GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 9 (378) Сентябрь 2026

ТБИЛИСИ - NEW YORK



ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

GEORGIAN MEDICAL NEWS
NO 9 (378) 2026

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THIRTY-DAY INCIDENCE OF SURGICAL SITE INFECTION AND PERIOPERATIVE PROCESS COMPLIANCE IN A UNIVERSITY HOSPITAL DAY-SURGERY UNIT: A RETROSPECTIVE COHORT STUDY OF 200 PATIENTS

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Abstract.

Aim of study: To estimate 30-day surgical site infection (SSI) incidence after elective day surgery and assess perioperative prevention measures.

Material and methods: This retrospective cohort included 213 adults; 200 with documented day-30 follow-up formed the analytic cohort. Two blinded reviewers applied January 2026 CDC/NHSN criteria. Wilson confidence intervals, follow-up-group comparison and extreme-case sensitivity analyses were used.

Results: Three superficial incisional primary SSIs occurred (1.5%, 95% CI 0.5–4.3); all had purulent drainage and physician diagnosis. Incidence was 1.4% if none of the 13 patients without follow-up had SSI and 7.5% if all had SSI. Among antibiotic recipients, correct timing and guideline-consistent selection were documented in 97.9% and 98.6%. Aqueous 10% povidone-iodine was used in 95.0%; exposure time was unavailable.

Conclusions: Observed SSI incidence was low but sensitive to missing outcomes. Defined post-discharge follow-up, reproducible adjudication and complete documentation are essential for valid day-surgery surveillance.

Key words. Surgical site infection, day surgery, postoperative surveillance, antibiotic prophylaxis, skin antisepsis, cohort study.

Introduction.

Surgical site infection (SSI) is a major healthcare-associated infection. In a Swiss survey it accounted for 29.0% of healthcare-associated infections [1], while European surveillance reported procedure-specific rates of 0.5%–10.1% [2]. Rates also vary substantially by economic setting [3]. SSI prolongs hospital stay, increases reintervention and intensive-care use, and is associated with higher mortality [2,4].

Day surgery has meanwhile become the dominant mode of elective surgical care, accounting for more than 80% of elective procedures in many developed health systems [5,6]. This has displaced the postoperative period from the ward to the patient's home, and with it the point at which infection becomes apparent.

This shift creates a structural surveillance problem. A systematic review found that 60.1% of SSIs were identified after discharge [7], and ambulatory infections were detected at a median of 12 days [8]. Screening based only on subsequent hospitalisation had 36% sensitivity in one ambulatory cohort, and some postoperative encounters occurred at other institutions [8,9].

Published day-surgery SSI estimates range from approximately 0.5% in administrative data to 0.9% in a record-confirmed cohort [8,10]. Their interpretation depends on case mix, diagnostic criteria and post-discharge ascertainment; local surveillance is therefore needed for units combining minor cutaneous procedures with laparoscopic and hernia surgery.

Alongside incidence, the perioperative processes intended to prevent infection are measurable and modifiable. International guidance specifies the timing and duration of antimicrobial prophylaxis, the choice of skin antiseptic, the maintenance of normothermia and the control of perioperative blood glucose [6,11,12]. Documented adherence provides an interpretable account of local practice that does not depend on the number of infections observed, and remains actionable where events are too few for inferential analysis.

Aim.

The present study was undertaken to determine the 30-day cumulative incidence of surgical site infection among adults undergoing elective general surgical procedures in the day-surgery unit of a university hospital, using follow-up extending beyond the operative episode, and to describe adherence to perioperative infection-prevention measures in the same cohort.

Materials and Methods.

Study design and Setting:

This was a single-centre, retrospective observational cohort study conducted in the Day-Surgery Unit of a university-affiliated tertiary care hospital performing a broad spectrum of elective general surgical procedures under standardised perioperative protocols, reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement [13].

The records of all consecutive patients undergoing an eligible procedure between 17 December 2024 and 19 May 2026, a period of 17 months, were reviewed. Data were extracted from the hospital's electronic health record and the unit's operative documentation after institutional approval; no patient was approached and no data were collected prospectively.

Eligibility criteria:

Adults aged 18 years or older undergoing an elective general surgical procedure in the day-surgery unit, with a wound classified as clean (CDC class I) or clean-contaminated (CDC class II), were eligible for inclusion.

Records were excluded where the procedure was performed as an emergency or on an urgent basis; where the wound was contaminated (class III) or dirty-infected (class IV); where infection was already present at operation; where systemic chemotherapy had been given within the preceding four weeks; or where the operation was a reintervention for infection arising from a previous admission within the study period. Patients meeting the inclusion criteria but without a documented assessment at 30 days were retained in the description of the eligible population and excluded from the incidence denominator (Figure 1).

Outcome definition and ascertainment:

The primary outcome was a surgical site infection with a date of event within 30 days after the index procedure (procedure date = day 1), classified according to the January 2026 Centers for Disease Control and Prevention/National Healthcare Safety Network criteria [14]. Superficial incisional SSI required involvement of skin or subcutaneous tissue plus at least one qualifying criterion, including purulent drainage from the superficial incision or a diagnosis of superficial incisional SSI by a physician or physician designee. The phrase "wound not healed" was used only as a screening flag and was not sufficient for outcome classification. Three records contained this phrase; all three underwent detailed review and all three met the formal criteria. No other "wound not healed" records were identified.

Outcome ascertainment was part of routine postoperative care rather than a research-specific initiative. Patients were scheduled for wound review approximately two weeks after surgery and again on postoperative day 30; additional visits were arranged when dressing care was required, but events after day 30 were not counted. For the primary analysis, a documented day-30 wound assessment was required. No telephone follow-up was used. All 200 included patients had a documented routine postoperative clinical assessment, and the electronic health record was additionally reviewed for same-system emergency-department visits, readmissions, outpatient consultations, microbiology results and antibiotic prescriptions during the 30-day period. The dataset did not encode each encounter type as a separate patient-level source, so the number of patients supported by one source versus multiple sources could not be reconstructed. Records from primary care or other institutions were not available. Two reviewers independently applied the CDC/NHSN criteria to the three potential SSI cases; the second reviewer was blinded to perioperative process measures, and final classifications were agreed after adjudication.

Variables:

Patient-related variables comprised age, sex, body-mass index, smoking, diabetes, hypertension, chronic renal, respiratory and cardiovascular disease, immunosuppressive conditions and American Society of Anesthesiologists physical status. Age was analysed continuously and in three categories (<40, 40–59, ≥60 years), body-mass index continuously and in four (<18.5, 18.5–24.9, 25.0–29.9, ≥30.0 kg/m²), and operative duration continuously and in four (<30, 30–59, 60–119, ≥120 minutes). Other procedure-related variables were procedure type in nine groups, surgical approach, wound classification and type of anaesthesia.

Perioperative infection-prevention variables comprised normothermia, the skin antiseptic used, whether prophylaxis was prescribed and administered, timing (correct when given within 60 minutes before incision), consistency of the regimen with guidance, discontinuation within 24 hours, the agent used, and whether blood glucose was measured and within target [6,12]. The full variable list appears in Table I. Prior surgery, intraoperative complications and hair removal were missing in more than 45% of records and were excluded; all others were missing in fewer than 26%.

Statistical analysis:

No formal sample size calculation was performed; all eligible patients treated during the study period were included as a convenience sample, and achievable precision was determined by the number of infections. Primary analyses were performed in R version 4.6.0 (R Foundation for Statistical Computing, Vienna, Austria); the reviewer-requested follow-up comparison and sensitivity analyses were independently reproduced in Python 3.12 using pandas, SciPy and statsmodels. All tests were two-sided. Given the small number of events and the exploratory purpose of comparisons, p values were interpreted cautiously.

Continuous variables are reported as mean with standard deviation together with median and interquartile range, and categorical variables as counts and percentages. The 30-day cumulative incidence was calculated as the number of patients developing infection divided by those with complete 30-day follow-up, with a 95% confidence interval by the Wilson score method; patients without documented follow-up were excluded from this denominator (Figure 1).

The multivariable logistic regression specified in the protocol was not fitted: three infections occurred, far short of the approximately ten events per candidate predictor required for a stable model. Comparisons between patients with and without infection were therefore exploratory throughout, using Fisher's exact test with the Freeman–Halton extension for variables of more than two categories and the Mann–Whitney U test for continuous variables. The resulting p values are hypothesis-generating, carry no adjustment for multiple testing and do not establish independent association.

Missing values were not imputed; each variable was analysed among patients for whom it was recorded, with the denominator stated wherever missingness reduced it. To assess potential selection bias, the 13 patients without documented day-30 follow-up were compared with the 200-patient analytic cohort for age, sex, body-mass index, procedure type, recorded comorbidities, smoking and ASA physical status. Continuous variables were compared with the Mann–Whitney U test and described using absolute standardized mean differences (SMDs). Categorical variables were compared using Fisher exact tests, with 250,000 Monte Carlo replicates for variables with more than two categories; for multi-category variables, the largest absolute category-specific SMD was reported. Because the excluded group was small and some covariates were missing, balance was judged principally from SMDs rather than statistical significance. Two extreme-case sensitivity analyses were also performed: all 13 missing outcomes were first assumed to be non-SSI and then assumed to be SSI. Wilson 95% confidence intervals were calculated for both scenarios. Because fields recording timing, guideline consistency and discontinuation of prophylaxis had been completed for some patients in whom administration was not documented, these measures are reported both restricted to patients recorded as receiving prophylaxis, which is the primary presentation, and across all patients with each item recorded.

Ethical considerations:

The study was approved by the Institutional Review Board of Qassim University, Qassim, Saudi Arabia (no. 26-17-2, 19 April 2026). Because it involved retrospective review of anonymised routinely-collected records with no patient contact and no intervention, the requirement for individual informed consent

was waived by the approving committee. Data were extracted in a single pass on 10 August 2026, following approval, de-identified at the point of extraction and held on institutional secure storage. The study was conducted in accordance with the Declaration of Helsinki.

Results.

Participant flow:

Records were available for 213 patients who underwent an elective procedure during the study period. Thirteen (6.1%) had no documented 30-day follow-up and were excluded from the incidence denominator, giving a follow-up completeness of 93.9%; the analytic cohort therefore comprised 200 patients (Figure 1).

Follow-up completeness and sensitivity analyses:

The characteristics of the 13 patients without a documented day-30 assessment were compared with those of the 200-patient analytic cohort (Table II). Age was closely similar between groups. However, the excluded group contained proportionally more men and showed imbalances in body-mass index, procedure mix, recorded comorbidity, smoking and ASA status. Missing values for diabetes, hypertension, smoking and ASA status were more frequent among excluded patients. Exact and rank-based tests did not identify statistically significant differences, but the small excluded group limited their power; the SMDs indicate that selection bias cannot be excluded.

In the best-case sensitivity analysis, assuming that none of the 13 patients without documented follow-up developed SSI, the incidence among all 213 eligible patients was 1.4% (3/213; Wilson 95% CI 0.5–4.1). In the worst-case analysis, assuming that all 13 developed SSI, the incidence was 7.5% (16/213; 95% CI 4.7–11.9) (Table III). These scenarios define extreme bounds rather than probable estimates.

Thirty-day cumulative incidence of surgical site infection:

Three of the 200 patients with documented day-30 follow-up developed a surgical site infection within the 30-day surveillance period, a cumulative incidence of 1.5% (Wilson 95% CI 0.5–4.3) (Fig. 2). All three were identified after discharge, and the wound assessment recorded before discharge was clean in all 200 patients (100%); surveillance limited to the day-surgery episode would therefore have returned an infection rate of zero.

Baseline patient characteristics:

Mean age was 37.0 years (SD 13.6), median 35.5 (IQR 25.0–47.0, range 18–83); 114 patients were younger than 40 years (57.0%), 73 were 40–59 (36.5%) and 13 were 60 or older (6.5%). There were 102 women (51.0%) and 98 men (49.0%). Mean body-mass index was 27.6 kg/m² (SD 5.6), median 26.8 (IQR 23.8–31.1, range 15.0–47.9), with 8 patients underweight (4.0%), 64 of normal weight, 64 overweight and 64 obese (32.0% each). Eighty-five patients (42.5%) were current smokers (Figure 3).

Thirty-nine patients (19.5%) had diabetes and 6 (3.0%) prediabetes; hypertension was present in 37 of the 199 with this field recorded (18.6%). No patient had chronic renal, respiratory or cardiovascular disease or a recorded immunosuppressive condition. ASA physical status was I in 115 of 199 (57.8%), II in 78 (39.2%) and III in 6 (3.0%). Table I gives the full baseline profile.

Three variables were missing in more than 45% of records and were not analysed: prior surgery (99, 49.5%), intraoperative complications (92, 46.0%) and hair removal (98, 49.0%). Every other variable was missing in fewer than 26%.

Procedural characteristics:

Nine procedure groups were represented (Figure 4): skin and soft-tissue excision in 55 patients (27.5%), cholecystectomy in 50 (25.0%), pilonidal sinus surgery in 21 (10.5%), inguinal hernia repair in 18 (9.0%), perianal procedures in 17 (8.5%), breast surgery in 16 (8.0%), ingrowing toenail surgery in 12 (6.0%), other hernia repair in 10 (5.0%) and fundoplication in 1 (0.5%). Sixty-six procedures were laparoscopic (33.0%) and 134 open (67.0%). Wounds were evenly divided between CDC class I (100, 50.0%) and class II (100, 50.0%), with no class III or IV wound.

Mean operative duration was 48.6 min (SD 34.7), median 44.5 (IQR 18.0–72.2, range 4–182) (Figure 5); 87 procedures lasted less than 30 min (43.5%), 40 lasted 30–59 min (20.0%), 65 lasted 60–119 min (32.5%) and 8 lasted 120 min or longer (4.0%). General anaesthesia was used in 94 patients (47.0%), local in 62 (31.0%), spinal in 43 (21.5%) and sedation in 1 (0.5%).

Perioperative care and antibiotic prophylaxis:

Normothermia was documented in all 200 patients (100%). Skin antisepsis was performed with aqueous 10% povidone-iodine in 190 (95.0%), chlorhexidine in 7 (3.5%), alcohol alone in 1 (0.5%), DuraPrep in 1 (0.5%), and combined chlorhexidine plus povidone-iodine in 1 (0.5%). The duration of povidone-iodine application or drying/contact time was not recorded; compliance with product-specific exposure-time recommendations therefore could not be assessed.

A prophylactic antibiotic was prescribed in 142 of the 198 patients with the field recorded (71.7%) and administered in 141 of 196 (71.9%). Among the 141 patients who received prophylaxis, timing was correct in 137 of the 140 with timing recorded (97.9%), the regimen was guideline-consistent in 138 of 140 (98.6%) and prophylaxis was discontinued within 24 h in 131 of 138 (94.9%). Cefazolin was the agent in 148 of the 149 patients with an agent recorded (99.3%) and clindamycin in 1 (0.7%). Blood glucose was documented as measured and within the target range in 75 of 192 patients (39.1%).

For three items the denominator exceeded the number who received prophylaxis, because the timing, guideline-consistency and discontinuation fields had been completed for some patients in whom administration was not documented. Calculated across all patients with each item recorded, timing was correct in 143 of 161 (88.8%), the regimen guideline-consistent in 144 of 161 (89.4%) and prophylaxis discontinued within 24 h in 135 of 155 (87.1%) (Figure 6); the restricted estimates above are the primary compliance figures.

The three infected patients:

All three patients were aged 25 years or younger and had open procedures lasting 30 minutes or less under spinal or local anaesthesia. A 25-year-old woman underwent open pilonidal

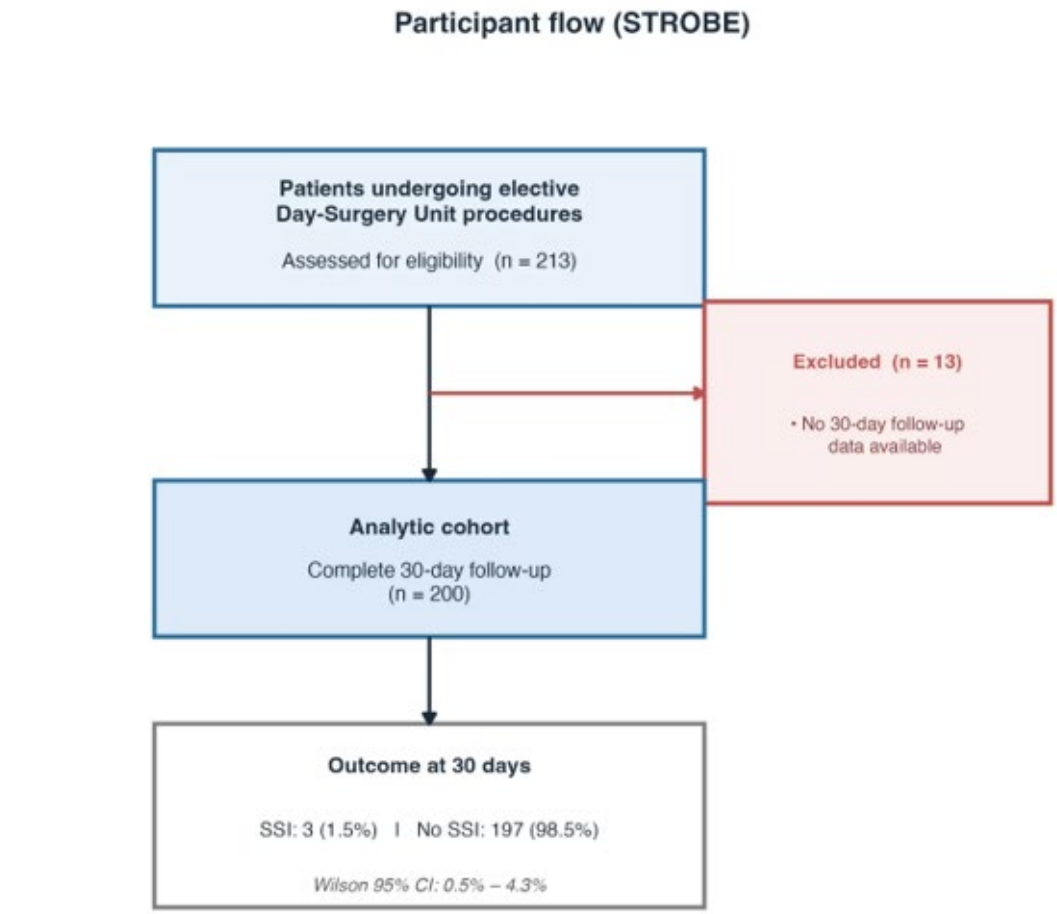


Figure 1. *Participant flow.*

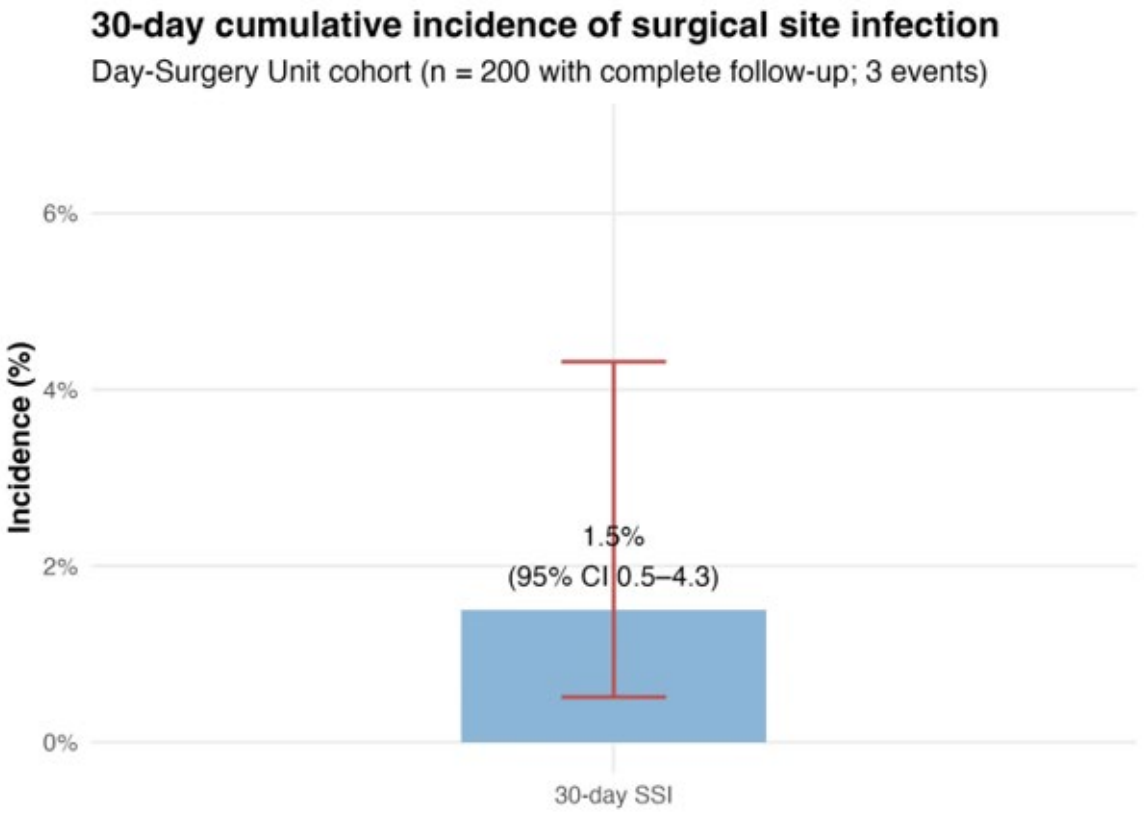


Figure 2. *Thirty-day cumulative incidence of surgical site infection in the analytic cohort (n = 200). The error bar shows the Wilson 95% confidence interval.*

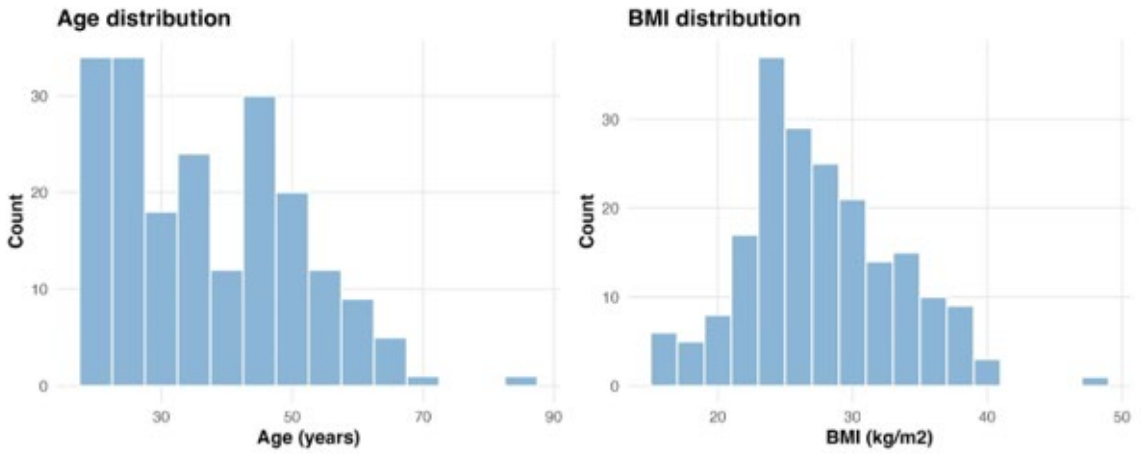


Figure 3. *Distribution of age in 5-year bins (a) and of body-mass index in 2 kg/m² bins (b) in the analytic cohort (n = 200).*

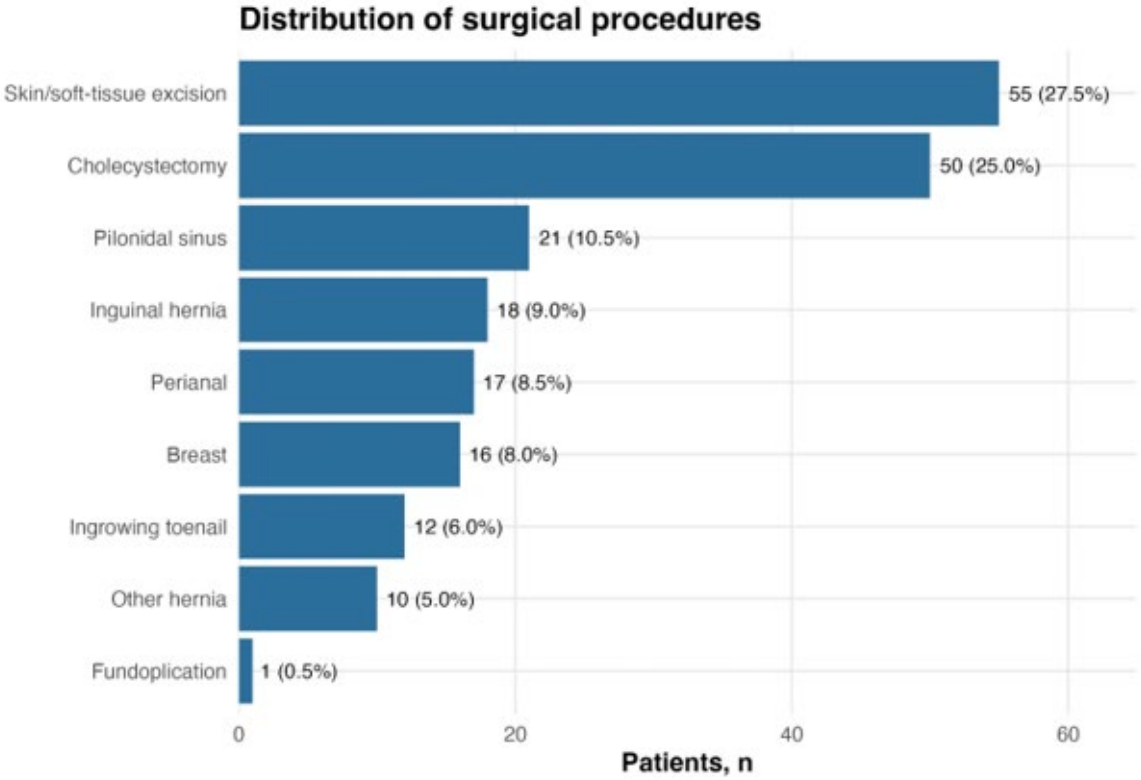


Figure 4. *Distribution of the 200 procedures across the nine procedure groups.*

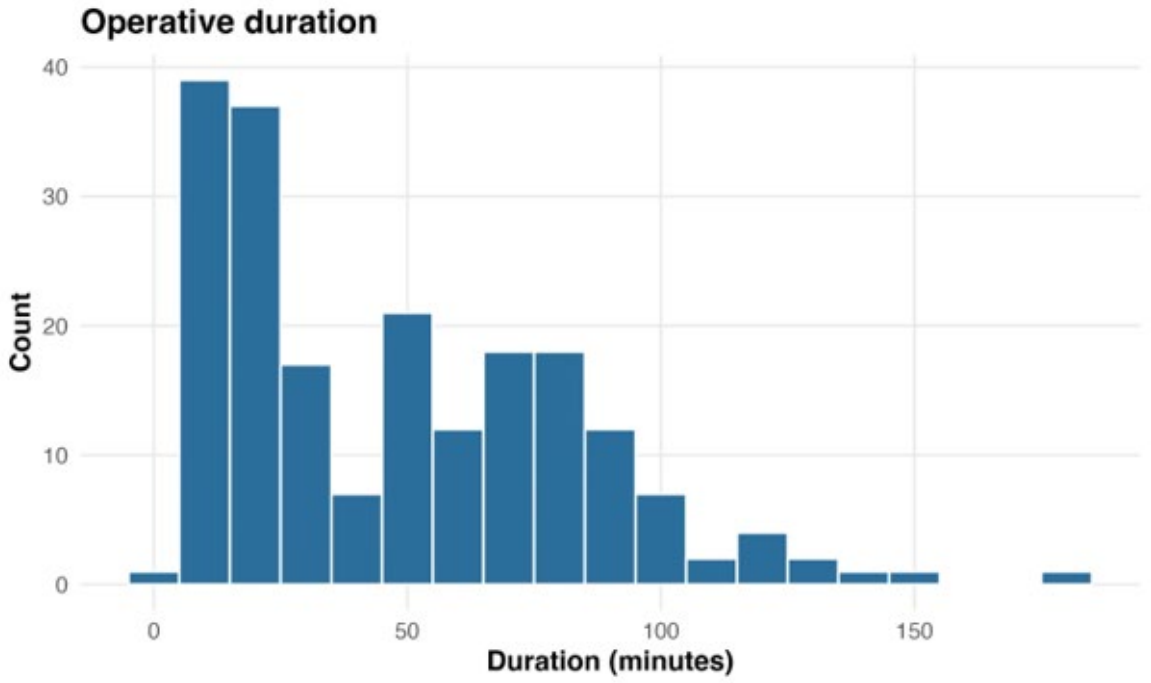


Figure 5. *Distribution of operative duration in 10-minute bins in the analytic cohort (n = 200).*

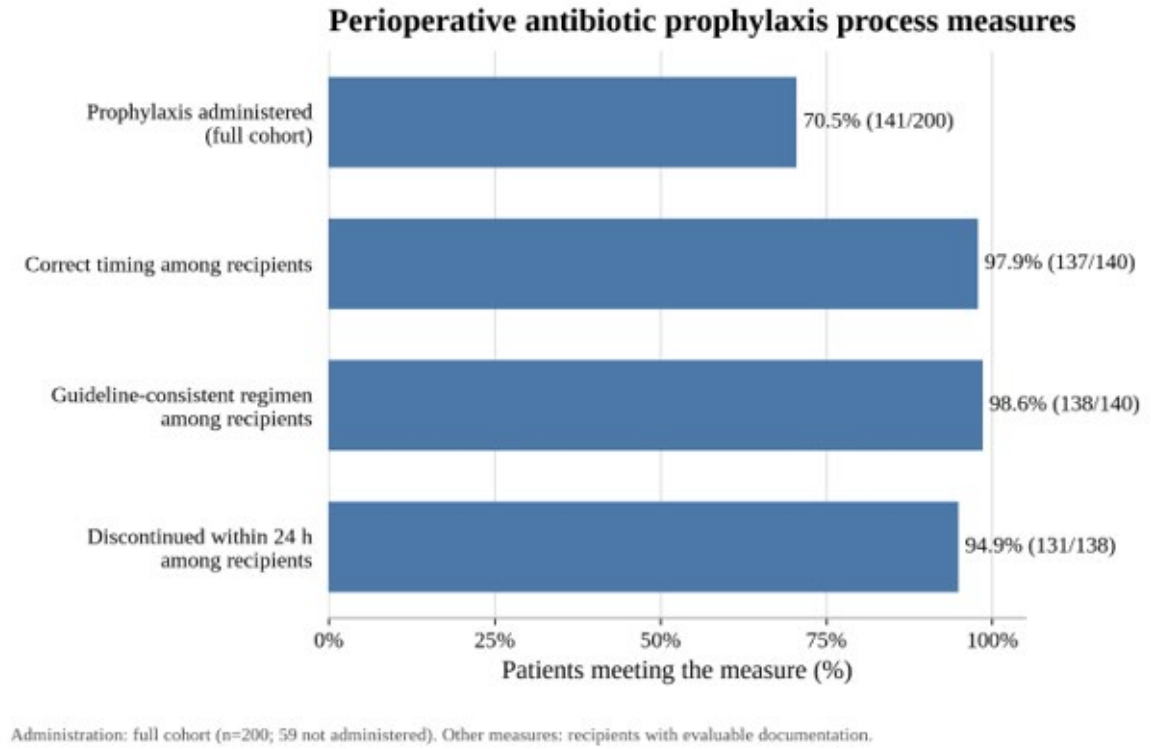


Figure 6. *Perioperative antibiotic prophylaxis process measures, shown as the percentage compliant among patients in whom each item was recorded.*

Table 1. *Baseline demographic, clinical, procedural and perioperative characteristics of the analytic cohort, overall and by 30-day surgical site infection status.*

Characteristic	Total (N = 200)	No SSI (n = 197)	SSI (n = 3)	p-value
Demographic characteristics				
Age, years				0.057
Mean (SD)	37.0 (13.6)	37.2 (13.5)	23.0 (3.5)	
Median [IQR]	35.5 [25.0–47.0]	36.0 [25.0–47.0]	25.0 [22.0–25.0]	
Age group, n (%)				0.414
<40	114 (57.0)	111 (56.3)	3 (100)	
40–59	73 (36.5)	73 (37.1)	0 (0)	
≥60	13 (6.5)	13 (6.6)	0 (0)	
Sex, n (%)				1.000
Male	98 (49.0)	97 (49.2)	1 (33.3)	
Female	102 (51.0)	100 (50.8)	2 (66.7)	
BMI, kg/m²				0.560
Mean (SD)	27.6 (5.6)	27.7 (5.6)	24.7 (9.4)	
Median [IQR]	26.8 [23.8–31.1]	26.8 [23.9–31.1]	24.9 [20.0–29.4]	
BMI category, n (%)				0.115
Underweight (<18.5)	8 (4.0)	7 (3.6)	1 (33.3)	
Normal (18.5–24.9)	64 (32.0)	63 (32.0)	1 (33.3)	
Overweight (25–29.9)	64 (32.0)	64 (32.5)	0 (0)	
Obese (≥30)	64 (32.0)	63 (32.0)	1 (33.3)	
Smoker, n (%)	85 (42.5)	84 (42.6)	1 (33.3)	1.000
Comorbidities				
Diabetes status, n (%)				1.000
None	155 (77.5)	152 (77.2)	3 (100)	
Prediabetes	6 (3.0)	6 (3.0)	0 (0)	
Diabetes	39 (19.5)	39 (19.8)	0 (0)	
Hypertension, n (%)[a]	37 (18.6)	37 (18.9)	0 (0)	1.000
Renal, respiratory, cardiovascular or immunosuppressive comorbidity, n (%)[b]	0 (0)	0 (0)	0 (0)	—
ASA physical status, n (%)[c]				1.000
ASA I	115 (57.8)	113 (57.7)	2 (66.7)	
ASA II	78 (39.2)	77 (39.3)	1 (33.3)	
ASA III	6 (3.0)	6 (3.1)	0 (0)	
Procedure characteristics				
Procedure type, n (%)				0.023
Skin/soft-tissue excision	55 (27.5)	55 (27.9)	0 (0)	
Cholecystectomy	50 (25.0)	50 (25.4)	0 (0)	
Pilonidal sinus	21 (10.5)	20 (10.2)	1 (33.3)	
Inguinal hernia	18 (9.0)	18 (9.1)	0 (0)	
Perianal	17 (8.5)	17 (8.6)	0 (0)	
Breast	16 (8.0)	16 (8.1)	0 (0)	
Ingrowing toenail	12 (6.0)	10 (5.1)	2 (66.7)	
Other hernia	10 (5.0)	10 (5.1)	0 (0)	
Fundoplication	1 (0.5)	1 (0.5)	0 (0)	
Laparoscopic approach, n (%)	66 (33.0)	66 (33.5)	0 (0)	0.552
Wound class II (clean-contaminated), n (%)	100 (50.0)	99 (50.3)	1 (33.3)	1.000
Operative duration, min				0.039
Mean (SD)	48.6 (34.7)	49.1 (34.7)	15.0 (13.1)	
Median [IQR]	44.5 [18.0–72.2]	46.0 [18.0–73.0]	9.0 [7.5–19.5]	
Duration category, n (%)				0.506
<30	87 (43.5)	85 (43.1)	2 (66.7)	
30–59	40 (20.0)	39 (19.8)	1 (33.3)	
60–119	65 (32.5)	65 (33.0)	0 (0)	
≥120	8 (4.0)	8 (4.1)	0 (0)	
Anaesthesia type, n (%)				0.157
General	94 (47.0)	94 (47.7)	0 (0)	

Spinal	43 (21.5)	42 (21.3)	1 (33.3)	
Local	62 (31.0)	60 (30.5)	2 (66.7)	
Sedation	1 (0.5)	1 (0.5)	0 (0)	
Perioperative care and antibiotic prophylaxis				
Normothermia maintained, n (%)	200 (100)	197 (100)	3 (100)	—
Skin antisepsis, n (%)				0.142
Povidone-iodine	190 (95.0)	188 (95.4)	2 (66.7)	
Chlorhexidine	7 (3.5)	6 (3.0)	1 (33.3)	
Other (combination or alcohol-based)	3 (1.5)	3 (1.5)	0 (0)	
Prophylactic antibiotic prescribed, n (%)[d]	142 (71.7)	140 (71.8)	2 (66.7)	1.000
Antibiotic given, n (%)[e]	141 (71.9)	139 (72.0)	2 (66.7)	1.000
Correct timing (≤1 h), n (%)[f]	143 (88.8)	141 (89.2)	2 (66.7)	0.301
Guideline-consistent prophylaxis, n (%)[f]	144 (89.4)	142 (89.9)	2 (66.7)	0.286
Discontinued within 24 h, n (%)[g]	135 (87.1)	133 (87.5)	2 (66.7)	0.341
Antibiotic agent cefazolin, n (%)[h]	148 (99.3)	146 (99.3)	2 (100)	1.000
Blood glucose measured and in range, n (%)[i]	75 (39.1)	74 (39.2)	1 (33.3)	1.000

Data are n (%) unless otherwise stated. Percentages are calculated among patients in whom the variable was recorded; where missing data reduced the denominator, the number assessed is given below for each column.

[a] Assessed in 199 patients (196 no SSI, 3 SSI).

[b] Comprises chronic renal disease, chronic obstructive pulmonary disease, cardiovascular disease and recorded immunosuppressive conditions; no patient had any of these.

[c] Assessed in 199 patients (196 no SSI, 3 SSI).

[d] Recorded in 198 patients (195 no SSI, 3 SSI).

[e] Recorded in 196 patients (193 no SSI, 3 SSI).

[f] Recorded in 161 patients (158 no SSI, 3 SSI). Restricted to the 141 patients who received prophylaxis, timing was correct in 137 of 140 (97.9%) and the regimen was guideline-consistent in 138 of 140 (98.6%).

[g] Recorded in 155 patients (152 no SSI, 3 SSI). Restricted to patients who received prophylaxis, 131 of 138 (94.9%).

[h] Recorded in 149 patients (147 no SSI, 2 SSI).

[i] Recorded in 192 patients (189 no SSI, 3 SSI).

SSI was defined per the study protocol as a wound not healed at 30-day follow-up, applying CDC/NHSN criteria. p-values are from Fisher's exact test (Freeman–Halton extension for variables with more than two categories) for categorical variables and the Mann–Whitney U test for continuous variables. They are exploratory and unadjusted for multiple comparisons.

Abbreviations: *ASA – American Society of Anesthesiologists; BMI – Body-Mass Index; IQR – Interquartile Range; SD – Standard Deviation; SSI – Surgical Site Infection.*

Table 2. *Comparison of patients with and without documented 30-day follow-up. Continuous variables are reported as mean (standard deviation) and median [interquartile range]. Categorical percentages use available-case denominators. Absolute standardized mean differences quantify imbalance.*

Characteristic	**Analytic cohort (n=200)**	**No documented follow-up (n=13)**	**p-value**	**Absolute SMD**
Age, years	37.0 (13.6); median 35.5 [25.0–47.0]	36.8 (14.2); median 34.0 [24.0–40.0]	0.891	0.017
BMI, kg/m²	27.6 (5.6); median 26.8 [23.8–31.1]	28.8 (4.7); median 28.9 [26.4–31.6]	0.326	0.225
Sex, n (%)			0.408	0.254
Female	102/200 (51.0%)	5/13 (38.5%)		
Male	98/200 (49.0%)	8/13 (61.5%)		
Procedure type, n (%)			0.371	0.484
Skin/soft-tissue excision	55/200 (27.5%)	5/13 (38.5%)		
Cholecystectomy	50/200 (25.0%)	3/13 (23.1%)		
Pilonidal sinus	21/200 (10.5%)	0/13 (0.0%)		
Inguinal hernia	18/200 (9.0%)	1/13 (7.7%)		
Perianal	17/200 (8.5%)	0/13 (0.0%)		
Breast	16/200 (8.0%)	0/13 (0.0%)		
Ingrowing toenail	12/200 (6.0%)	2/13 (15.4%)		
Other hernia	10/200 (5.0%)	2/13 (15.4%)		
Fundoplication	1/200 (0.5%)	0/13 (0.0%)		
Any recorded comorbidity, n (%)			0.443	0.427
No	141/200 (70.5%)	7/8 (87.5%)		
Yes	59/200 (29.5%)	1/8 (12.5%)		
Missing	0/200 (0.0%)	5/13 (38.5%)		

Diabetes status, n (%)			0.771	0.344
None	155/200 (77.5%)	9/10 (90.0%)		
Prediabetes	6/200 (3.0%)	0/10 (0.0%)		
Diabetes	39/200 (19.5%)	1/10 (10.0%)		
Missing	0/200 (0.0%)	3/13 (23.1%)		
Hypertension, n (%)			1	0.212
No	162/199 (81.4%)	8/9 (88.9%)		
Yes	37/199 (18.6%)	1/9 (11.1%)		
Missing	1/200 (0.5%)	4/13 (30.8%)		
Other major comorbidity, n (%)				0
No	200/200 (100.0%)	13/13 (100.0%)		
Yes	0/200 (0.0%)	0/13 (0.0%)		
Current smoking, n (%)			0.243	0.611
No	115/200 (57.5%)	2/7 (28.6%)		
Yes	85/200 (42.5%)	5/7 (71.4%)		
Missing	0/200 (0.0%)	6/13 (46.2%)		
ASA physical status, n (%)			0.561	0.371
ASA I	115/199 (57.8%)	9/12 (75.0%)		
ASA II	78/199 (39.2%)	3/12 (25.0%)		
ASA III	6/199 (3.0%)	0/12 (0.0%)		
Missing	1/200 (0.5%)	1/13 (7.7%)		

Notes: *Continuous variables are mean (SD); median [IQR]. Categorical percentages use available-case denominators. "Any recorded comorbidity" includes prediabetes/diabetes, hypertension, chronic renal disease, COPD, cardiovascular disease, or an immunosuppressive condition. P values are from Mann–Whitney U tests for continuous variables and Fisher exact tests (Monte Carlo extension for multi-category variables) for categorical variables. For multi-category variables, the reported absolute SMD is the largest category-specific absolute SMD. Missing values are displayed but excluded from tests and SMDs.*

Table 3. *Extreme-case sensitivity analysis for missing 30-day surgical site infection outcomes. The best-case scenario assumes that none of the 13 patients without documented follow-up developed SSI; the worst-case scenario assumes that all 13 developed SSI. Confidence intervals are Wilson 95% confidence intervals.*

Scenario	SSI events	Denominator	Incidence (%)	Wilson 95% CI lower (%)	Wilson 95% CI upper (%)
Primary complete-case analysis	3	200	1.5	0.5	4.3
Best-case: none of 13 missing patients had SSI	3	213	1.4	0.5	4.1
Worst-case: all 13 missing patients had SSI	16	213	7.5	4.7	11.9

Note: *The best- and worst-case analyses assign all 13 missing outcomes to no SSI or SSI, respectively. They are bounds, not estimates of the most likely incidence.*

sinus excision under spinal anaesthesia lasting 30 minutes (class II, aqueous 10% povidone-iodine); no prophylaxis was prescribed or given, and she developed purulent drainage, erythema and tenderness. The wound was opened and debrided, and antibiotics were prescribed. A 19-year-old woman underwent in growing toenail surgery under local anaesthesia lasting 6 minutes (class I, chlorhexidine) with correctly timed, guideline-consistent cefazolin and developed purulent drainage without other recorded local or systemic signs. A 25-year-old man underwent in growing toenail surgery under local anaesthesia lasting 9 minutes (class I, aqueous 10% povidone-iodine), also with correctly timed, guideline-consistent cefazolin, and developed purulent drainage and erythema. No patient had fever or swelling, and no cultures were obtained. Each case involved only skin and subcutaneous tissue, occurred within 30 days, and fulfilled CDC/NHSN superficial incisional SSI criterion (a), purulent drainage from the superficial incision, and criterion (d), physician diagnosis. Both blinded adjudicators classified all three as superficial incisional primary SSI (Supplementary Table S1).

Exploratory comparisons between patients with and without surgical site infection:

With three events the protocol-specified regression could not be fitted, and comparisons between patients with and without infection were exploratory; they appear in the final column of Table I and are hypothesis-generating only.

Procedure type differed between the groups ($p = 0.023$): 2 of the 12 ingrowing toenail procedures were followed by infection (16.7%) and 1 of the 21 pilonidal sinus procedures (4.8%), while none of the remaining seven groups contributed an event. Two further comparisons reflect this distribution rather than independent effects. Operative duration was shorter in patients who developed infection (median 9.0 min, IQR 7.5–19.5) than in those who did not (median 46.0 min, IQR 18.0–73.0; $p = 0.039$), and age was lower in the infected group (mean 23.0 years, SD 3.5) than in the group without infection (mean 37.2 years, SD 13.5; $p = 0.057$). Both are attributable to the procedure mix, since toenail and pilonidal operations are short procedures performed predominantly in young patients, and neither should

be read as an effect of duration or age. No other variable reached p below 0.10.

Discussion.

In this retrospective cohort of 200 adults undergoing elective general surgery in a university hospital day-surgery unit, the 30-day cumulative incidence of surgical site infection was 1.5% (95% CI 0.5–4.3). Every one of the three infections was identified after discharge; the wound assessment documented before the patient left the unit was clean in all 200 cases. Compliance with antibiotic prophylaxis among treated patients was high, whereas skin antisepsis diverged from current international recommendations.

Incidence in context:

The observed incidence sits at the lower end of published estimates and is closely comparable with the best available ambulatory data. Rhee and colleagues reported an overall rate of 0.9% (95% CI 0.6–1.2) in 4045 ambulatory procedures with medical-record confirmation, with cholecystectomy at 0.5% and herniorrhaphy at 1.3% [8], and Owens and colleagues approximately 0.5% among low-risk ambulatory patients [10]. Our estimate of 1.5% is statistically indistinguishable from both.

A meta-analysis estimated a pooled 30-day general-surgery SSI incidence of 11% [15]. The lower estimate in this cohort is consistent with selection for elective clean or clean-contaminated day surgery, younger age, short procedures and same-day discharge, and should not be extrapolated to unselected inpatient surgery.

Post-discharge detection:

The most consequential finding is not the incidence but where the infections were found. All three were detected at the 30-day assessment and none during the operative episode; had surveillance been confined to the day-surgery admission, this unit would have reported a rate of zero.

The finding that every observed infection appeared after discharge is consistent with evidence that many SSIs are detected only after hospital discharge [7,16]. In day surgery, this is expected because discharge precedes the typical incubation interval; a zero in-facility rate should not be interpreted as absence of infection.

Hospitalisation-only screening has limited sensitivity after ambulatory surgery [8], and incomplete interoperability can miss infections treated elsewhere [9]. The routine day-14 and day-30 pathway used here improved ascertainment, but the absence of telephone follow-up and external records means that mild infections managed outside the system may remain undetected.

Follow-up completeness of 93.9% makes the estimate more interpretable, but it does not eliminate selection bias. The 13 patients without documented day-30 follow-up were similar in age to the analytic cohort (mean 36.8 vs 37.0 years; absolute SMD 0.02), but imbalances were present for sex (61.5% vs 49.0% male; SMD 0.25), body-mass index (mean 28.8 vs 27.6 kg/m²; SMD 0.22), procedure mix (maximum category-specific SMD 0.48), recorded comorbidity (SMD 0.43), smoking among patients with this field recorded (SMD 0.61), and ASA status (maximum category-specific SMD 0.37). Missing covariate documentation was also more frequent in the excluded group. None of the exploratory tests reached statistical significance, but the small excluded group provided little power; differential loss cannot be excluded. Under the extreme assumption that none of the 13 patients developed SSI, incidence was 1.4% (3/213; Wilson 95% CI 0.5–4.1); if all 13 developed SSI, it was 7.5% (16/213; 95% CI 4.7–11.9). The primary 1.5% estimate is therefore conditional on complete-case follow-up.

The procedure-type signal:

Infections were confined to two procedure groups: 2 of 12 ingrowing toenail operations and 1 of 21 pilonidal sinus excisions, with no events among the remaining 167 patients across seven groups ($p = 0.023$). With three events this is a hypothesis rather than a demonstration, but it is biologically coherent and consistent with external evidence.

All three events followed ingrowing toenail or pilonidal sinus procedures, both undertaken at anatomically colonised sites. Infection rates after ingrowing toenail surgery have been reported at 4.2% overall and 5.7% after surgical treatment [17], while pilonidal surgery is also prone to wound morbidity [18]. This makes the pattern plausible, but three events are insufficient for causal or procedure-specific inference.

The practical implication reverses intuition. These are short, technically minor operations, often performed under local anaesthesia and frequently regarded as too trivial to warrant formal surveillance; the evidence suggests they merit more postoperative attention rather than less, and that a surveillance programme prioritising major laparoscopic cases over minor procedures at colonised sites may be looking in the wrong place.

Why shorter operations and younger patients appeared to fare worse:

Two exploratory comparisons invert the established literature: operative duration was shorter among patients who developed infection (median 9.0 versus 46.0 minutes; $p = 0.039$), and infected patients were younger (mean 23.0 versus 37.2 years; $p = 0.057$). Duration is among the most consistently reproduced risk factors for infection, confirmed by meta-regression in the Gillespie meta-analysis [15].

The apparent associations with younger age and shorter operation therefore reflect procedure mix rather than credible protective effects of age or duration. With only three events, adjusted analysis was impossible; these comparisons should remain descriptive and hypothesis-generating.

Perioperative process measures:

Among the 141 patients who received prophylaxis, administration was correctly timed in 97.9%, the regimen guideline-consistent in 98.6% and prophylaxis discontinued within 24 hours in 94.9%. Cefazolin accounted for 99.3% of agents recorded, consistent with recommendations for clean and clean-contaminated procedures, and discontinuation within 24 hours accords with the CDC recommendation against additional doses after wound closure [6,12]. These figures compare favourably with published audit data: in a regional audit of 2303 records across 26 French facilities, Prévost and colleagues found overall compliance of 64%, with administration within 60 minutes of incision in 77.6% of cases [19].

The more useful finding here is documentary rather than clinical. Timing and guideline-consistency were documented for 161 patients although administration was recorded in only 141. Since the timing of an antibiotic never given cannot be assessed, this reflects incomplete completion of the perioperative record rather than clinical failure. Depending on the denominator applied, timing compliance is either 97.9% or 88.8% — a difference large enough to alter how the unit would appear in any comparative report.

Two substantive gaps emerged. Skin antisepsis used aqueous 10% povidone-iodine in 95.0% of patients, whereas the 2017 CDC guideline directs that skin preparation be performed with an alcohol-based agent unless contraindicated [6] and WHO recommends alcohol-based solutions containing chlorhexidine gluconate [11,20]. Because application or drying/contact time was not recorded, exposure-time compliance could not be assessed. The antisepsis result should therefore be interpreted as a description of product selection rather than complete protocol adherence. Second, blood glucose was documented as measured and within target in only 39.1% of patients, against a CDC recommendation for control below 200 mg/dL in patients with and without diabetes [6]; with 19.5% of the cohort diabetic and 3.0% prediabetic, this is a genuine gap in documentation, measurement, or both. Normothermia, by contrast, was documented in all 200 patients.

Limitations.

Several limitations qualify these findings, the most important being the number of events. With three infections the confidence interval spans nearly an order of magnitude, the protocol-specified regression could not be fitted, and all comparisons are exploratory and incapable of establishing independent association. Subgroup estimates, particularly the 16.7% for ingrowing toenail surgery, rest on single-digit denominators and should not be quoted as rates.

The study is retrospective and single-centre, and outcome ascertainment depended on routine documentation rather than a research-specific surveillance protocol. Follow-up consisted of routine clinic assessments at approximately two weeks and on postoperative day 30, with additional dressing visits when required; no telephone follow-up was used. The dataset did not encode source-specific contacts separately, so one-source versus multiple-source counts could not be reconstructed. The electronic health record captured only care delivered within the hospital system, so mild infections managed in primary care, another institution, or by the patient alone could have been missed, biasing incidence downwards. Thirteen patients lacked a documented day-30 assessment. Their age distribution was similar to that of the analytic cohort, but meaningful imbalances and greater covariate missingness were present, and the extreme-case sensitivity range of 1.4% to 7.5% shows that the incidence estimate is sensitive to their unknown outcomes. SSI classification was strengthened by independent blinded adjudication: all three cases had purulent drainage and a physician diagnosis and were classified as superficial incisional primary SSI. However, no cultures were obtained, so microbiological confirmation and susceptibility data were unavailable. The dataset did not record povidone-iodine application/contact time, so compliance with exposure-time recommendations could not be assessed. Readmission, reoperation and mortality were not systematically captured, limiting assessment of clinical impact.

Finally, this is a single unit with a particular case mix, in which skin and soft-tissue excision and cholecystectomy together accounted for over half of procedures; units with different procedural profiles should not assume the same incidence.

Conclusion.

Among patients with documented follow-up, observed SSI incidence after elective day surgery was low but imprecise and sensitive to the 13 missing outcomes. Surveillance confined to the operative episode would have detected none of the infections, supporting defined post-discharge follow-up and reproducible adjudication. The concentration of events in minor procedures at colonised sites remains hypothesis-generating. Practice priorities are alcohol-based skin antisepsis and complete perioperative documentation. Larger multicentre studies are needed for precise incidence and procedure-level risk estimates.

Declarations.

Funding:

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Conflict of interest:

The author declares no conflict of interest.

Ethics approval and consent to participate:

The study was approved by the Institutional Review Board of Qassim University, Qassim, Saudi Arabia (no. 26-17-2, 19 April 2026). The requirement for individual informed consent was waived by the approving committee because the study comprised retrospective analysis of anonymised routinely-collected clinical records without patient contact or intervention.

Data availability:

The anonymised dataset analysed during the current study is available from the corresponding author on reasonable request, subject to institutional data-governance approval.

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АННОТАЦИЯ — РУССКИЙ

Цель исследования: Оценить 30-дневную частоту инфекции области хирургического вмешательства (ИОХВ) после плановых операций одного дня и соблюдение периоперационных мер профилактики.

Материал и методы: Ретроспективная когорта включала 213 взрослых; в анализ вошли 200 пациентов с документированным наблюдением на 30-е сутки. Два исследователя, не имевшие доступа к данным о процессных показателях, независимо применяли критерии CDC/NHSN от января 2026 года. Рассчитаны интервалы Уилсона, проведены сравнение групп по наличию наблюдения и анализ чувствительности по крайним сценариям.

Результаты: Зарегистрированы три случая поверхностной инцизионной ИОХВ первичного разреза: 1,5% (95% ДИ 0,5–4,3). Во всех случаях отмечались гнойное отделяемое и диагноз врача. При отсутствии ИОХВ у 13 пациентов без наблюдения частота составила бы 1,4%, а при наличии ИОХВ у всех — 7,5%. Среди получавших антибиотики надлежащее время введения и соответствие выбора препарата рекомендациям были документированы в 97,9% и 98,6% случаев. 10%-й водный раствор повидон-йода применяли у 95,0% пациентов; данные о времени экспозиции отсутствовали.

Выводы: Наблюдаемая частота ИОХВ была низкой, но чувствительной к отсутствующим данным об исходах. Для достоверного надзора за ИОХВ в хирургии одного дня необходимы регламентированное наблюдение после выписки, воспроизводимая оценка случаев и полная документация.

Ключевые слова: инфекция области хирургического вмешательства, хирургия одного дня, послеоперационный надзор, антибиотикопрофилактика, антисептика кожи, когортное исследование.

რეზიუმე — ქართული

კვლევის მიზანი: გეგმური ერთდღიანი ქირურგიის შემდეგ ქირურგიული ჭრილობის ინფექციის 30-დღიანი სიხშირისა და პერიოპერაციული პრევენციის შეფასება.

მასალა და მეთოდები: რეტროსპექტიული კოჰორტა მოიცავდა 213 ზრდასრულ პაციენტს. ანალიზში 200 პაციენტი შევიდა 30-დღიანი მეთვალყურეობით. ორმა დაბრმავებულმა შემფასებელმა დამოუკიდებლად გამოიყენა 2026 წლის CDC/NHSN-ის კრიტერიუმები. გამოითვალა უილსონის სანდოობის ინტერვალები და ჩატარდა უკიდურესი სცენარების მგრძნობელობის ანალიზი.

შედეგები: გამოვლინდა პირველადი ჭრილობის ზედაპირული ინფექციის სამი შემთხვევა: 1.5% (95% სანდოობის ინტერვალი 0.5–4.3). სამივე შემთხვევაში დაფიქსირდა ჩირქოვანი გამონადენი და ექიმის დიაგნოზი. თუ მეთვალყურეობის გარეშე დარჩენილ 13 პაციენტში ინფექცია არ ყოფილა, სიხშირე იქნებოდა 1.4%, ხოლო თუ ინფექცია ყველას ჰქონდა — 7.5%. ანტიბიოტიკის მიმღებებში შეყვანის სწორი დრო და რეკომენდაციებთან შესაბამისი შერჩევა დოკუმენტირებული იყო 97.9%-სა და 98.6%-ში. 10%-იანი პოვიდონ-იოდის წყალხსნარი გამოყენებული იყო 95.0%-ში; ექსპოზიციის მონაცემები მიუწვდომელი იყო.

დასკვნები: ინფექციის სიხშირე დაბალი იყო, თუმცა დაკარგული გამოსავლების მიმართ მგრძნობიარე. სანდო ზედამხედველობისთვის საჭიროა გაწერის შემდგომი განსაზღვრული მეთვალყურეობა,

შემთხვევების რეპროდუცირებადი შეფასება და სრული დოკუმენტაცია.

საკვანძო სიტყვები: ქირურგიული ჭრილობის ინფექცია, ერთდღიანი ქირურგია, პოსტოპერაციული მეთვალყურეობა, ანტიბიოტიკოპროფილაქტიკა, კანის ანტისეპტიკა, კოჰორტული კვლევა

Supplementary Table S1. *Case-level CDC/NHSN adjudication of the three superficial incisional primary surgical site infections.*

Case	**Age/sex**	**Procedure**	**Timing**	**Documented Findings**	**Culture**	**Management**	**CDC/NHSN Criterion**	**Final Classification**
1	19-year-old female	Ingrowing toenail	Within 30-day surveillance period	purulent drainage	Not obtained	Antibiotics prescribed	Superficial incisional SSI: criterion a (purulent drainage); criterion d (physician diagnosis)	Superficial incisional primary SSI
2	25-year-old male	Ingrowing toenail	Within 30-day surveillance period	purulent drainage, erythema	Not obtained	Antibiotics prescribed	Superficial incisional SSI: criterion a (purulent drainage); criterion d (physician diagnosis)	Superficial incisional primary SSI
3	25-year-old female	Pilonidal sinus	Within 30-day surveillance period	purulent drainage, erythema, tenderness	Not obtained	Wound opened and debrided; antibiotics prescribed	Superficial incisional SSI: criterion a (purulent drainage); criterion d (physician diagnosis)	Superficial incisional primary SSI

Note: *All cases involved only skin/subcutaneous tissue and occurred within 30 days. No cultures were obtained. The classification relies on purulent drainage and physician diagnosis under the January 2026 CDC/NHSN definition.*