

VOL VI

Ciências da Saúde:

Investigação e Prática



Dr. Guillermo Julián González-Pérez
Dra. María Guadalupe Vega-López
(organizadores)

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PRÓLOGO

La salud contemporánea se configura como un campo de conocimiento, intervención y cuidado atravesado por múltiples dimensiones: biológicas, clínicas, sociales, éticas, tecnológicas, educativas e institucionales. En este sentido, el volumen ***Ciências da Saúde: Investigação e Prática VI*** reúne un conjunto de trabajos que permiten observar la amplitud y la complejidad de los desafíos actuales en el área sanitaria, articulando reflexiones conceptuales, estudios clínicos, análisis de prácticas profesionales y debates sobre la organización del cuidado, así como sobre los desafíos crecientes para la salud pública.

Los capítulos que integran esta obra evidencian que la investigación en ciencias de la salud no puede limitarse a una mirada exclusivamente biomédica. Si bien el diagnóstico, el tratamiento, la prevención y la seguridad terapéutica siguen ocupando un lugar central, los procesos de salud y enfermedad también exigen considerar las trayectorias de vida, la autonomía, los derechos, las condiciones sociales, la formación profesional, la comunicación clínica, la toma de decisiones y la calidad de los sistemas de registro, gestión e investigación. Esta perspectiva amplia permite comprender la salud como una experiencia compleja, situada y profundamente vinculada a los contextos en los que las personas viven, envejecen, enferman, se cuidan y son cuidadas.

La organización del volumen fue pensada a partir de una lógica progresiva, distribuida en tres ejes temáticos. El primero reúne reflexiones que abordan tópicos de salud pública desde una perspectiva integral, humanizada y transdisciplinaria, considerando temas como la violencia como problema de salud pública, el curso de vida, el curso de vida, el envejecimiento saludable, la autonomía, el cuerpo, la educación sexual integral y los derechos. Este conjunto de trabajos invita a pensar la salud más allá de la ausencia de enfermedad, reconociendo su relación con el entorno social, la capacidad funcional, la participación, la subjetividad, las decisiones informadas y las condiciones éticas y sociales que permiten una vida digna.

El segundo eje se aproxima a la práctica clínica, al diagnóstico oportuno y a la seguridad terapéutica. Los trabajos reunidos en esta sección destacan la importancia de la sospecha clínica, de la evaluación integral y de la actualización profesional frente a enfermedades que pueden presentar manifestaciones atípicas, diagnósticos tardíos o desafíos terapéuticos relevantes. Asimismo, se subraya la necesidad de fortalecer prácticas clínicas basadas en evidencia, capaces de reducir riesgos, evitar intervenciones innecesarias y mejorar la seguridad de los pacientes en distintos escenarios asistenciales.

El tercer eje se orienta hacia la investigación clínica, los registros, la gestión del cuidado y la formación profesional en salud. En este bloque, la obra pone de relieve la

importancia de los equipos de investigación, la calidad de los datos, la documentación clínica, los indicadores de desempeño, la profesionalización de funciones estratégicas y el desarrollo del razonamiento clínico en los procesos formativos. Estas discusiones son fundamentales para comprender cómo las instituciones sanitarias producen conocimiento, organizan prácticas, evalúan resultados y forman profesionales capaces de responder a demandas cada vez más complejas.

En conjunto, los trabajos aquí reunidos -de autores tanto europeos como latinoamericanos- muestran que investigar y practicar la salud implica un ejercicio permanente de integración. La atención sanitaria requiere conocimiento científico, sensibilidad ética, competencia técnica, capacidad reflexiva y compromiso con las personas y las comunidades. Al mismo tiempo, exige revisar críticamente los modelos de enseñanza, los sistemas de información, las decisiones clínicas y las políticas institucionales que orientan el cuidado en la vida cotidiana.

De este modo, ***Ciências da Saúde: Investigação e Prática VI*** propone una lectura que avanza desde una comprensión amplia y humanizada de la salud, pasa por los desafíos clínicos y diagnósticos, y culmina en la reflexión sobre las prácticas profesionales, investigativas e institucionales que sostienen la atención sanitaria contemporánea. Esperamos que este volumen contribuya al diálogo entre investigadores, docentes, profesionales y estudiantes del área de la salud, favoreciendo nuevas preguntas, nuevas prácticas y nuevas formas de pensar el cuidado, la formación y la investigación en salud.

Dr. Guillermo Julián González-Pérez

Dra. María Guadalupe Vega-López

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IS SHORTENED SURGICAL ANTIMICROBIAL PROPHYLAXIS THE NEW NORM?

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ABSTRACT: Surgical antimicrobial prophylaxis (SAP) is a major contributor to hospital antimicrobial use and an important universal target for antimicrobial stewardship (AMS). International guidance supports single-dose prophylaxis or discontinuation within 24 hours for most surgical procedures to reduce unnecessary antimicrobial exposure and antimicrobial resistance (AMR) risk. In 2021, Ireland introduced a national Surgical Antibiotic Prophylaxis Duration Position Paper reinforcing these principles; however, surgeons' perceptions toward shortened SAP remain incompletely understood. An opportunistic qualitative survey was therefore conducted among surgeons attending a national surgical conference to assess attitudes, knowledge, and prescribing behaviours relating to SAP duration and antimicrobial selection. Fifty-eight surgeons participated, including consultants (17%), registrars (57%), and senior house officers (26%), representing Gastro-intestinal/General Surgery (60%), Orthopaedics (17%), Urology (12%), and Vascular Surgery (10%). Despite only 5% being aware of the national position statement, acceptance of shortened SAP duration was high, with 83% reporting SAP duration of ≤ 24 hours in routine practice, including 17% favouring single-dose prophylaxis and 66% prescribing prophylaxis for 24 hours. Duration of prophylaxis was reportedly unaffected by the presence of surgical drains for 67% of respondents. Most surgeons (81%) reported reliance on local

antimicrobial guidelines or clinical microbiologist advice for antimicrobial selection. Concurrent metronidazole prescribing alongside co-amoxiclav or piperacillin-tazobactam was reported as routine practice by 31% of respondents. Overall, surgeons demonstrated favourable attitudes toward shortened SAP duration despite limited awareness of formal national guidance. These findings mirror improving institutional antimicrobial point prevalence survey metrics and suggest increasing integration of stewardship principles into surgical practice; however, optimisation of antimicrobial selection remains necessary, particularly regarding unnecessary anaerobic duplication.

KEYWORDS: antimicrobial prophylaxis; antimicrobial resistance; antimicrobial stewardship; surgical site infection; surgeons' perceptions.

1. INTRODUCTION

Surgical antimicrobial prophylaxis (SAP) is a well-established intervention for reducing surgical site infections (SSIs), yet prolonged postoperative antimicrobial use continues to contribute significantly to antimicrobial resistance (AMR), adverse drug events, *Clostridioides difficile* infection, and healthcare expenditure (Branch-Elliman et al., 2019; Bratzler et al., 2013; Clean Cut Investigators Group, 2024). Recommendations to administer SAP shortly before incision and discontinue prophylaxis within 24 hours are long established, appearing in major American Society of Health-System Pharmacists/ Infectious Diseases Society of America/Surgical Infection Society/Society for Healthcare Epidemiology of America (ASHP/IDSA/SIS/SHEA) and European Centre for Disease Prevention and Control (ECDC) guidance, and subsequently reinforced in World Health Organization SSI prevention guidance (*Acute Hospital Guidelines for Antibiotic Prescribing*, n.d.; *Global Guidelines for the Prevention of Surgical Site Infection*, n.d.; *National Clinical Programme for Surgery and HSE Agree Joint Position on Surgical Antibiotic Prophylaxis*, 2021; *Systematic Review and Evidence-Based Guidance on Peri-Operative Antibiotic Prophylaxis*, 2013; Bratzler et al., 2013). Accordingly, shortened SAP duration should not be regarded as a novel antimicrobial stewardship (AMS) intervention, but rather as an established evidence-based practice requiring continued reinforcement, audit, and engagement with surgical teams to ensure consistent implementation.

In Ireland, the 2021 Surgical Antibiotic Prophylaxis Duration Position Paper (SAP-PP) reinforced these AMS principles, stating that, “the maximum duration of antibiotic prophylaxis is the duration of the surgical procedure for the majority of surgical procedures,” while also emphasising that prophylaxis should not be prolonged solely because drains remain in situ. The SAP-PP additionally highlighted the important distinction between prophylaxis and treatment when infection becomes clinically suspected (*Acute Hospital*

Guidelines for Antibiotic Prescribing, n.d.; *National Clinical Programme for Surgery and HSE Agree Joint Position on Surgical Antibiotic Prophylaxis*, 2021).

These recommendations are supported by growing evidence demonstrating limited benefit from prolonged postoperative prophylaxis. A recent multicentre observational cohort study involving over 8,700 patients found that prolonged postoperative prophylaxis did not reduce SSI rates but was associated with increased hospital length of stay (Clean Cut Investigators Group, 2024). However, despite increasing international consensus, behavioural factors including fear of postoperative infection, local prescribing culture, and uncertainty regarding infection risk continue to influence SAP prescribing practices (Hassan et al., 2025).

Within our institution, improvement in SAP duration exceeding 24 hours was observed between the 2022 National Antimicrobial Point Prevalence Survey (PPS) (33%) and the 2023 ECDC antimicrobial PPS (18%) (*Acute Hospital Guidelines for Antibiotic Prescribing*, n.d.; European Centre for Disease Prevention and Control., 2024), suggesting increasing alignment with AMS recommendations. As implementation of AMS initiatives within surgical practice depends heavily on engagement from surgical teams themselves, it remained unclear whether these changes reflected genuine acceptance of shortened SAP duration among surgeons or were primarily driven by AMS-led interventions. This study therefore aimed to evaluate surgeons' attitudes, knowledge, and prescribing behaviours regarding SAP following introduction of national AMS guidance.

2. METHODS

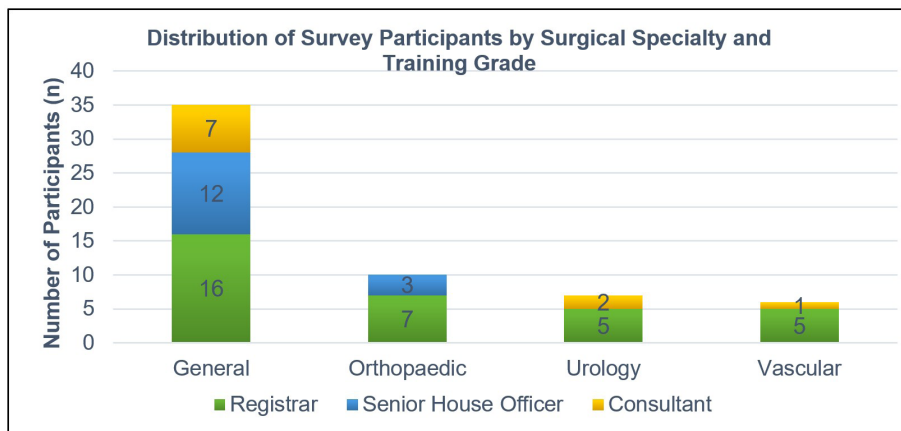
An opportunistic qualitative survey for antimicrobial prescribers was conducted during the 34th National Surgical Conference (*XXXIV Waterford Surgical October Meeting*, n.d.) on 12th October 2024 at Waterford, Republic of Ireland, to assess surgeons' perceptions toward SAP. Surgeons across multiple specialties including Gastro-intestinal/General Surgery, Orthopaedics, Urology, and Vascular Surgery were invited to participate. The survey explored awareness of the 2021 Irish SAP-PP (*Acute Hospital Guidelines for Antibiotic Prescribing*, n.d.), perceptions regarding shortened SAP duration, factors influencing prophylaxis duration, and antimicrobial prescribing practices. Responses were analysed descriptively.

3. RESULTS

A total of 58 surgeons participated in the survey. Respondents included consultants (17%), registrars (57%), and senior house officers (26%). Surgical specialties represented

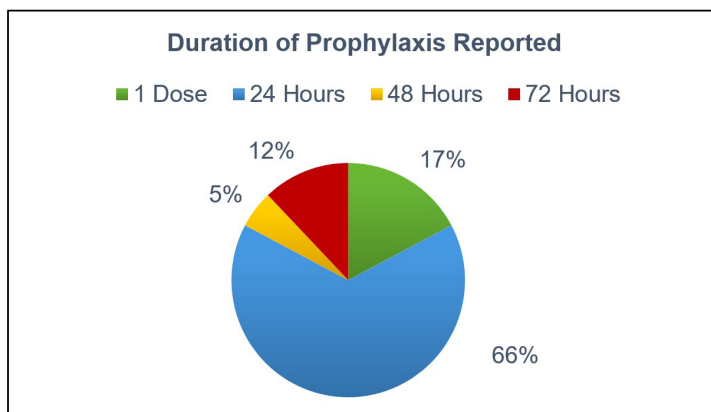
included Gastro-intestinal/General Surgery (60%), Orthopaedics (17%), Urology (12%), and Vascular Surgery (10%) (Figure 1).

Figure 1. Distribution of surveyed surgeons according to surgical specialty and training grade. Participants included consultants, registrars, and senior house officers from General Surgery, Orthopaedics, Urology, and Vascular Surgery.



Despite only 5% (3/58) reporting awareness of the SAP-PP, surgeons demonstrated favourable perceptions toward shortened SAP duration overall. Eighty-three percent (48/58) reported SAP duration of ≤ 24 hours in routine practice. Among these, 17% (10/58) favoured single-dose prophylaxis while 66% (38/58) prescribed prophylaxis for 24 hours. Only a minority reported durations extending beyond 24 hours (Figure 2).

Figure 2. Reported duration of surgical antimicrobial prophylaxis among surveyed surgeons. Most respondents reported prophylaxis durations of ≤ 24 hours, with 17% favouring single-dose prophylaxis and 66% prescribing prophylaxis for 24 hours. A minority reported extending prophylaxis to 48 or 72 hours.



The presence of surgical drains did not influence prophylaxis duration for 67% (39/58) of respondents, consistent with national recommendations that drains alone should not justify prolonged prophylaxis.

Most surgeons (81%; 47/58) reported that antimicrobial selection was guided by local antimicrobial guidelines or clinical microbiologist advice. However, areas for stewardship optimisation remained evident. Concurrent prescribing of metronidazole alongside co-amoxiclav or piperacillin-tazobactam was reported as routine practice by 31% (18/58) of respondents. An additional subgroup reported reserving concurrent metronidazole for infection specialist-directed therapy or abdominal perforation.

4. DISCUSSION

This study demonstrates encouraging acceptance of shortened SAP duration among surgeons in an Irish tertiary hospital despite limited awareness of formal national AMS guidance. Although only 5% of respondents were aware of the Irish SAP-PP, most surgeons reported prescribing practices aligned with both national and international recommendations advocating SAP discontinuation within 24 hours (*Acute Hospital Guidelines for Antibiotic Prescribing*, n.d.; Bratzler et al., 2013; European Centre for Disease Prevention and Control., 2024).

Importantly, these findings are congruent with recent institutional antimicrobial PPS data demonstrating improvement in prolonged SAP duration from 33% during the 2022 National Antimicrobial PPS to ≤ 10 % during the 2024 ECDC antimicrobial PPS and 2025 National Targeted PPS since the publication of national SAP-PP. This encouraging trend mirrors more recent national data from the 2025 targeted PPS for surgical antimicrobial prophylaxis, which reported that 16.8% of SAP prescriptions across 53 Irish acute hospitals extended beyond 24 hours, improving from 32.3% in 2022. (*Acute Hospital Guidelines for Antibiotic Prescribing*, n.d.).

The continued reinforcement of shortened SAP duration is particularly relevant within the context of national and international AMS priorities. The Irish Health Service Executive Antimicrobial Resistance and Infection Control (AMRIC) Action Plan 2022–2025 established a national target to reduce the proportion of SAP prescriptions extending beyond 24 hours from 28% in 2020 to 20% by 2025, highlighting SAP duration as an important stewardship quality metric within Irish acute hospitals (*HSE Antimicrobial Resistance Infection Control (AMRIC) Action Plan 2022-2025*, 2021). Similarly, the European Union Council Recommendation on AMR established a target to reduce total human antibiotic consumption by 20% by 2030 compared with 2019 levels, reinforcing the

importance of reducing unnecessary antimicrobial exposure across healthcare settings (*Antimicrobial Resistance - Public Health - European Commission*, 2026). Encouragingly, our institution achieved the national AMRIC target ahead of schedule, with prolonged SAP prescribing decreasing to $\leq 10\%$ by 2024. These findings suggest progressive integration of AMS principles into routine surgical practice despite limited formal awareness of the national SAP-PP.

The observation that SAP duration was unaffected by drains for most respondents is particularly notable given that prolonged prophylaxis in the presence of drains has historically represented a persistent AMS challenge. The Irish SAP-PP explicitly states that prophylaxis should not continue solely because drains remain in situ, reflecting concordance with ECDC and ASHP guidance (*Acute Hospital Guidelines for Antibiotic Prescribing*, n.d.; Bratzler et al., 2013; European Centre for Disease Prevention and Control., 2024).

Nevertheless, prescribing behaviours identified areas requiring further optimisation. Routine co-prescription of metronidazole alongside co-amoxiclav or piperacillin-tazobactam suggests persistent unnecessary anaerobic duplication. This likely reflects ongoing concern regarding intra-abdominal sepsis, defensive prescribing behaviour, or uncertainty surrounding spectrum adequacy. Similar behavioural drivers including fear of postoperative infection, hierarchical culture, and disagreement with guideline specificity have been described in qualitative studies examining surgeons' perceptions toward SAP internationally (Hassan et al., 2025).

The discrepancy between low awareness of the national SAP-PP and relatively high compliance with shortened SAP duration suggests that AMS interventions may exert influence indirectly through local prescribing culture, multidisciplinary collaboration, institutional guidelines, and clinical microbiologist engagement rather than through formal policy dissemination alone. The finding that 81% of surgeons relied on local guidelines or clinical microbiologist advice further supports the importance of collaborative AMS structures.

Sustaining these improvements will likely require continued behavioural engagement with surgical teams through regular feedback, multidisciplinary collaboration, and integration of stewardship into routine surgical governance. Empowering surgeons to self-audit SAP prescribing practices may further strengthen ownership of AMS initiatives and promote long-term behavioural change. Importantly, such audit activity should complement existing SSI surveillance programmes rather than function as a standalone stewardship metric, allowing SAP appropriateness and SSI outcomes to be interpreted together within a shared quality-improvement framework (Birgand et al., 2023; Leeds et al., 2017).

This study has limitations. Findings were self-reported and therefore susceptible to recall and social desirability bias. The survey was conducted at a single region and may not fully reflect national practice. Additionally, prescribing practices were not independently validated against patient-level prescribing data. Despite these limitations, this study provides valuable insight into current surgical AMS culture in Ireland and highlights surgeons' willingness to engage with evidence-based SAP optimisation and surveillance programme.

5. CONCLUSION

Surgeons demonstrated favourable perceptions toward shortened SAP duration despite limited awareness of formal national guidance. Self-reported SAP duration practices were concordant with improving institutional PPS metrics and contemporary international AMS recommendations. However, unnecessary anaerobic duplication remains an important target for optimisation. Sustained improvement in perioperative antimicrobial prescribing will require continued collaboration and empowerment of key stakeholders, including surgical teams, infection specialists, pharmacists, and AMS programmes, to support shared ownership of stewardship practices, audit, and quality improvement initiatives.

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