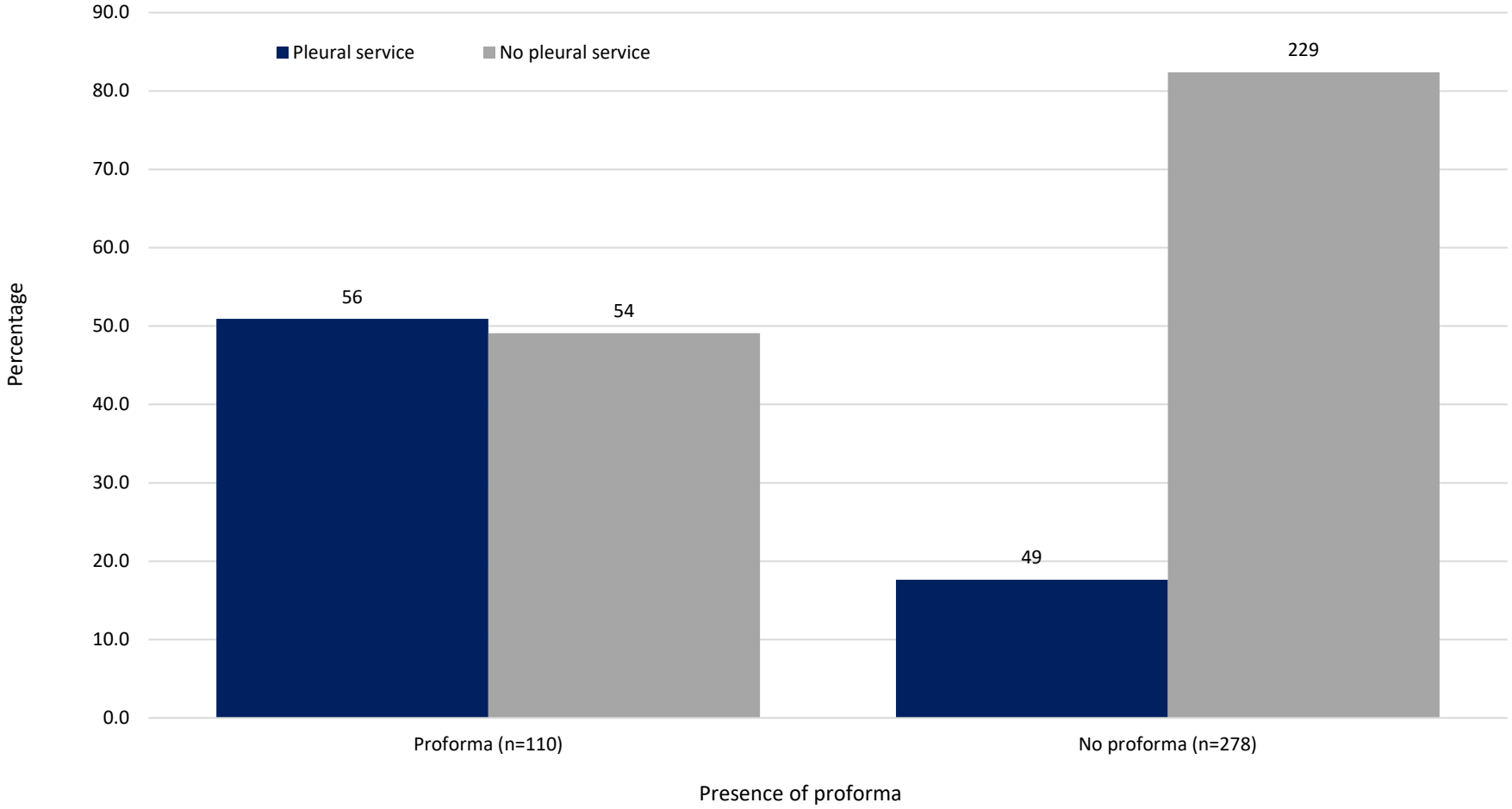
T5.14 Where a pleural service was not involved, the patient would have benefitted from this	Number of patients	%
Yes	144	40.3
No	213	59.7
Subtotal	**357**	
Unknown	22	
Total	**379**	

Case review data



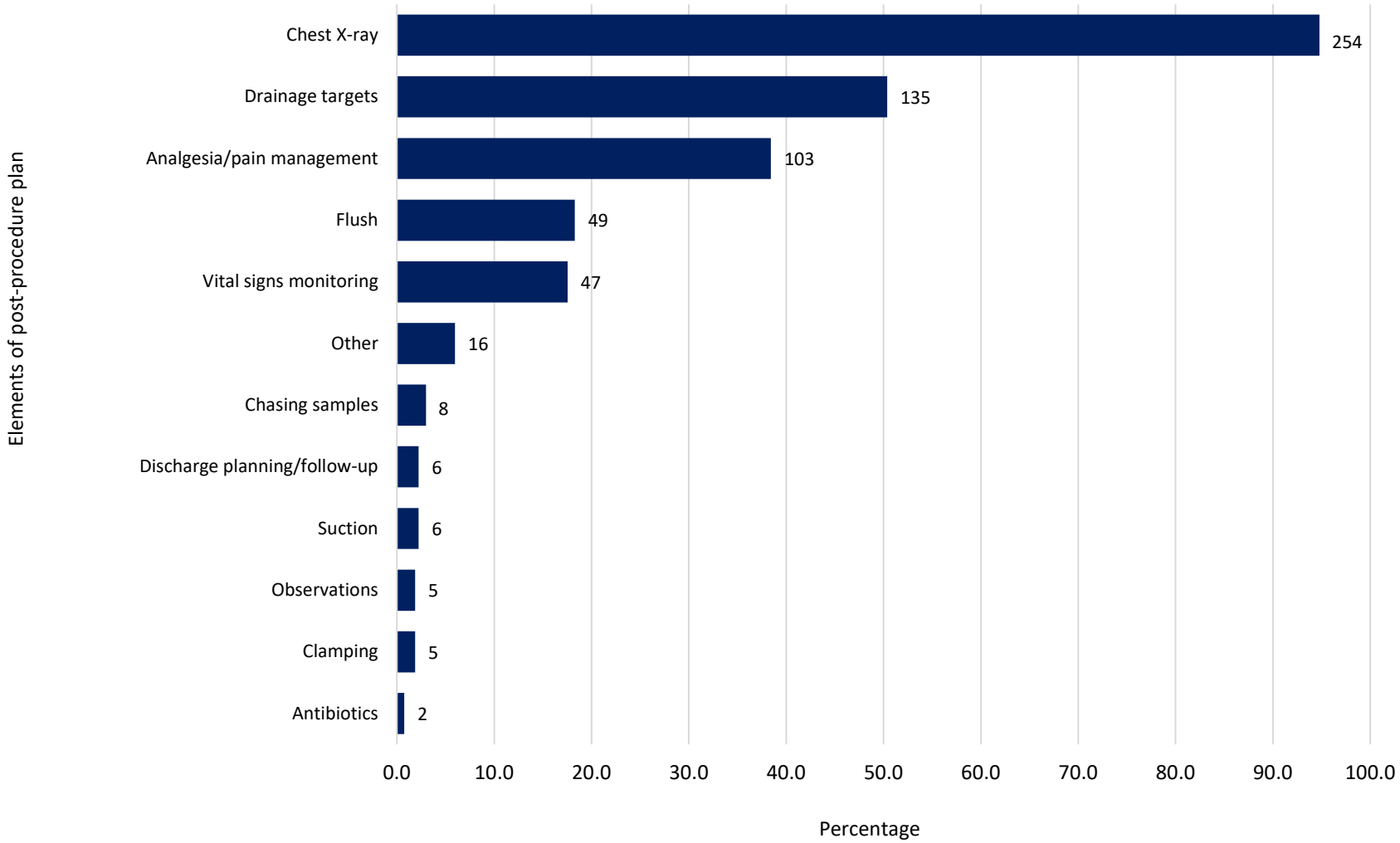
F5.18 Pleural service involvement and the indication for a pleural procedure

Case review data



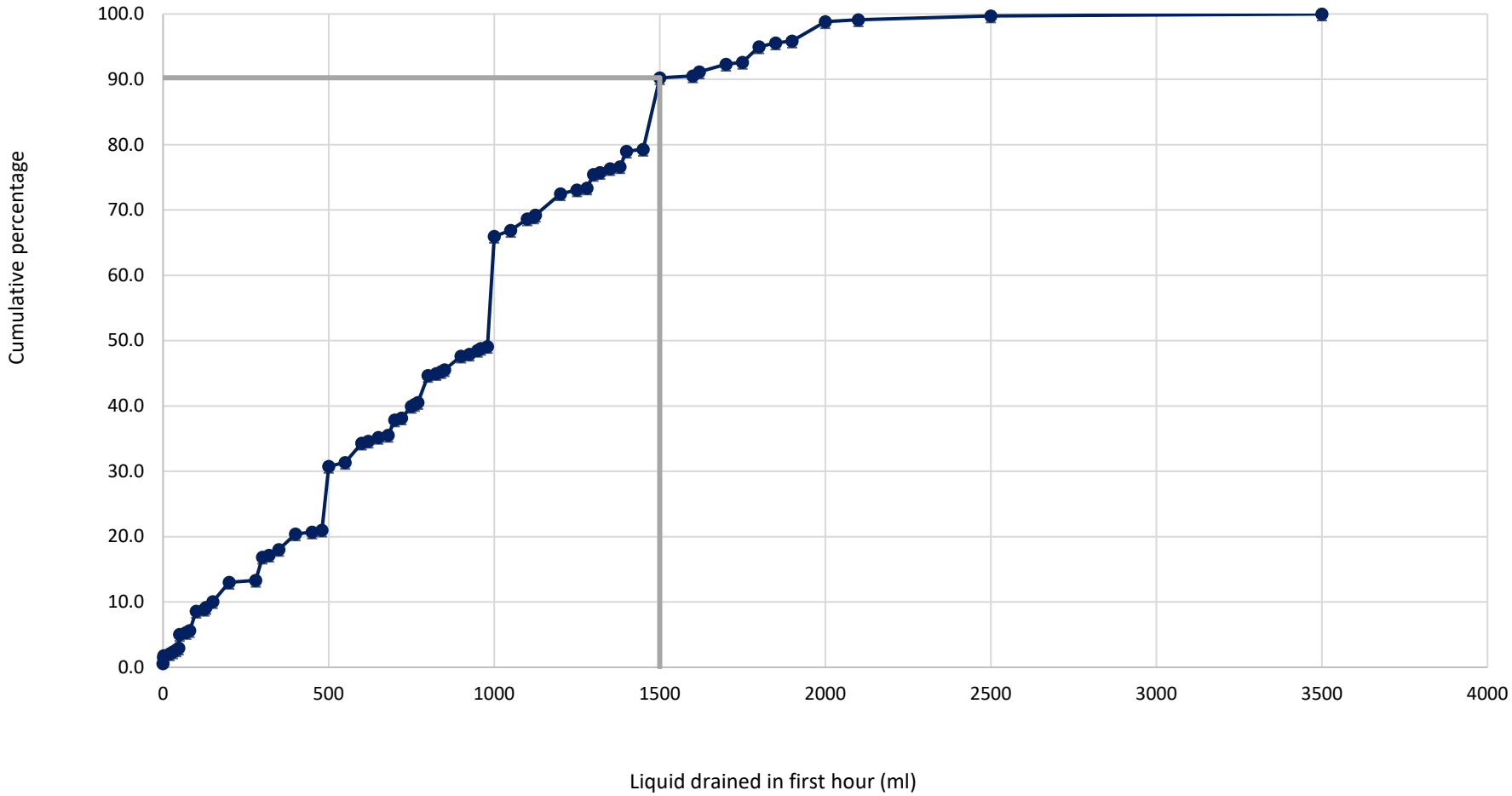
F5.19 Pleural service involvement and use of proforma

Case review data



F6.1 Elements of the post-procedure plan

Case review data; *n=396*

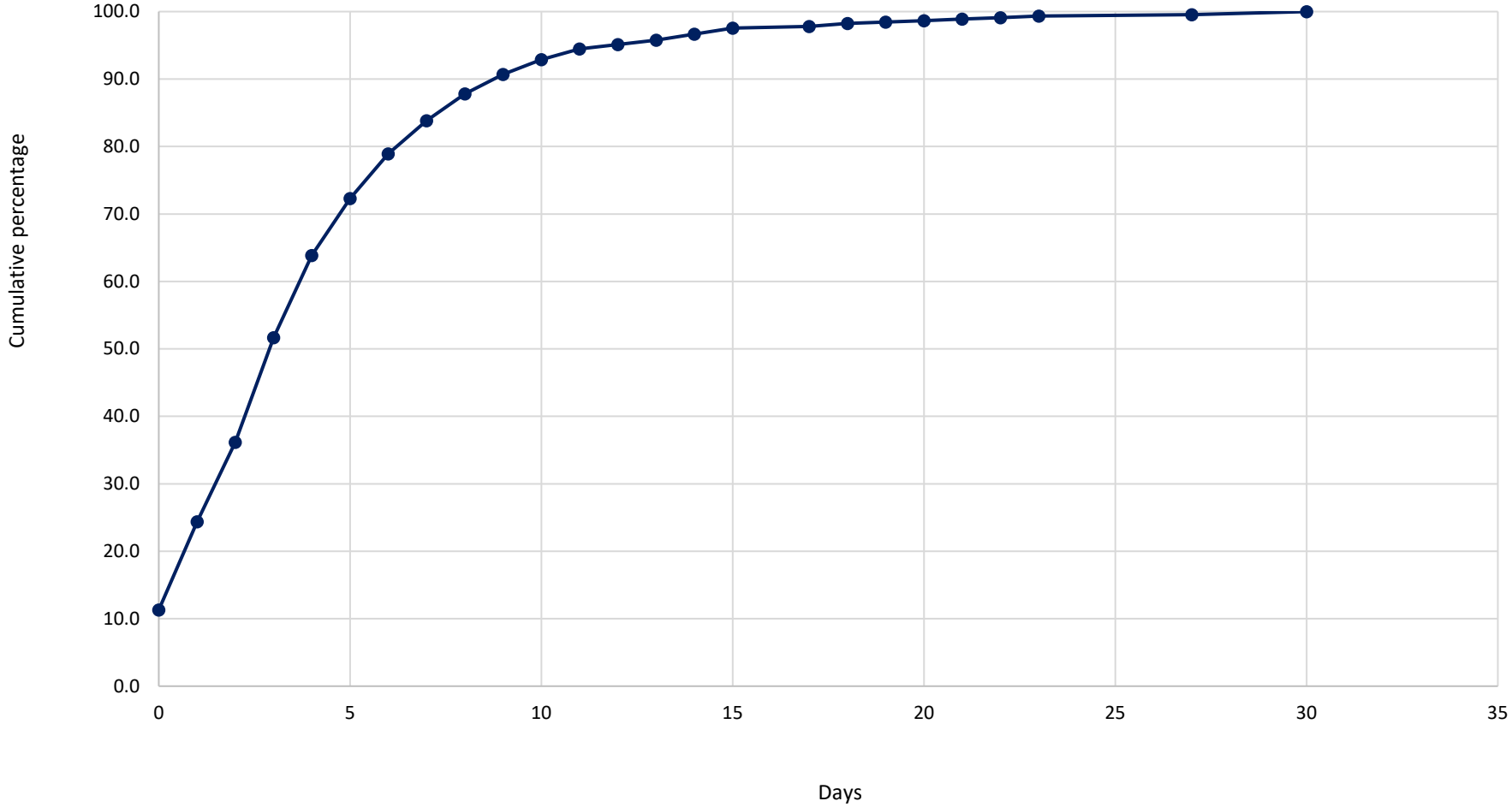


F6.2 Liquid drained within the first hour of drain insertion

Case review data; n=338

T6.1 The chest drain was checked at least daily for bleeding/signs of infection	Number of patients	%
Drain Checked at least daily	264	81.2
Drain not checked daily	61	18.8
Subtotal	**325**	
Unknown	128	
Total	**453**	

Case review data



F6.3 Number of days the drain was in place (data does not include pleural aspirations)

Case review data; n=451

T6.2 The drain was in place for an appropriate length of time	Number of patients	%
Yes	321	81.1
No	75	18.9
Subtotal	**396**	
Unknown	57	
Total	**453**	

Case review data

T7.1 Systems used locally for incident reporting	Number of hospitals	%
Datix (RLDatix/Datix Cloud IQ)	124	71.7
InPhase/Incident Oversight	24	13.9
Ulysses 2000 Ltd	17	9.8
Radar Healthcare (Smartgate Solutions Ltd)	8	4.6
Other	2	1.2
Total	**173**	

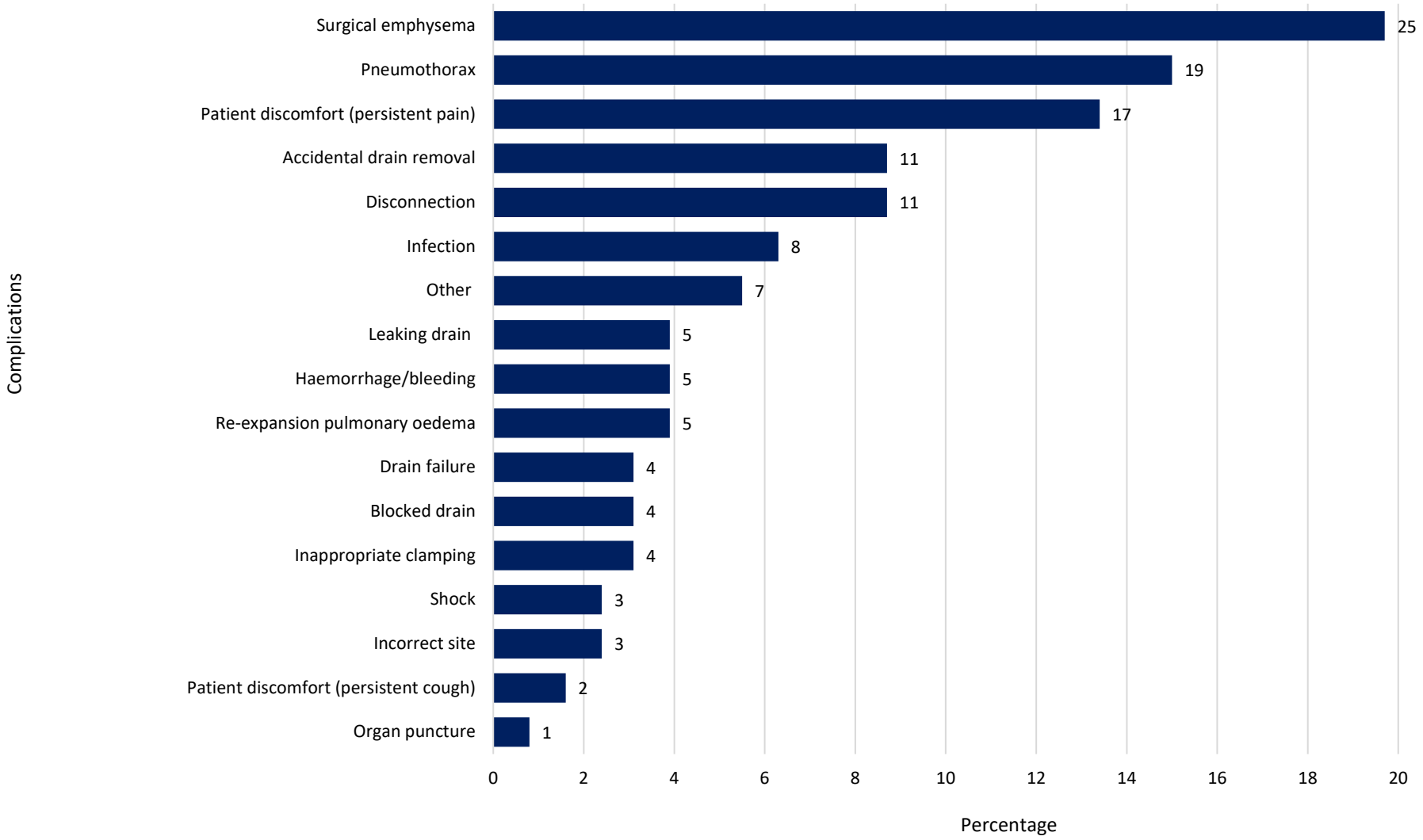
Organisational data

T7.2 Functions of the learning resource management system	Number of hospitals	%
Can be easily searched to extract data on key fields, e.g. searching 'chest drain'	83	48.0
Can be used to identify long-term trends in patient safety/improvements in care	62	35.8
Allows managers to easily provide feedback to the reporter on actions taken	58	33.5
Automatically uploads or links to national databases to streamline mandatory reporting	36	20.8
Provides automated tools to help investigators identify common themes	26	15.0
Is bi-directionally linked with the electronic patient record, allowing for clinical data (e.g. admission dates) to be extracted	12	6.9
Is linked to other routine clinical information to enrich analysis without increasing the burden	6	3.5
None of these	5	2.9

Organisational data; n=173

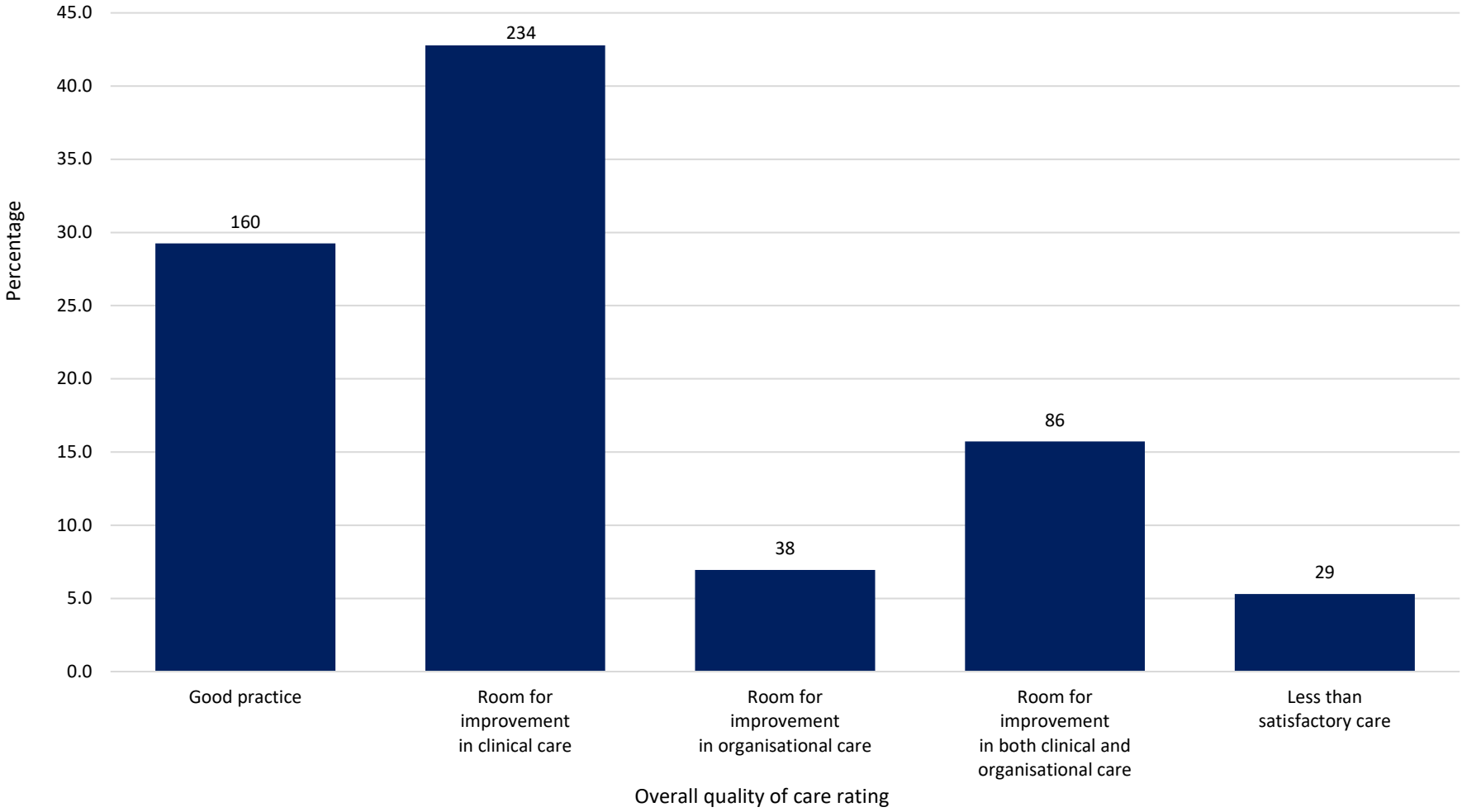
T7.3 Pleural procedure-related complications	Number of patients	%
Yes	127	23.4
No	415	76.6
Subtotal	**542**	
Unknown	21	
Total	**563**	

Case review data



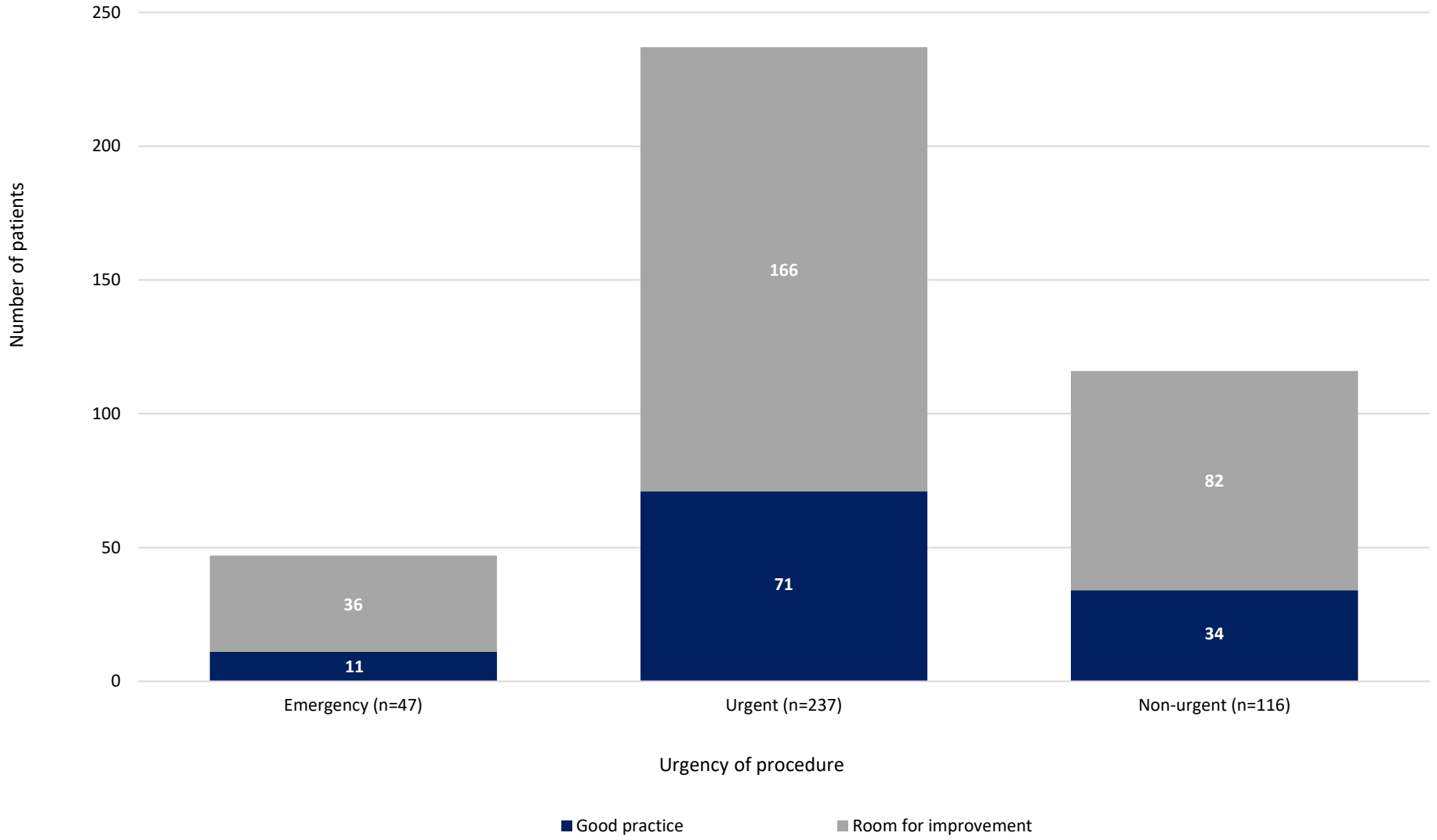
F7.1 Complications of the pleural procedure

Case review data, n=127



F7.2 Overall quality of care

Case review data; n=547



F7.3 Urgency and overall quality of care

Case review data; n=400