**Supplementary Material**

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**Supplementary Figure 1:** Causal diagram relating potential confounders to *in situ* steroids (exposure) and SSI (outcome). Boxes denote the minimal sufficient adjustment set for estimating the effect of *in situ* steroids on SSI in this study. Black text denotes observed variables, gray text denotes unobserved variables. BMI=body mass index, SSI=surgical site infection.

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| **Supplementary Table 1:** Data dictionary | | |
| **Name** | **Definition** | **Source** |
| Age | Age in years on date of procedure | Infection prevention procedure abstraction surveillance tool |
| Gender | Patient gender (1=Female, 2=Male) | Infection prevention procedure abstraction surveillance tool |
| Body Mass Index | Weight/height2 (kg/m2) during procedure admission | Infection prevention procedure abstraction surveillance tool |
| Diabetes | Diabetes diagnoses during procedure admission | Infection prevention procedure abstraction surveillance tool |
| Recent Smoker | Current smoker or quit <6 months prior to procedure | Any note in the medical record |
| Cancer | Patient had malignancy involving the spine at time of procedure | Operative report |
| Charlson Comorbidity  Index  (10-year survival rate) | Charleson Risk Score assigned upon discharge based on diagnosis codes  (1=10 year survival rate of 0%, 2=10 year survival rate of 21.4%-22%, 3=10 year survival rate of 53.4%, 4=10 year survival rate of 77.5%, 5=10 year survival rate of >90%) | Population explorer dashboard of hospital admissions |
| Fracture | Spine fracture at time of procedure | Operative report |
| History of  Spine Surgery | Any history of spine surgery | Operative report or pre-operative evaluation |
| Instrumentation | Hardware implanted during procedure | Operative report |
| C-spine | C-spine involved in procedure | Operative report |
| T-spine | T-spine involved in procedure | Operative report |
| L-spine | L-spine involved in procedure | Operative report |
| S-spine | S-spine involved in procedure | Operative report |
| Number of Levels | Number of intervertebral discs  (eg, L3 to L5 is 2 levels) | Operative report |
| Duration of Surgery | Duration of procedure in minutes, based on documented procedure start and end time | Infection prevention procedure abstraction surveillance tool |
| Durotomy | Durotomy occurred during procedure | Operative report |
| Intravenous Steroids | Intravenous dexamethasone given <24 hours prior to procedure | Medication administration record |
| Topical Antibiotics | Antibiotics applied to incision | Operative report |
| Drain | Drain left after procedure | Operative report |
| *In situ* Steroids | Steroids applied directly to wound or as epidural injection during procedure | Operative report |
| Surgical Site Infection | Infectious disease consultant documented an infection <6 months following procedure | Infectious disease notes |

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| **Supplementary Table 2:** Characteristics of spine SSIs from CY2020 and 2021 | | | | | | | |
| **Case #1** | **Procedure(s)** | **Month of surgery** | **Surgeon** | **OR** | **Depth of infection** | **Microbiology** | **NHSN SSI2** |
| 1 | LAM | 1/2020 | 5 | 4 | SIP | *Cutibacterium acnes* | Yes |
| 2 | FUSN | 2/2020 | 3 | 3 | BONE | MSSA3  Normal flora | No |
| 3 | LAM | 5/2020 | 2 | 6 | DIP | MSSA3 | No |
| 4 | LAM | 6/2020 | 3 | 6 | SA | MSSA4 | No |
| 5 | LAM+FUSN | 6/2020 | 4 | 6 | SIP | MSCoNS | Yes |
| 6 | LAM+FUSN | 6/2020 | 5 | 4 | BONE | MSCoNS | Yes |
| 7 | LAM | 7/2020 | 3 | 6 | SIP | MRCoNS | No |
| 8 | LAM | 8/2020 | 1 | 3 | SIP | None | No |
| 9 | LAM+FUSN | 9/2020 | 6 | 1 | BONE | MSSA5  *Corynebacterium striatum* | No |
| 10 | LAM+FUSN | 10/2020 | 5 | 7 | DIP | MSCoNS | Yes |
| 11 | LAM+FUSN | 10/2020 | 1 | 3 | DIP | *Enterobacter aerogones* | Yes |
| 12 | LAM+FUSN | 11/2020 | 4 | 6 | DIP | MSSA3  *Haemophilus influenza*  *Peptostreptococcus* spp. | Yes |
| 13 | FUSN | 12/2020 | 1 | 2 | DIP | MSSA5  *Finegoldia magna* | Yes |
| 14 | FUSN | 12/2020 | 3 | 6 | BONE | MSSA3  Normal flora | Yes |
| 15 | LAM+FUSN | 12/2020 | 5 | 7 | SA | MSSA3 | Yes |
| 16 | FUSN | 2/2021 | 3 | 6 | SIP | MSSA3 | Yes |
| 17 | LAM | 3/2021 | 5 | 3 | DIP | MSSA3 | Yes |
| 18 | LAM | 3/2021 | 1 | 5 | SA | MSSA4 | Yes |
| 19 | LAM | 4/2021 | 2 | 6 | SIP | None | Yes |
| 20 | LAM+FUSN | 4/2021 | 5 | 4 | BONE | *Candida albicans* | No |
| 21 | LAM+FUSN | 5/2021 | 5 | 3 | SA | MRSA | Yes |
| 22 | LAM | 5/2021 | 5 | 2 | DIP | MSSA4  Normal flora | Yes |
| 23 | LAM+FUSN | 6/2021 | 4 | 6 | SA | *Granulicatella adiacens* | Yes |
| 24 | LAM | 9/2021 | 3 | 6 | DIP | MSSA3 | Yes |
| 25 | LAM | 10/2021 | 4 | 6 | SIP | MSSA5  *Finegoldia magna* | Yes |
| 26 | LAM+FUSN | 10/2021 | 1 | 3 | DISC | *Serratia marcescens* | Yes |
| SSI=surgical site infection, CY=calendar year, OR=operating room, NHSN=National Healthcare Safety Network, LAM=laminectomy, FUSN=fusion, SIP=superficial incisional primary, DIP=deep incisional primary, SA=spinal abscess, BONE=osteomyelitis, DISC=disc space infection, MSSA=methicillin sensitive *Staphylococcus aureus*, MRSA=methicillin resistant *Staphylococcus aureus*, MSCoNS=methicillin sensitive coagulase negative *Staphylococcus*, MRCoNS=methicillin resistant coagulase negative *Staphylococcus*  1underlining denotes cases where *in situ* steroids were administered  2SSIs for cases 2, 3, 4, 7, 9, and 20 occurred outside the NHSN surveillance window of 30 days for LAM and 90 days for FUSN; the SSI for case 8 did not meet any NHSN definition for SSI  3pan susceptible, 4resistant to erythromycin, 5resistant to clindamycin and erythromycin | | | | | | | |

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| **Supplementary Table 3:** Adjusted logistic regression coefficients for spine SSI. | |
| **Variable** | **Adjusted Coefficient (95% CI)1** |
| *In Situ* Steroids | -0.15 (-1.9, 1.6) |
| Instrumentation | -0.34 (-1.4, 0.73) |
| *In Situ* Steroids x Instrumentation  (Product Term) | 2.4 (-0.08, 5.0) |
| Charlson Comorbidity Index2 | -0.43 (-0.81, -0.062) |
| Cancer | 0.84 (-0.77, 2.45) |
| SSI: surgical site infection; OR: odds ratio; CI: confidence interval;  1Adjusted for all variables in the table.  2Charlson Comorbidity Index variable treated as continuous measure on a scale of 1 to 5 with 1: 0% chance of 10-year survival, and 5: >90% chance of 10-year survival. | |