



Report on National Antimicrobial Targeted Point Prevalence Survey for Surgical Antibiotic Prophylaxis in Acute Hospitals in Ireland 2025

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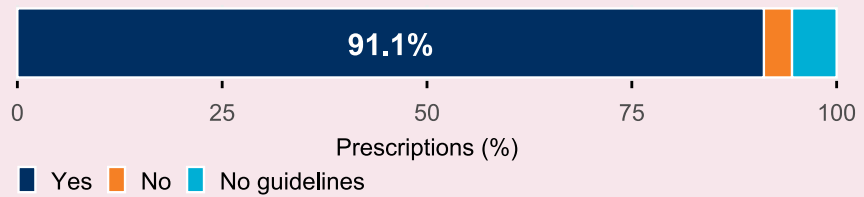
Summary of findings

Hospitals participated: 53 SAP prescriptions included: 698

Areas of good practice identified in the tPPS

• Overall continued good progress in relation to surgical antibiotic prophylaxis (SAP) duration and evidence of local quality improvement.

SAP required for surgical procedure as per guidelines

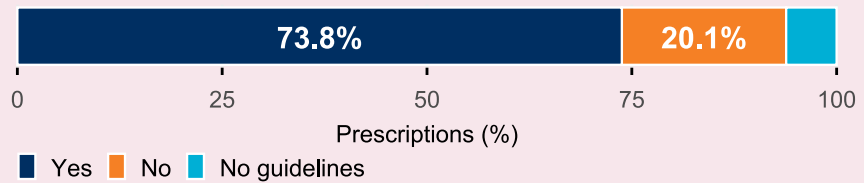


Areas for improvement identified in the tPPS

SAP extended beyond recommended max duration



First line choice of antibiotic regimen



Support structures for SAP antimicrobial stewardship

Lead surgeon overseeing SAP quality improvement



Lead anaesthetist overseeing SAP quality improvement



Local guidelines state whether SAP is required



Local guidelines state duration of SAP required



Key recommendations

1. **Only prescribe SAP when stipulated as a requirement for the surgical procedure** according to local guidelines.
2. **Stop SAP at earliest recommended time.** For most surgical procedures this is a single dose.
3. **Use first line recommended agents,** acknowledging patient specific factors, to decrease risk of surgical site infection and patient harm.
4. **Ensure access to comprehensive SAP guidelines** on appropriate use, non-use, choice and duration of antibiotics.
5. **Promote a collaborative and multidisciplinary approach to local SAP quality improvement,** including lead surgeons and anaesthetists.

1. Background

HSE AMRIC coordinated two national antimicrobial targeted point prevalence surveys (tPPS) in 2025. The primary objective of the tPPS was to focus collective AMS efforts.

It aimed to drive quality improvement in two key areas identified in the national antimicrobial point prevalence survey (PPS) 2024:

- Surgical antibiotic prophylaxis (SAP)
- Route of administration

The tPPS replaced the national antimicrobial PPS of acute hospitals in 2025. It aimed to reduce the burden of data collection and increase participation of acute hospitals by limiting the population sample size and number of collection criteria.

Data collection occurred between 15th September 2025 – 10th October 2025.

In the 2025 SAP tPPS, sites surveyed all patients on surgical wards, with detailed data collected for those receiving SAP in the previous 24 hours. Patients receiving SAP on non-surgical wards were not included in this tPPS. Details of the full protocol are available on [antibioticprescribing.ie](https://www.antibioticprescribing.ie).

2. General results

- 53 hospitals participated in the 2025 SAP tPPS (eight Model 4, seventeen Model 3, three Model 2, fourteen Private and eleven Specialty hospitals). Table A1 in Section 9 Appendix lists all hospitals that participated in the 2025 tPPS.
- 53 of the 65 invited hospitals participated. Many of the non-participating hospitals either had no surgical service or no surgery was performed during the data collection period.
- The total number of patients screened was 3859. Of these, 604 were receiving SAP and detailed data was collected for their antimicrobial prescriptions.
- Some patients were receiving more than one antimicrobial for SAP. Overall, 698 SAP prescriptions were reviewed, representing an average of 1.16 SAP prescriptions per patient.

3. Prescribing of SAP when required

- At 91.1%, the large majority of SAP prescriptions were required for the surgical procedure for which they were prescribed as stipulated in local guidelines (Figure 1).
- SAP was prescribed where it was not required according to local guidelines for 3.4% of prescriptions, while for 5.4% of prescriptions no guidelines were in place. Table A2 in the Appendix provides a breakdown of these results by surgical category and operative procedure.

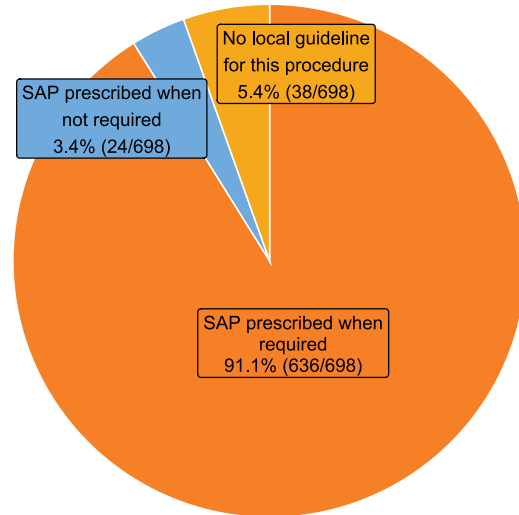


Figure 1 – SAP indicated for procedure according to local guidelines.

4. Duration of SAP

4.1. HSE AMRIC SAP target: extension beyond 24 hours

- 16.8% (n=117/698) of SAP prescriptions were extended beyond 24 hours. This represents a decrease from the previous three years (2024: 26.0%, 2023: 29.5%, 2022: 32.3%; Figure 2 and Table A3). It should be noted that 2025 SAP tPPS participant selection and population differed from the national antimicrobial PPS – see Section 7.10 Limitations below for further detail.

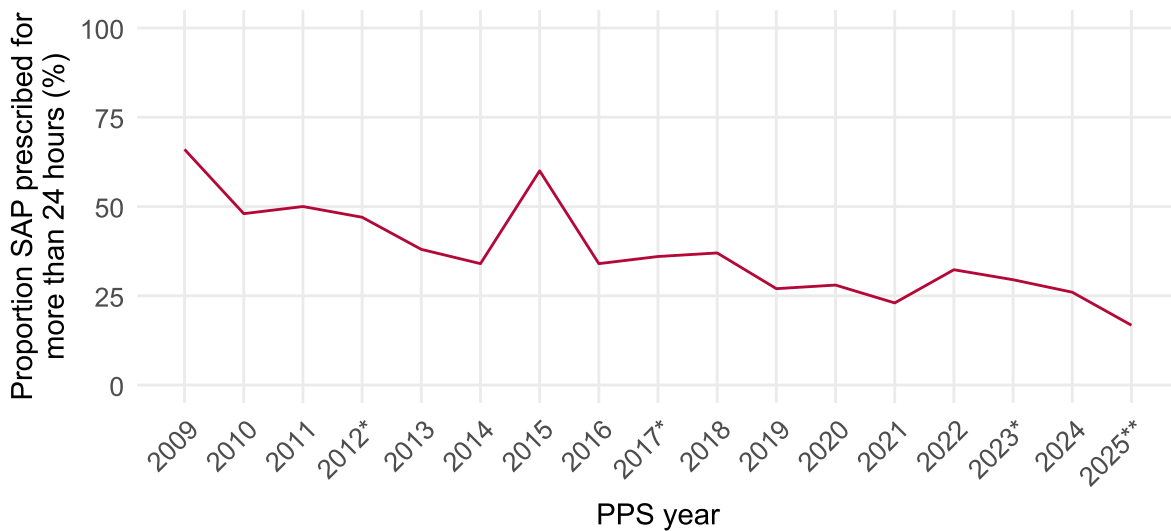


Figure 2 – Historical trend in proportion of SAP extended beyond 24 hours. *2023, 2017 and 2012 results taken from ECDC PPS of Hospital-Acquired Infections & Antimicrobial Use in European Acute Care Hospitals. **2025 results from the 2025 targeted PPS.

HSE AMRIC action plan 2026-2030 2026 target:
25% of SAP extended beyond 24 hours

- Figure 3 describes the number and relative proportions of SAP prescriptions by duration for each surgical category as well as the total number of prescriptions per category. Figure 4 describes these for Centers for Disease Control and Prevention National Healthcare Safety Network (NHSN) operative procedures. See Table A4 for these exact numbers broken down by operative procedure for each surgical category.

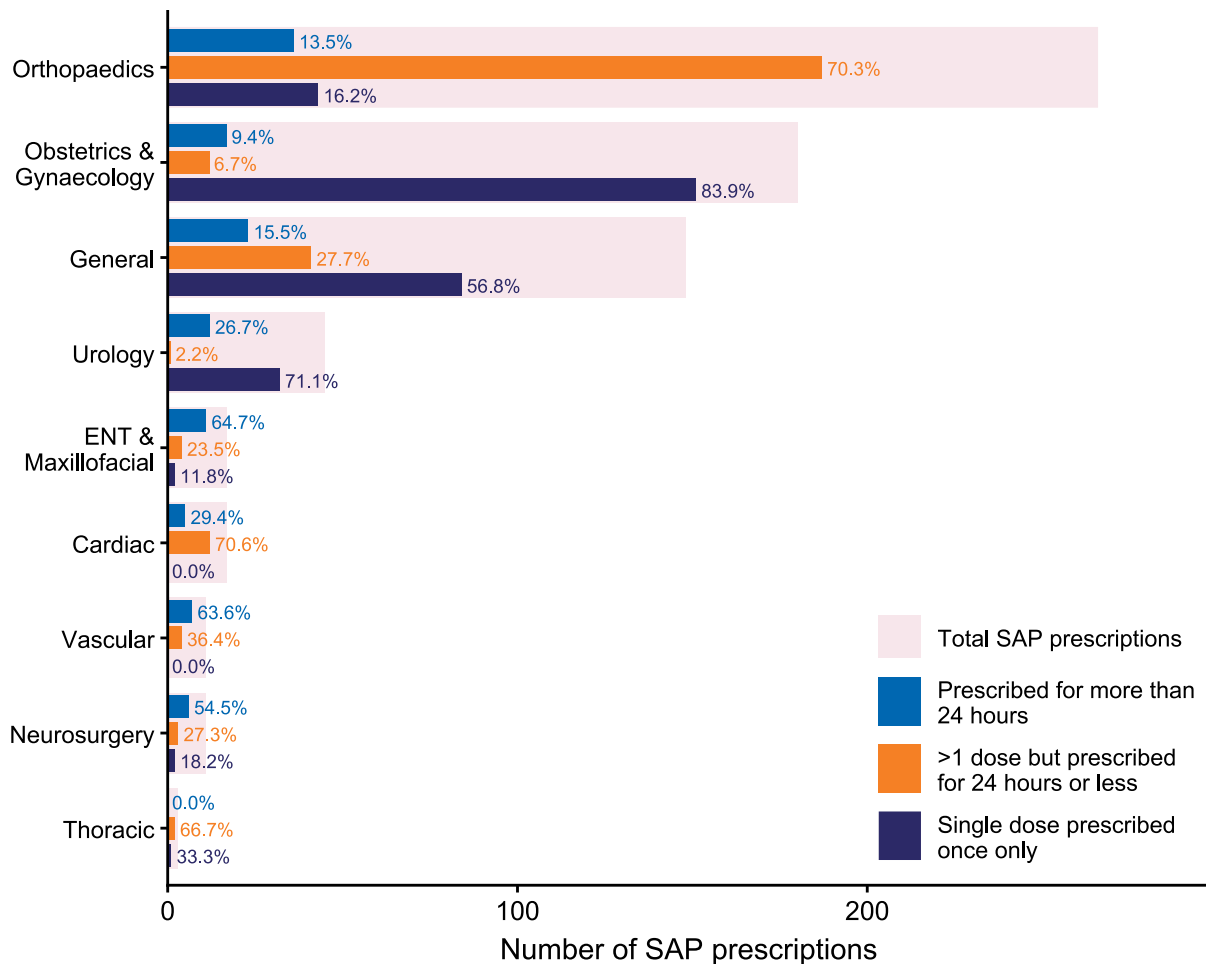


Figure 3 – Duration of SAP, by surgical category. Thick bars represent total number of SAP prescriptions per surgical category. Thin bars represent number of prescriptions by duration. The percentages represent the relative proportion of SAP duration within each surgical category. Note: As per 2025 SAPtPPS protocol, data is not captured for all surgeries within a specific surgical category where antibiotics are not prescribed.

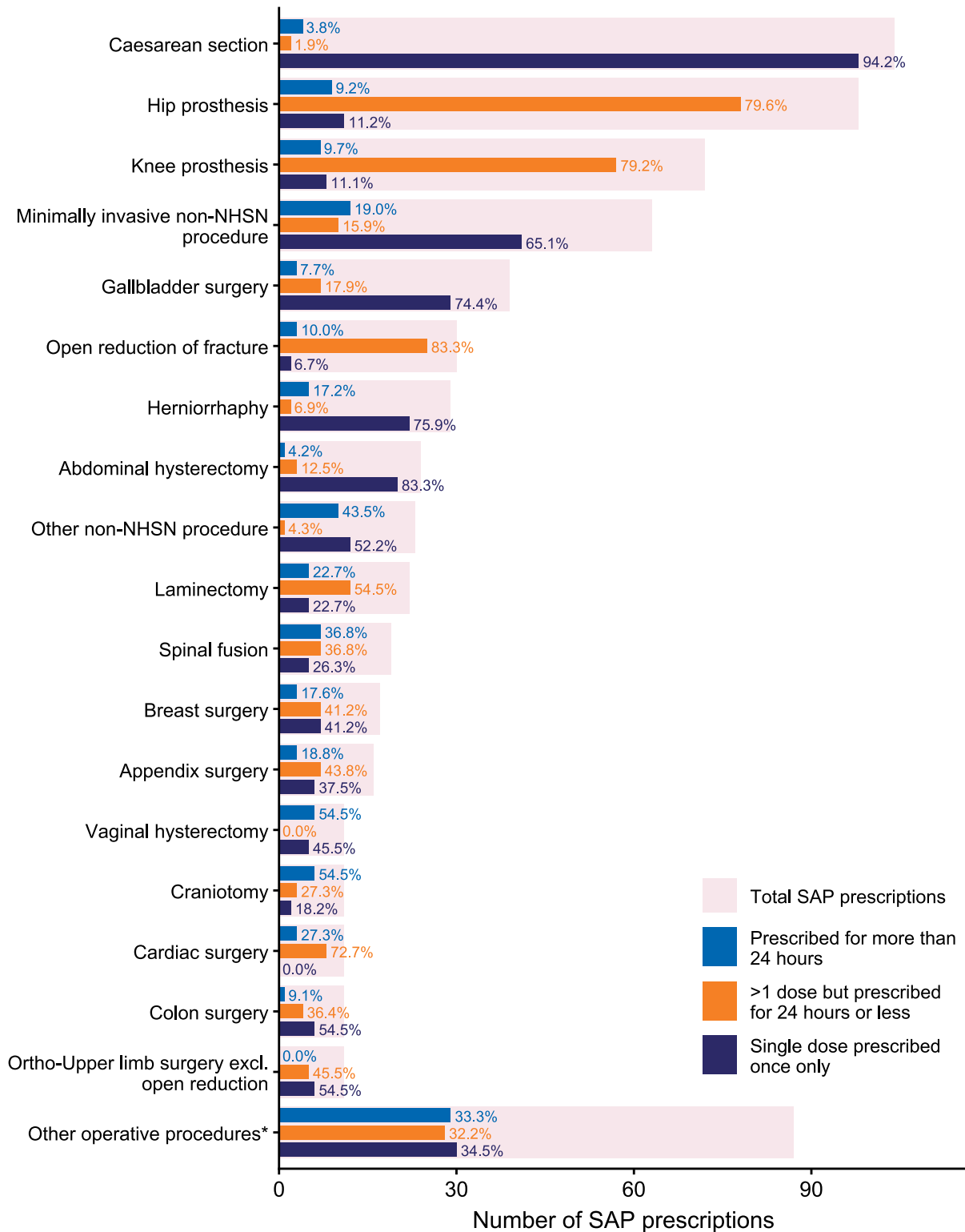


Figure 4 – Duration of SAP, by NHSN operative procedure. Thick bars are total number of SAP prescriptions per operative procedure. Thin bars represent number of prescriptions by duration. Percentages are the relative proportions within each operative procedure.
 *Other operative procedures category contains all procedures with 10 or fewer total prescriptions.

- Model 4 hospitals had the highest proportion of SAP prescriptions extended beyond 24 hours, at 23.4% (n=30/128; Table 1). Model 2 hospitals had the lowest proportion, at 7.4% (n=2/27).
- In contrast, specialist hospitals had the highest proportion of single dose SAP prescriptions, at 69.2% (n=83/120; Table 1). Model 4 hospitals had the lowest proportion, at 31.2% (n=40/128).
- On the day of the tPPS, a variation in proportion of SAP prescriptions extended beyond 24 hours was seen both nationally and across each hospital model. Figure 5 illustrates the hospital proportions of SAP prescribed for more than 24 hours, broken down by hospital model. As reflected in this figure, the total number of SAP prescriptions per hospital ranged from 1 to 35 prescriptions. Of these hospital totals, the number of SAP prescriptions prescribed for more than 24 hours ranged from 0 to 11.

Table 1 – Duration of SAP, by hospital model.

Hospital model	Prescribed for more than 24 hours		>1 dose but prescribed for 24 hours or less		Single dose prescribed once only		Total (n)
	(n)	(%)	(n)	(%)	(n)	(%)	
Model 2	2	7.4	16	59.3	9	33.3	27
Model 3	25	17.1	50	34.2	71	48.6	146
Model 4	30	23.4	58	45.3	40	31.2	128
Private	49	17.7	116	41.9	112	40.4	277
Specialist	11	9.2	26	21.7	83	69.2	120
Total	117	16.8	266	38.1	315	45.1	698

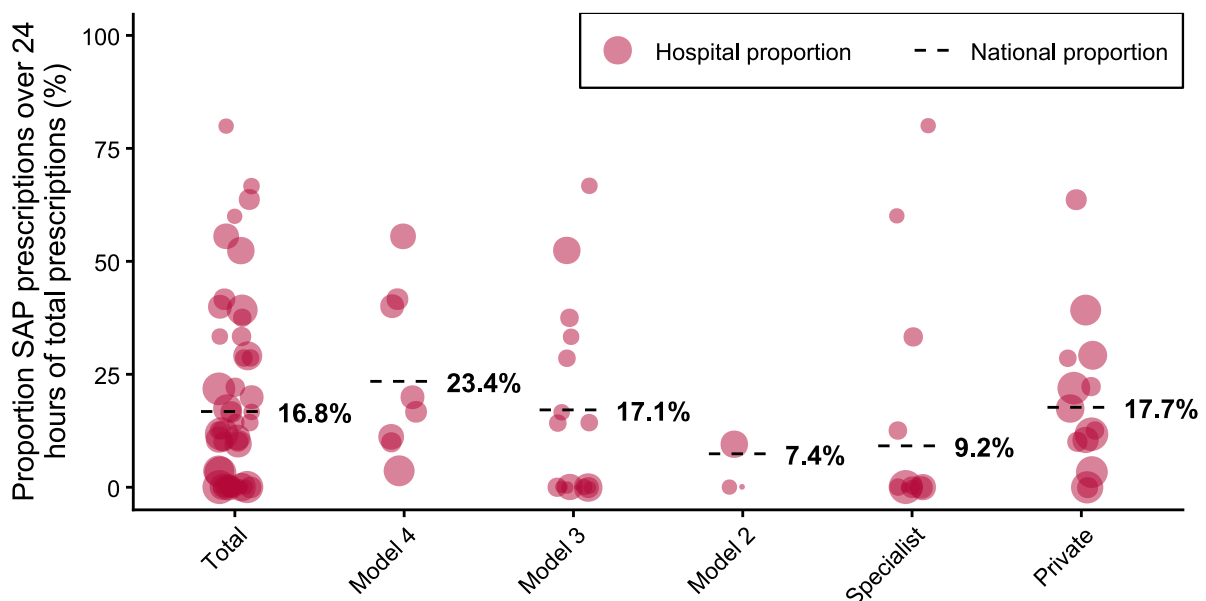


Figure 5 – Distribution of hospital proportions of SAP prescribed for more than 24 hours and national proportion, by hospital model. Each dot represents a hospital, with the dot size proportional to the total number of SAP prescriptions.

4.2. Extension beyond recommended maximum duration

- 21.5% (n=150/698) of SAP prescriptions were extended beyond the recommended maximum duration, according to local guidelines or HSE position statement if no local guidelines in place (Figure 6 and Table A5).

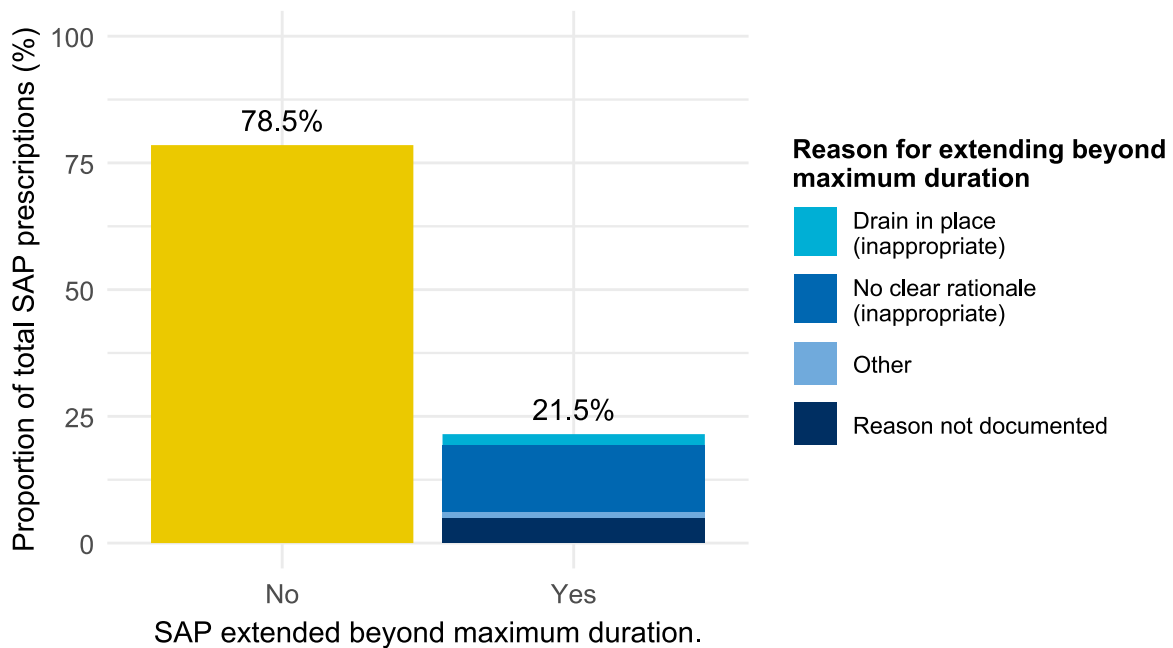


Figure 6 – SAP prescriptions extended beyond maximum duration, including reasons.

- Figure 7 describes the number and relative proportion of SAP prescriptions by whether they were extended beyond recommended maximum duration or not for each surgical category as well as the total number of prescriptions per category. Figure 8 describes these for NHSN operative procedures. See Table A6 for these exact numbers broken down by operative procedure for each surgical category.

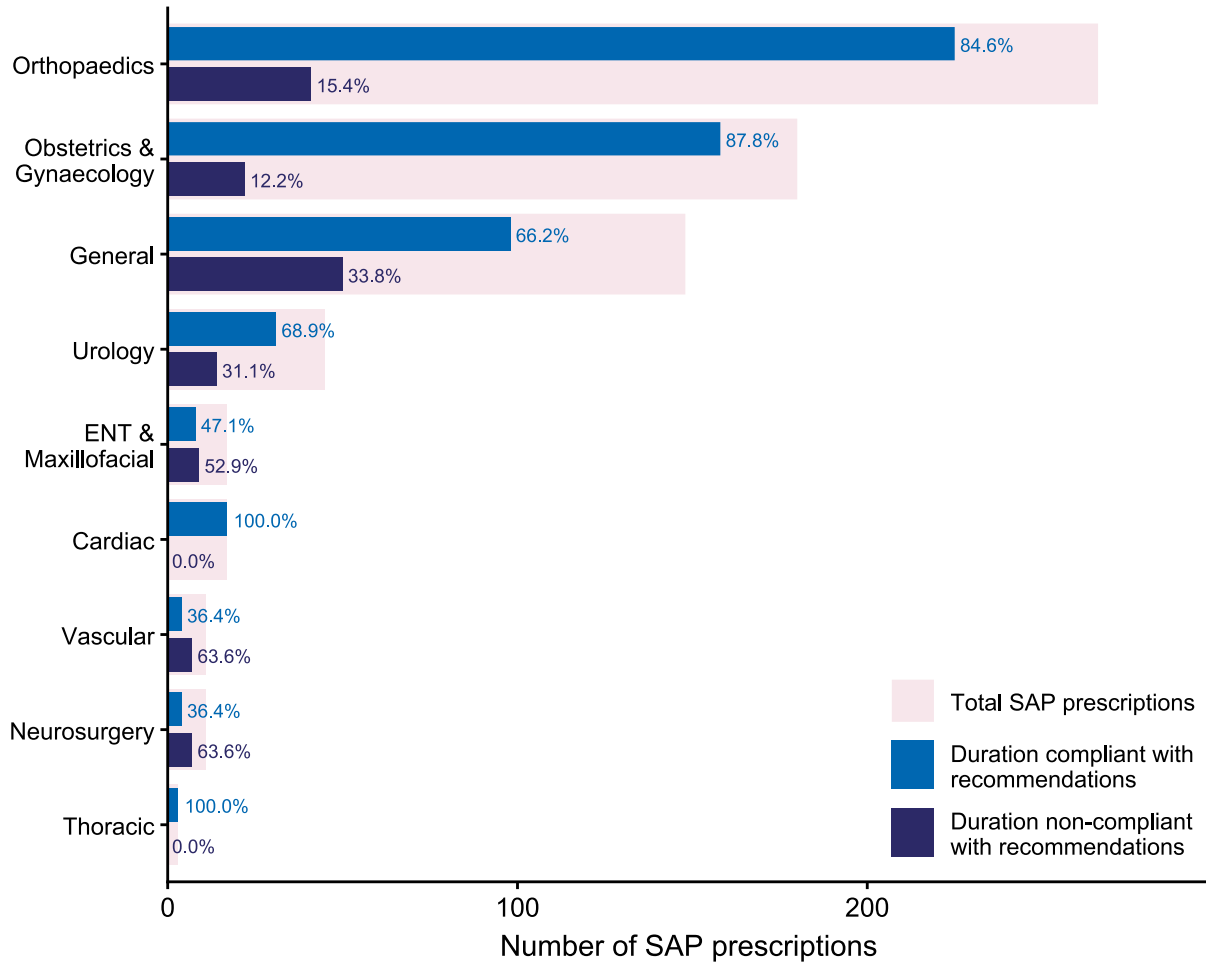


Figure 7 – Prescriptions that were extended beyond recommended maximum duration, by surgical category. Thick bars represent total number of SAP prescriptions per surgical category. Thin bars represent number of prescriptions by whether they were extended beyond recommended maximum duration or not. The percentages represent the relative proportions within each surgical category. Note: As per 2024 national antimicrobial PPS protocol, data is not captured for all surgeries within a specific surgical category where antibiotics are not prescribed.

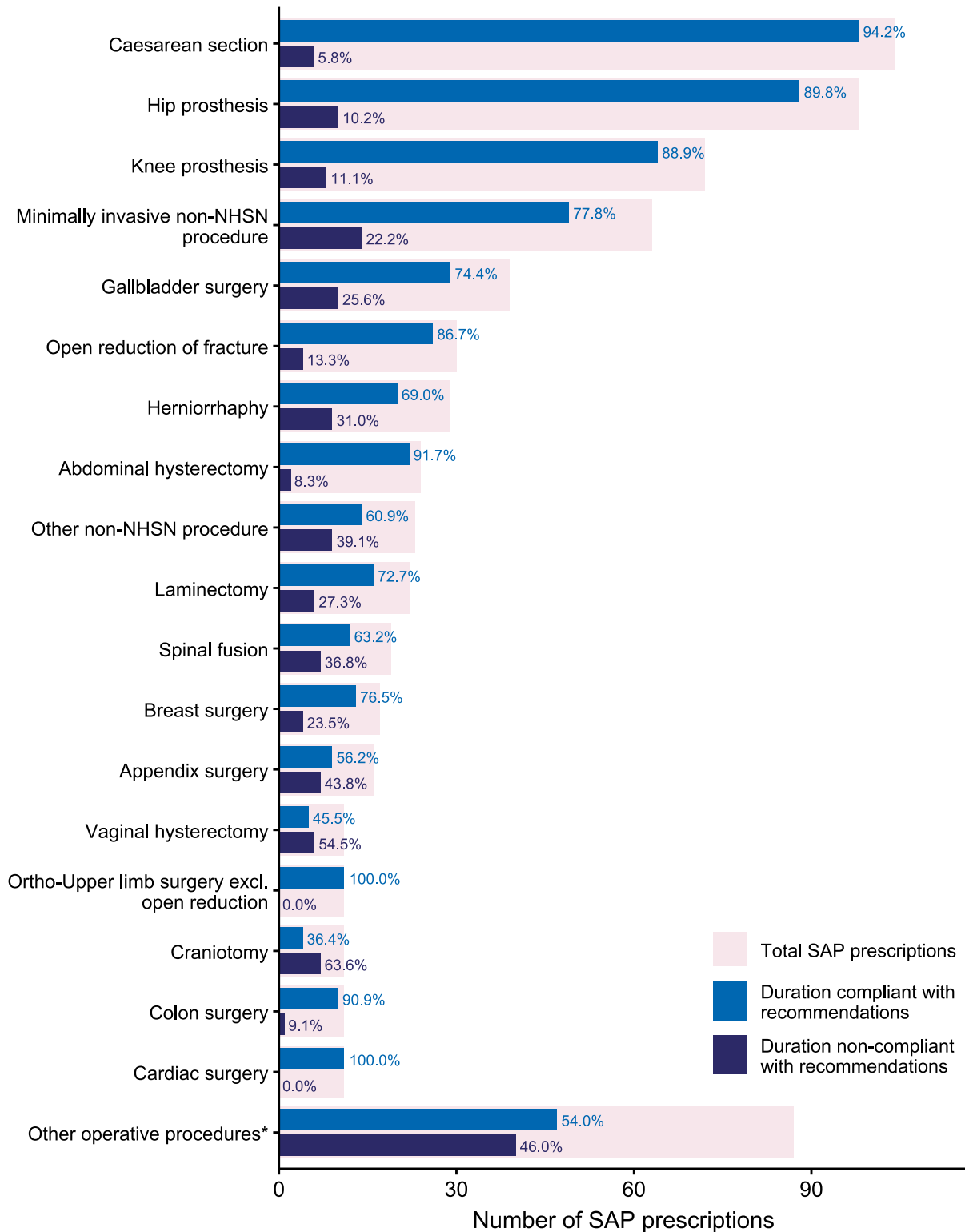


Figure 8 – Prescriptions that were extended beyond recommended maximum duration, by operative procedure. Thick bars represent total number of SAP prescriptions per operative procedure. Thin bars represent number of prescriptions by whether they were extended beyond recommended maximum duration or not. The percentages represent the relative proportions within each operative procedure.

*Other operative procedures category contains all procedures with 10 or fewer total prescriptions.

4.3. Rationale for extending surgical antibiotic prophylaxis duration

- 22.7% (34/150) of SAP prescriptions that were extended beyond the recommended duration had no reason documented for this (Figure 6 and Table A5).
 - As stated in the national position statement, SAP duration may be extended to 48 hours for certain categories of surgical procedures: maxillofacial surgery, cardiac surgery, and head and neck surgery. Of the SAP prescriptions that were extended beyond the recommended maximum duration with no documented reason, 4/34 were prescribed for patients with the aforementioned surgical procedures. This represents potentially appropriate extension of SAP duration.
 - The remaining 30/34 of SAP prescriptions with no documented reason for extension beyond recommended duration may represent an inappropriate extension of duration.
- SAP prescriptions that were extended beyond the recommended maximum duration with no documented reason are listed by surgical category and operative procedure in Table A7.
- 77.3% (n=116/150) of SAP prescriptions that were extended beyond recommended duration had a reason documented for this (Figure 6 and Table A5).
- The reason reported as “drain in place” i.e., inappropriate, was given in 10.0% (n=15/150) of these prescriptions.
- 61.3% (n=92/150) were observed to be extended inappropriately with no clear rationale. Table A8 contains a breakdown of these numbers by surgical category and operative procedure.
- “Other” reasons were cited in 6.0% (n=9/150) of these prescriptions.
 - A summary of the free text answers provided for 9 prescriptions where “Other” reasons were given for continuing the antimicrobials beyond recommended duration is provided in Table A9.

5. Choice of antimicrobial for SAP

- Patients received first line choice of antibiotic regimen recommended in the local antibiotic prescribing guidelines in 73.8% (515/698) of prescriptions (Figure 9).
- 20.1% (140/698) of prescriptions were not first line choice of antibiotic regimen, and in 5.4% (38/698) of these, the reason given for not choosing a first line agent was penicillin allergy.

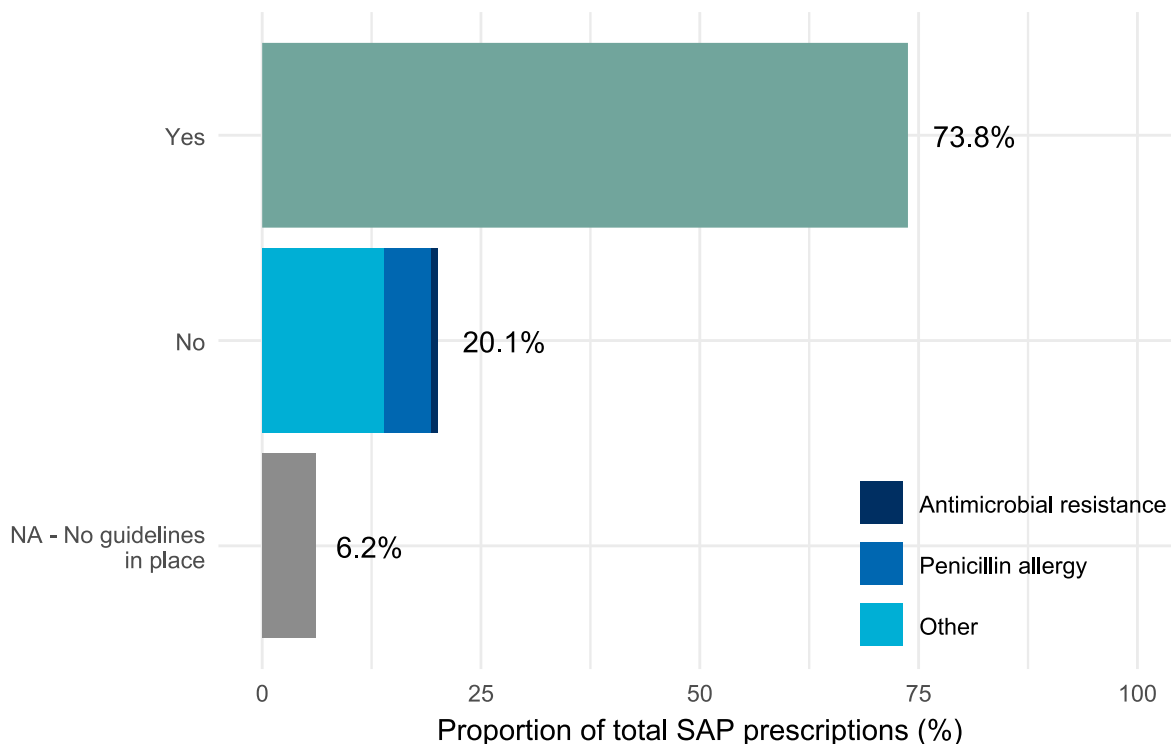


Figure 9 – First line choice of antibiotic regimen recommended in the local antibiotic prescribing guidelines.

6. Local SAP quality improvement and guidelines

- See Figure 10 for breakdown of responses to site specific questions.
- A selection of examples provided by sites of local quality improvement projects/ initiatives focussed on improving appropriateness of SAP duration is provided in Table A10.

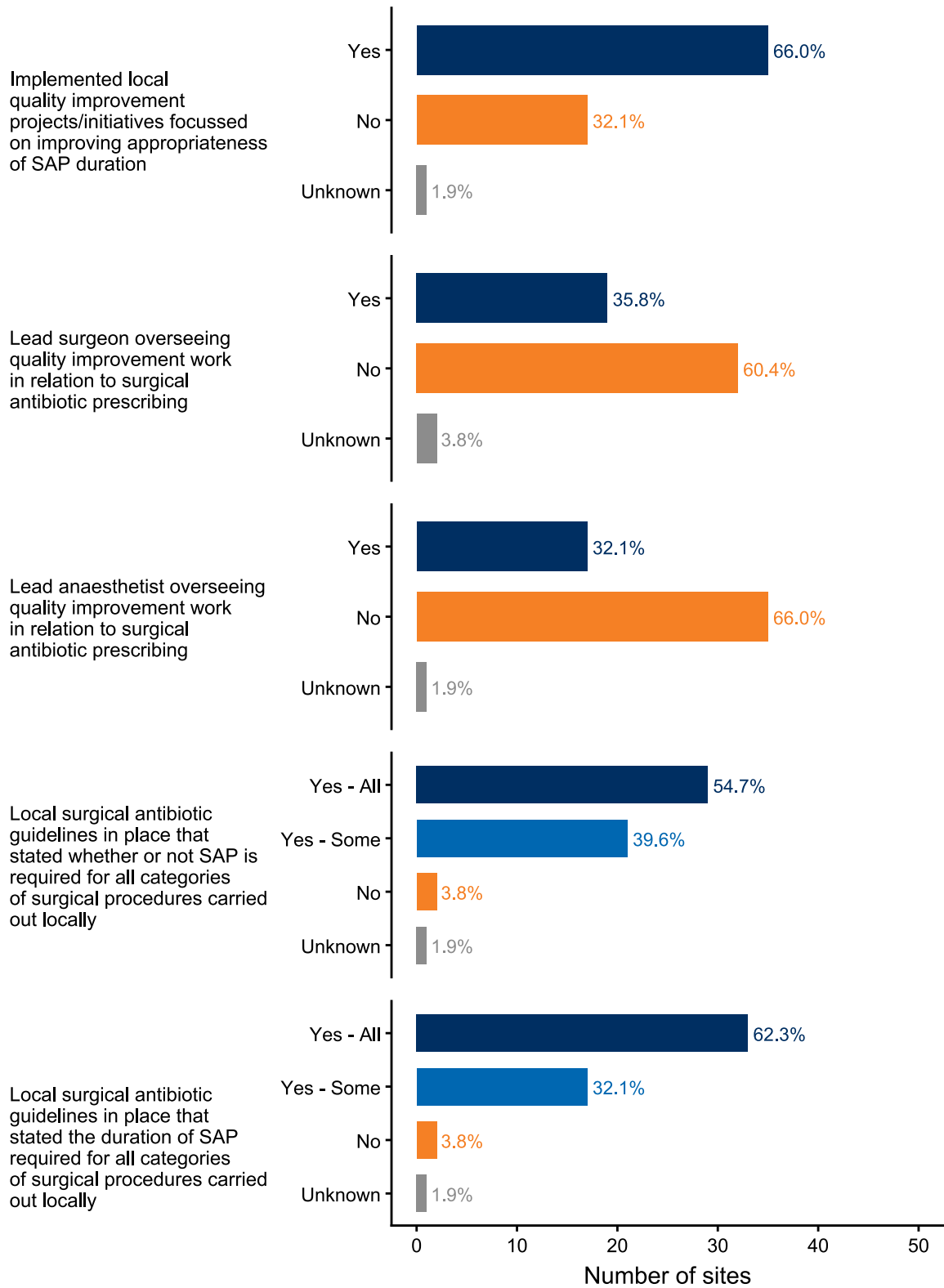


Figure 10 – Implementation of SAP quality improvement initiatives and guidelines. “Unknown” indicates sites that did not provide a response.

7. Discussion

7.1. Collective focus on SAP quality improvement at 53 acute hospitals across Ireland.

SAP constitutes an important component of multimodal strategies to prevent surgical site infection (SSI). It also contributes considerably to total antimicrobial consumption in acute hospitals and has been shown to be associated with increase in antimicrobial resistance.¹ Reduction of both the inappropriate use and the extended duration of SAP were identified as key areas for quality improvement in the National Antimicrobial PPS 2024.² The 2025 SAP tPPS aimed to focus collective efforts on SAP quality improvement across acute hospitals in Ireland. In comparison to the national antimicrobial PPS 2024 an increased number of hospitals participated, and an increased number of SAP prescriptions were reviewed. The dedication and commitment of staff in the 53 hospitals participating in this national work is acknowledged.

7.2. Most cases of SAP were required for operative procedure in accordance with local guidelines

Not all surgical procedures require SAP. In the 2025 SAP tPPS, the majority of SAP prescriptions were required (91.1%) for the surgical procedure according to local guidelines. It was noted that no local guideline was in place for 5.4% of SAP prescriptions. There remains an opportunity to improve comprehensive availability of local SAP prescribing guidelines for all surgical procedures.

7.3. Positive reduction in proportion of SAP extended beyond 24 hours

Positive progress on reducing the proportion of SAP extended beyond 24 hours in Irish acute hospitals was observed in the 2025 tPPS compared to 2024 national antimicrobial PPS.² Compliance with the national SAP position statement (published in 2021) is a key measure outlined in the HSE AMRIC action plan 2022-2025 and HSE AMRIC action plan 2026-2030.³⁻⁵ For 2025, this metric was measured using the SAP tPPS results. In 2024 national antimicrobial PPS, the proportion of SAP with duration of more than 24 hours was 26.0%. In the 2025 SAP tPPS the proportion of SAP with a duration of more than 24 hours was 16.8%, which was better than what would have been projected based on 2024 data.

Differences in the 2025 tPPS protocol (as outlined in the limitations section) may have contributed to this marked decrease in proportion and the finding should be interpreted with a degree of caution.⁶ In particular, it is noted that exclusion of ICU and HDU (more likely complex patients for whom SAP may be extended but patient numbers likely very low based on 2024 data) and exclusion of non-surgical wards in the 2025 SAP tPPS protocol may have skewed these results compared to previous years. An increase in participation of private hospitals (with potential for inclusion of more

elective surgeries) in 2025 was also noted. That said, the pooled SAP data from the 2025 tPPS captured a meaningful sample of SAP prescribing, with a total of 698 SAP prescriptions reviewed across 53 hospital sites (compared to 534 SAP prescriptions reviewed across 43 hospital sites in 2024). See Table A3 for further details.

2025 SAP tPPS data indicates continued progress in Ireland in improving the appropriate duration of SAP. However, there remains a need for ongoing collaborative focus to sustain and build on this progress, particularly in model 4 hospitals, where the highest burden of SAP extended beyond 24 hours is seen. It is acknowledged that variation in patient profile, sub-specialities and case mix (emergency versus elective) likely contribute to variation in this metric between hospital models.

7.4. Opportunity to focus quality improvement to reduce inappropriate extension of SAP based on local assessment

In the 2025 SAP tPPS, additional detailed data was collected on SAP prescriptions extended beyond the recommended maximum duration (according to local guidelines or HSE position statement if no local guidelines in place). Over one fifth of SAP prescriptions were extended beyond recommended maximum. A single dose of SAP is adequate for most surgical procedures.

Analysis of national SAP tPPS dataset indicated that the general surgery category may represent an area for focussed quality improvement. The general surgery category had a high volume of SAP prescriptions of inappropriate duration on the day of the tPPS, representing the 3rd highest total number of SAP prescriptions per surgical category with 33.8% of prescriptions extended beyond the recommended maximum duration. Interestingly, minimally invasive non-NHSN procedures represented a total of 63 prescriptions across multiple surgical categories and 22.2% of these were extended beyond the recommended maximum. Monitoring local trends in surgical procedures where SAP is extended beyond recommendations will assist in targeting local quality improvement efforts.

When a reason for extending SAP beyond the recommended maximum duration was given, most reasons documented were inappropriate - most were extended inappropriately with no clear rationale and a tenth were extended inappropriately with reason given as “drain in place”. The national position statement on SAP duration recommends that SAP should not be continued because drains remain in place. This represents a clear national standard for quality improvement.

There is a need for acute hospital surgical and antimicrobial stewardship teams to identify local trends and reasons for extending SAP beyond recommended durations and to target a reduction in the inappropriate extension of antimicrobial therapy. Exploration of local trends in surgical procedures and reasons for extension will

support and promote hospital level actions, such as audits and targeted education, to support local improvement.

7.5. Opportunity to promote appropriate documentation when SAP duration is extended

There was no documented reason for extension given in 22.7% of SAP prescriptions extended beyond the recommend maximum duration. Documentation is a key component of comprehensive patient care as it allows timely and accurate communication between healthcare professionals, while contributing to the safety and quality of patient care. If SAP is extended beyond the recommended maximum duration there should be a clear reason documented.

7.6. Three quarters of SAP prescriptions were recommended first line antibiotics

In the tPPS, three quarters of SAP prescriptions were for first line antibiotics as recommended in local guidelines. Penicillin allergy was cited as one of the most common reasons for use of second line agents (5.4%). Evidence suggests around 10% of patients carry a penicillin allergy label and in approximately 90% of those patients this diagnosis is incorrect.⁷ Patients labelled as penicillin allergic can have an increased risk of SSI, attributable to the receipt of second-line perioperative antibiotics.^{8,9} Clarification of penicillin allergy as part of routine preoperative care may reduce use of second line antimicrobials. Local exploration of reasons for use of second line regimens is required to tailor local quality improvement actions to optimise patient care.

7.7. Opportunity to promote and support local SAP quality improvement using a collaborative and multidisciplinary approach

Thirty-five sites reported having implemented local quality improvement projects/ initiatives focussed on improving appropriateness of SAP duration, recognising the need for ongoing monitoring and improvement. The significant impact this is having on improving the quality of patient care in Ireland and contribution to Ireland's high performance on this metric is acknowledged. Collaborative approaches to antimicrobial stewardship have consistently shown positive effects and often work better than individual efforts. Engagement of key stakeholders and leaders as part of a multidisciplinary approach is vital. It was reported in the SAP tPPS that 35.8% of hospitals had a lead surgeon and 32.1% of hospitals had an anaesthetist overseeing quality improvement work in relation to SAP. Surgeons and anaesthetists have a pivotal role in AMS, in particular due to prominent role in SAP usage and management of surgical infections. Establishment of a multidisciplinary antimicrobial management team, inclusive of surgeons and anaesthetists, who develop and implement a protocol of appropriate SAP with regular audit is an important modality recommended by ECDC

for hospitals across Europe.¹ Involvement of surgeons in AMS has been associated with high rates of acceptance of AMS recommendations.¹⁰ Surgeons can promote AMS by integrating best practice of antimicrobial use among surgeons and acting as AMS champions among colleagues.¹¹ There is opportunity to extend involvement in SAP quality improvement work using a collaborative and multidisciplinary approach. Building further engagement of multidisciplinary teams and clinical leadership has the potential to enhance team communication, strengthen shared learning and embed AMS culture.

7.8. Widespread existence of SAP prescribing guidelines across most hospital sites

The availability of comprehensive local SAP guidelines is of great importance in supporting informed decision-making regarding the appropriate use, or non-use, choice and duration of antibiotics at the time of surgery. 54.7% of sites reported having local surgical antibiotic guidelines in place that stated whether or not SAP is required for all categories of surgical procedures carried out locally. 62.3% of sites reported having local surgical antibiotic guidelines in place that stated the duration of SAP required for all categories of surgical procedures carried out locally. Many sites reported having local guidelines in place that covered these parameters in some but not all categories of surgical procedures carried out locally. Review of local SAP guidelines to ensure the comprehensive cover of all surgical procedures carried out locally is an action that has potential to drive further improvement in prescribing of SAP.

7.9. Key recommendations

Key antimicrobial stewardship areas for local improvement identified in the 2025 SAP tPPS:

- Ensure availability of comprehensive SAP prescribing guidelines on appropriate use, non-use, choice and duration of antibiotics for all surgical procedures conducted locally.
- Only prescribe SAP when stipulated as a requirement for the surgical procedure according to local guidelines
- Stop SAP at earliest recommended time. As stated in the HSE/National Clinical Programme for Surgery SAP duration position statement, if SAP is indicated for a surgical procedure, most patients only require a single dose.
- SAP should not be continued for the reason of drains remaining in place.
- If SAP is extended beyond maximum recommended duration, clear documentation of the reason for extension should be included.

- Local trends and reasons for extending SAP beyond maximum recommended duration set out in local guidelines should be explored so that the reduction of the inappropriate extension of antimicrobial therapies can be targeted.
- Use first line recommended agents, acknowledging patient specific factors, to decrease risk of SSI and patient harm. Local trends and reasons for second line choice of SAP regimen should be explored to optimise patient care.
- Engage a multidisciplinary and collaborative approach including surgical and anaesthetic leads to advance quality improvement efforts aimed at improving appropriate prescribing of SAP.
- Sustain and build on efforts to improve appropriate prescribing of SAP by implementing local quality improvement projects/ initiatives through local AMS governance structures and in collaboration with key stakeholders.
- The HSeLanD module on SAP should be completed by all who prescribe, dispense or administer SAP. This includes surgeons, anaesthetists, nurses, pharmacists and trainees of these disciplines.
- See [SAP resources on antibioticprescribing.ie](#).
- To address recommendations outlined in this report, the HSE National AMRIC team will:
 - Work with stakeholders, including healthcare professionals, senior leaders and healthcare managers, across the health regions to support collaboration and shared learning.
 - Build on the positive progress achieved to date and maintain a focus on the national position statement on SAP duration through continued collaboration with the National Clinical Programme for Surgery and the Royal College of Surgeons in Ireland, while establishing relationships with relevant speciality groups.

7.10. Limitations

There were 53 hospitals which agreed to participate in this tPPS. This self-selection may have led to a sample of hospitals which may not fully represent the national hospital or patient population. The discordance between this sample and the national population is unknown.

Point prevalence studies provide a snapshot of antimicrobial use at a particular point in time. It is acknowledged that variation in practice may arise depending on day selected for the study, surgical team present on that day, inpatient populations and other factors.

It should be noted that 2025 SAP tPPS protocol, participant selection and population differed from the national antimicrobial PPS. For 2025 SAP tPPS protocol only patients on surgical wards were included, while in national PPS 2024 patients on non-surgical wards who were on SAP were also included. As most acute post operative patients are on surgical wards, this difference may not be significant.

The ability to directly compare results from year to year (most notably the comparison of 2025 to other years because of the tPPS methodology) is limited because of changes over time to the inclusion criteria, methodology and number and distribution of participating hospitals.

7.11. Acknowledgements

We would like to acknowledge the work and input of:

- antimicrobial pharmacists and multidisciplinary antimicrobial stewardship teams in the acute hospitals across Ireland who participated in the 2025 SAP tPPS;
- members of clinical and surgical teams who assisted in data collection;
- antimicrobial pharmacists who piloted and provided feedback the protocol and data collection tool;
- colleagues in the HPSC in the analysis and coordination of ECDC Point Prevalence Survey of Hospital-Acquired Infections & Antimicrobial Use in European Acute Hospitals (2023, 2017, 2012, 2006) and previous coordination and analysis of the national antimicrobial PPS as this work/ report builds on that;
- members of the National Antimicrobial Consumption Subgroup to the development of the protocol, review and action plan based on the results of the survey.

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9. Appendix

Table A1 – Hospitals that participated in the 2025 SAP tPPS.

Hospital model	Hospital name
Model 2	South Infirmary Victoria University Hospital
	St. John's Hospital Limerick
	St. Michael's Hospital
Model 3	Cavan General Hospital
	Connolly Hospital
	Letterkenny University Hospital
	MRH Mullingar
	MRH Portlaoise
	MRH Tullamore
	Mayo University Hospital
	Mercy University Hospital
	Naas General Hospital
	Our Lady of Lourdes Hospital
	Our Lady's Hospital Navan
	Portiuncula University Hospital
	Sligo University Hospital
	St. Luke's General Hospital Kilkenny
	Tipperary University Hospital
UH Kerry	
Wexford General Hospital	
Model 4	Beaumont Hospital
	Cork University Hospital
	Mater Misericordiae University Hospital
	St. James's Hospital
	St. Vincent's University Hospital
	Tallaght University Hospital
	UH Limerick
UH Waterford	
Private	Beacon Hospital, Sandyford
	Blackrock Clinic
	Blackrock Health Galway Clinic
	Bon Secours Hospital, Cork
	Bon Secours Hospital, Galway
	Bon Secours Hospital, Glasnevin
	Bon Secours Hospital, Tralee
	Hermitage Medical Clinic, Lucan
	Mater Private Hospital, Cork
	Mater Private Hospital, Dublin
	St Vincent's Private Hospital
	UPMC Aut Even, Kilkenny
UPMC Sports Surgery Clinic, Dublin	
UPMC Whitfield, Waterford	

Hospital model	Hospital name
Specialist	CHI at Crumlin
	CHI at Temple Street
	Coombe Women and Infants University Hospital
	Cork University Maternity Hospital
	Croom Orthopaedic Hospital
	Kilcreene Regional Orthopaedic Hospital
	National Maternity Hospital
	National Orthopaedic Hospital Cappagh
	Rotunda Hospital
	Royal Victoria Eye and Ear Hospital
	UMH Limerick

Table A2 – SAP indicated for procedure in accordance with local guidelines, by surgical category and operative procedure.

Surgical category	Operative procedure	SAP indicated (n)	SAP not indicated (n)	No local guideline for this procedure (n)
Cardiac	Cardiac surgery	11	0	0
	Coronary artery bypass graft with both chest and donor site incisions	6	0	0
	Total	17	0	0
ENT & Maxillofacial	Minimally invasive non-NHSN procedure	5	0	0
	Neck surgery	9	1	0
	Other non-NHSN procedure	0	2	0
	Total	14	3	0
General	Appendix surgery	14	1	1
	Bile duct, liver or pancreatic surgery	4	1	0
	Breast surgery	16	0	1
	Colon surgery	11	0	0
	Gallbladder surgery	36	3	0
	Gastric surgery	8	0	0
	General-Abdominal Surgery	7	0	0
	Herniorrhaphy	24	3	2
	Minimally invasive non-NHSN procedure	2	0	1
	Other non-NHSN procedure	0	0	1
	Rectal surgery	4	0	0
	Small bowel surgery	4	0	0
	Thyroid and/or parathyroid surgery	1	3	0
	Total	131	11	6
Neurosurgery	Craniotomy	11	0	0
	Total	11	0	0
Obstetrics & Gynaecology	Abdominal hysterectomy	23	0	1
	Caesarean section	104	0	0
	Minimally invasive non-NHSN procedure	21	1	4

Surgical category	Operative procedure	SAP indicated (n)	SAP not indicated (n)	No local guideline for this procedure (n)
	Other non-NHSN procedure	4	0	2
	Ovarian surgery	4	1	4
	Vaginal hysterectomy	11	0	0
	Total	167	2	11
	Hip prosthesis	98	0	0
	Knee prosthesis	72	0	0
	Laminectomy	20	2	0
	Minimally invasive non-NHSN procedure	9	0	2
	Open reduction of fracture	28	1	1
Orthopaedics	Ortho-Upper limb surgery excl. open reduction	11	0	0
	Other non-NHSN procedure	1	1	0
	Refusion of spine	1	0	0
	Spinal fusion	18	0	1
	Total	258	4	4
Thoracic	Thoracic surgery	3	0	0
	Total	3	0	0
	Kidney surgery	5	0	3
	Minimally invasive non-NHSN procedure	6	3	6
Urology	Other non-NHSN procedure	9	0	3
	Prostate surgery	8	0	2
	Total	28	3	14
	Abdominal aortic aneurysm repair	2	0	0
	Carotid endarterectomy	1	0	1
Vascular	Limb amputation	1	0	0
	Minimally invasive non-NHSN procedure	0	1	2
	Peripheral vascular bypass surgery	3	0	0
	Total	7	1	3
Total		636	24	38

Table A3 – Historical trend in proportion of SAP extended beyond 24 hours from all PPS conducted by AMRIC.
*2025 results from the 2025 tPPS.

PPS year	Proportion of SAP prescribed for more than 24 hours (%)	Number of SAP prescribed for more than 24 hours (n)	Total number of SAP prescriptions (n)
2022	32.3	181	561
2024	26.0	139	534
2025*	16.8	117	698

Table A4 – Duration of SAP, by surgical category and operative procedure.

Surgical category	Operative procedure	Prescribed for more than 24 hours (n)	>1 dose but prescribed for 24 hours or less (n)	Single dose prescribed once only (n)
Cardiac	Cardiac surgery	3	8	0
	Coronary artery bypass graft with both chest and donor site incisions	2	4	0
	Total	5	12	0
ENT & Maxillofacial	Minimally invasive non-NHSN procedure	3	2	0
	Neck surgery	6	2	2
	Other non-NHSN procedure	2	0	0
	Total	11	4	2
General	Appendix surgery	3	7	6
	Bile duct, liver or pancreatic surgery	3	1	1
	Breast surgery	3	7	7
	Colon surgery	1	4	6
	Gallbladder surgery	3	7	29
	Gastric surgery	0	6	2
	General-Abdominal Surgery	1	5	1
	Herniorrhaphy	5	2	22
	Minimally invasive non-NHSN procedure	0	0	3
	Other non-NHSN procedure	1	0	0
	Rectal surgery	1	0	3
	Small bowel surgery	1	2	1
	Thyroid and/or parathyroid surgery	1	0	3
	Total	23	41	84
Neurosurgery	Craniotomy	6	3	2
	Total	6	3	2
Obstetrics & Gynaecology	Abdominal hysterectomy	1	3	20
	Caesarean section	4	2	98
	Minimally invasive non-NHSN procedure	2	5	19
	Other non-NHSN procedure	3	0	3
	Ovarian surgery	1	2	6
	Vaginal hysterectomy	6	0	5
	Total	17	12	151
Orthopaedics	Hip prosthesis	9	78	11
	Knee prosthesis	7	57	8
	Laminectomy	5	12	5

Surgical category	Operative procedure	Prescribed for more than 24 hours (n)	>1 dose but prescribed for 24 hours or less (n)	Single dose prescribed once only (n)
	Minimally invasive non-NHSN procedure	4	2	5
	Open reduction of fracture	3	25	2
	Ortho-Upper limb surgery excl. open reduction	0	5	6
	Other non-NHSN procedure	1	0	1
	Refusion of spine	0	1	0
	Spinal fusion	7	7	5
	Total	36	187	43
Thoracic	Thoracic surgery	0	2	1
	Total	0	2	1
Urology	Kidney surgery	3	0	5
	Minimally invasive non-NHSN procedure	1	0	14
	Other non-NHSN procedure	3	1	8
	Prostate surgery	5	0	5
	Total	12	1	32
Vascular	Abdominal aortic aneurysm repair	2	0	0
	Carotid endarterectomy	1	1	0
	Limb amputation	0	1	0
	Minimally invasive non-NHSN procedure	2	1	0
	Peripheral vascular bypass surgery	2	1	0
	Total	7	4	0
Total		117	266	315

Table A5 – SAP prescriptions extended beyond recommended maximum duration including reasons for extension.

SAP extended	Reason	n	%	Total (n)	Total (%)
Yes	Reason documented	116	77.3	150	21.5
	<i>Drain in place</i>	(15)	(10.0)		
	<i>No clear rationale</i>	(92)	(61.3)		
	<i>Other</i>	(9)	(6.0)		
	Reason not documented	34	22.7		
No				548	78.5

Table A6 – SAP beyond recommended maximum duration, by surgical category and operative procedure.

Surgical category	Operative procedure	Duration compliant with recommendations (n)	Duration non-compliant with recommendations (n)
Cardiac	Cardiac surgery	0	11
	Coronary artery bypass graft with both chest and donor site incisions	0	6
	Total	0	17
ENT & Maxillofacial	Minimally invasive non-NHSN procedure	3	2
	Neck surgery	6	4
	Other non-NHSN procedure	0	2
	Total	9	8
General	Appendix surgery	7	9
	Bile duct, liver or pancreatic surgery	3	2
	Breast surgery	4	13
	Colon surgery	1	10
	Gallbladder surgery	10	29
	Gastric surgery	6	2
	General-Abdominal Surgery	4	3
	Herniorrhaphy	9	20
	Minimally invasive non-NHSN procedure	0	3
	Other non-NHSN procedure	1	0
	Rectal surgery	1	3
	Small bowel surgery	3	1
	Thyroid and/or parathyroid surgery	1	3
Total	50	98	
Neurosurgery	Craniotomy	7	4
	Total	7	4
Obstetrics & Gynaecology	Abdominal hysterectomy	2	22
	Caesarean section	6	98
	Minimally invasive non-NHSN procedure	2	24
	Other non-NHSN procedure	3	3
	Ovarian surgery	3	6
	Vaginal hysterectomy	6	5
Total	22	158	
Orthopaedics	Hip prosthesis	10	88
	Knee prosthesis	8	64
	Laminectomy	6	16

Surgical category	Operative procedure	Duration compliant with recommendations (n)	Duration non-compliant with recommendations (n)
	Minimally invasive non-NHSN procedure	5	6
	Open reduction of fracture	4	26
	Ortho-Upper limb surgery excl. open reduction	0	11
	Other non-NHSN procedure	1	1
	Refusion of spine	0	1
	Spinal fusion	7	12
	Total	41	225
Thoracic	Thoracic surgery	0	3
	Total	0	3
Urology	Kidney surgery	3	5
	Minimally invasive non-NHSN procedure	2	13
	Other non-NHSN procedure	4	8
	Prostate surgery	5	5
	Total	14	31
Vascular	Abdominal aortic aneurysm repair	2	0
	Carotid endarterectomy	1	1
	Limb amputation	0	1
	Minimally invasive non-NHSN procedure	2	1
	Peripheral vascular bypass surgery	2	1
	Total	7	4
Total		150	548

Table A7 – SAP prescriptions extended beyond recommended maximum duration with no reason documented, by surgical category and operative procedure.

Surgical category	Operative procedure	Reason not documented (n)	Reason documented (n)
ENT & Maxillofacial	Minimally invasive non-NHSN procedure	2	1
	Neck surgery*	4	2
	Total	6	3
General	Appendix surgery	1	6
	Bile duct, liver or pancreatic surgery	0	3
	Breast surgery	1	3
	Colon surgery	1	0
	Gallbladder surgery	1	9
	Gastric surgery	0	6
	General-Abdominal Surgery	0	4
	Herniorrhaphy	4	5
	Other non-NHSN procedure	0	1
	Rectal surgery	1	0
	Small bowel surgery	0	3
	Thyroid and/or parathyroid surgery	1	0
Total	10	40	
Neurosurgery	Craniotomy	1	6
	Total	1	6
Obstetrics & Gynaecology	Abdominal hysterectomy	0	2
	Caesarean section	3	3
	Minimally invasive non-NHSN procedure	0	2
	Other non-NHSN procedure	0	3
	Ovarian surgery	2	1
	Vaginal hysterectomy	0	6
Total	5	17	
Orthopaedics	Hip prosthesis	3	7
	Knee prosthesis	0	8
	Laminectomy	1	5
	Minimally invasive non-NHSN procedure	0	5
	Open reduction of fracture	0	4
	Other non-NHSN procedure	0	1
	Spinal fusion	3	4
Total	7	34	
Urology	Kidney surgery	3	0
	Minimally invasive non-NHSN procedure	1	1
	Other non-NHSN procedure	1	3
	Prostate surgery	0	5
	Total	5	9
Vascular	Abdominal aortic aneurysm repair	0	2
	Carotid endarterectomy	0	1
	Minimally invasive non-NHSN procedure	0	2

Surgical category	Operative procedure	Reason not documented (n)	Reason documented (n)
	Peripheral vascular bypass surgery	0	2
	Total	0	7
Total		34	116

*N.B. As per national position statement the maximum duration of antibiotic prophylaxis can be extended to 48 hours for the following categories of surgical procedure: maxillofacial surgery, cardiac surgery, and head and neck surgery. These instances of appropriate extension have been marked with an asterisk.

Table A8 – SAP extended beyond maximum recommended duration with no clear rationale, by surgical category and operative procedure.

Surgical category	Operative procedure	Total (n)
ENT & Maxillofacial	Minimally invasive non-NHSN procedure	1
	Neck surgery	1
	Total	2
General	Appendix surgery	5
	Bile duct, liver or pancreatic surgery	1
	Breast surgery	2
	Gallbladder surgery	5
	Gastric surgery	6
	General-Abdominal Surgery	1
	Herniorrhaphy	4
	Other non-NHSN procedure	1
	Small bowel surgery	3
Total	28	
Neurosurgery	Craniotomy	6
	Total	6
Obstetrics & Gynaecology	Abdominal hysterectomy	2
	Caesarean section	2
	Minimally invasive non-NHSN procedure	2
	Other non-NHSN procedure	3
	Ovarian surgery	1
	Vaginal hysterectomy	6
Total	16	
Orthopaedics	Hip prosthesis	5
	Knee prosthesis	7
	Laminectomy	5
	Minimally invasive non-NHSN procedure	4
	Open reduction of fracture	4
	Other non-NHSN procedure	1
Spinal fusion	1	
Total	27	
Urology	Other non-NHSN procedure	3

Surgical category	Operative procedure	Total (n)
Vascular	Prostate surgery	5
	Total	8
	Abdominal aortic aneurysm repair	2
	Carotid endarterectomy	1
	Peripheral vascular bypass surgery	2
	Total	5
Total		92

Table A9 – “Other” reasons (provided for 9 prescriptions) for continuing the antimicrobials beyond 24 hours. (Note: Responses were free text, responses quoted directly.)

Reason	n
Abx given despite guidelines saying SAP not indicated	2
Antibiotics charted pre-operatively, intended to be stopped post-operatively but continued on the drug chart in error until the next day.	2
History of surgical site infection	1
Patient pulled clips out	1
Prolonged labour and post partum haemorrhage	1
planned 24 hour duration as per surgical note, but prescribed in treatment section of Kardex, inadvertently continued to be administered after 24 hours.	1
spiked	1

Table A10 – Sample of type of local quality improvement projects/initiatives implemented by sites. Text provided here unedited free text provided by site.

An audit of Surgical Antibiotic Prophylaxis was conducted for C-section patients in theatre. This would in turn impact the postnatal wards included in this audit. While we do not have a lead surgeon overseeing quality improvement in surgical antibiotic prescribing, the Infection Prevention and Control Team collects data on Surgical Site Infections and part of the audit is antibiotics given at the time of C-section.
A cycle of audits of SAP undertaken with initial audit in Nov 2023 to June 2024 and are audit in Jan to March 2025 across 9 surgical specialities. Results disseminated with feedback to all Surgical groups and wards audited then were also included in this current targeted SAP PPS Sep 2025. In addition to contacting all Surgical Teams further messaging on SAP was presented at the Monthly Surgical Morbidity and Mortality meeting. A message on recommended SAP duration was also circulated to all service users via an internal messaging app.
SAP guidelines were updated in summer 2025 and each surgical speciality were notified of any changes to their guideline. Ongoing QI project happening in ICU around penicillin hypersensitivity in SAP and SAP duration. Teaching sessions delivered by members of AMS team to ICU & interns re updated SAP guideline.
Our hospital has a well-established surgical site infection surveillance programme which incorporates regular audits on surgical prophylaxis, including QI initiatives where appropriate. We conduct quarterly surgical prophylaxis compliance audits, with feedback to all stakeholders and have surgical 'quick guide' posters displayed to ensure all staff have ready access to this information. Targeted education is provided where appropriate.
Dedicated section to Surgical Antimicrobial Prophylaxis (SAP) on the Kardex; labels to be attached "review duration"; developing surgical antimicrobial prophylaxis section on the Hospital Guidelines;



dissemination of HSE/AMRIC statement position paper on SAP through AMS posters and AMS Newsletters

Surgical antimicrobial prophylaxis audit completed in 2025, including measurement of SAP duration. Results of the audit were presented to the surgical directorate committee, at anaesthetic department journal club and at pharmacy department teaching. QI projects underway by surgical directorate working towards improving adherence to SAP guidelines. Local SAP empiric guidelines have been reviewed and are in the process of being updated, an education piece to the surgical directorate and pharmacy department will follow.

Separate section on drug Kardex for antimicrobial prophylaxis allowing max 3 doses

We did an in-depth urology SAP audit in June 2024. We spent the following twelve months feedback and educating on the results of the audit including presenting the results to Urologists at their Urology team meeting in the model 4 hospital.

2024: Audit, intervention and re-audit of SAP duration for uncomplicated appendicectomy, improvement in single dose SAP from 40% to 86%.

A Quality Improvement group was formed to improve local prescribing of surgical antibiotic prophylaxis. This group comprises a lead Surgeon, Surgical NCHD, Anaesthetist, Consultant Microbiologist, Antimicrobial Pharmacist, Nurse Manager and Quality Manager. A monthly audit of 10 patients within a single surgical speciality is undertaken using HSE AMRIC SAP Audit Tool. Feedback and education is subsequently provided by the AMS Pharmacist to all relevant stakeholders, (i.e. NCHD, Pharmacy and nursing colleagues). All the surgical wards included in the 2025 SAP tPPS were included in these monthly audits.

Annual PPS audit of SAP (all specialities) to assess appropriateness of choice, timing and duration. We also include accurate documentation of time of administration of SAP. Review of gentamicin and vancomycin doses to ensure as per guidelines. Results are fed back to the surgical specialities. Focussed review of SAP for colorectal and cardiothoracic surgery. SAP working group in place to oversee progress of projects.

Adherence with guidelines assessed quarterly as part of KPIs for AMS Programme. Prescriber feedback provided where variation between guidelines and observed practice is identified, along with reports for hospital leadership. Current audit includes these wards.