

| Pathogen                              |                                      | Later Period    | Sensitivity Analysis |
|---------------------------------------|--------------------------------------|-----------------|----------------------|
| Category                              | Bacterial Species                    | (2015–2023) (%) | (2015–2019) (%)      |
| Facultative<br>anaerobes /<br>Aerobes | MRSA                                 | 33.8%           | 27.9%                |
|                                       | MSSA                                 | 18.3%           | 20.9%                |
|                                       | <i>Streptococcus<br/>intermedius</i> | 11.3%           | 14.0%                |
| Anaerobes                             | <i>Veillonella parvula</i>           | 9.9%            | 9.3%                 |
|                                       | <i>Prevotella buccae</i>             | 4.2%            | —                    |
|                                       | <i>Prevotella bivia</i>              | —               | 4.7%                 |
|                                       | <i>Propionibacterium<br/>avidum</i>  | 4.2%            | 4.7%                 |

1 **Supplementary Table S1. Sensitivity analysis of the top three bacterial species in**  
2 **culture-positive pediatric DNI patients, comparing the full later period (2015–**  
3 **2023) with a pre-pandemic interval (2015–2019), excluding COVID-19 pandemic**  
4 **years. Values: proportion (%) of each species among all isolates; a dash (–)**  
5 **indicates the species was not among the top three. Abbreviations: MRSA,**  
6 **methicillin-resistant *Staphylococcus aureus*; MSSA, methicillin-sensitive**  
7 ***Staphylococcus aureus*.**

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|                                                | Cultured    |      | Non-cultured |      | <i>p</i> -value* |
|------------------------------------------------|-------------|------|--------------|------|------------------|
|                                                | n           | %    | n            | %    |                  |
| Total                                          | 243         |      | 1500         |      |                  |
| Gender                                         |             |      |              |      | 0.118            |
| Male                                           | 125         | 51.4 | 852          | 56.8 |                  |
| Female                                         | 118         | 48.6 | 648          | 43.2 |                  |
| Age (M ± SD) <sup>†</sup>                      | 7.0 ± 5.9   |      | 7.0 ± 4.4    |      | 0.951            |
| Therapy                                        |             |      |              |      | <0.001           |
| Antibiotic ± Aspiration                        | 170         | 70.0 | 1446         | 96.4 |                  |
| Surgery                                        | 73          | 30.0 | 54           | 3.6  |                  |
| Hospitalization (Days)                         | 8.4 ± 5.8   |      | 6.4 ± 6.6    |      | <0.001           |
| ICU care                                       | 48          | 19.8 | 91           | 6.1  | <.0001           |
| Laboratory                                     |             |      |              |      |                  |
| WBC, 10 <sup>3</sup> /μL (M ± SD) <sup>†</sup> | 16.7 ± 6.9  |      | 13.2 ± 5.6   |      | <0.001           |
| CRP, mg/L (M ± SD) <sup>†</sup>                | 71.0 ± 70.0 |      | 47.8 ± 61.7  |      | <0.001           |

**Supplementary Table S2. Comparison of clinical characteristics between culture-positive (n = 243) and culture-negative (n = 1,500) pediatric DNI patients (2006–2023). Among cultured patients, 73 (30.0%) had specimens from surgical drainage and 170 (70.0%) from non-operative sampling.**

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**Continuous data: mean  $\pm$  SD; categorical data: n (%). \*Chi-squared test;**

**†Student's t-test. Abbreviations: ICU, intensive care unit; WBC, white blood cell count; CRP, C-reactive protein; SD, standard deviation.**

| Variables                                  | Surgical intervention |             |         | ICU admission |             |          |
|--------------------------------------------|-----------------------|-------------|---------|---------------|-------------|----------|
|                                            | aOR                   | 95% CI      | p-value | aOR           | 95% CI      | p-value  |
| <b>Time period</b>                         |                       |             |         |               |             |          |
| 2006–2014                                  | 1.00                  | (Reference) |         | 1.00          | (Reference) |          |
| 2015–2023                                  | 0.75                  | 0.50–1.12   | 0.168   | 0.99          | 0.65–1.52   | 0.976    |
| <b>Age (years)</b>                         | 1.00                  | 0.95–1.04   | 0.921   | 1.05          | 1.01–1.11   | 0.032    |
| <b>Gender (Male)</b>                       | 1.01                  | 0.68–1.49   | 0.970   | 0.91          | 0.60–1.37   | 0.664    |
| <b>WBC (<math>10^3/\mu\text{L}</math>)</b> | 1.08                  | 1.04–1.11   | < 0.001 | 1.11          | 1.08–1.15   | < 0.001* |
| <b>CRP (mg/L)</b>                          | 1.08                  | 1.05–1.11   | < 0.001 | 1.10          | 1.06–1.12   | 0.001    |

10 **Supplementary Table S3. Multivariable logistic regression for independent**  
11 **predictors of surgical intervention and ICU admission in all pediatric DNI**  
12 **patients (n = 1,743; 2006–2023). Both models adjusted for age, sex, study period,**  
13 **WBC, and CRP. Results expressed as adjusted odds ratios (aOR) with 95% CI.**  
14 **Abbreviations: aOR, adjusted odds ratio; CI, confidence interval; WBC, white**  
15 **blood cell count; CRP, C-reactive protein; ICU, intensive care unit.**

| Variables                           | 2006–2014 |      | 2015–2023 |     | p-value |
|-------------------------------------|-----------|------|-----------|-----|---------|
|                                     | n         | %    | n         | %   |         |
| <b>Preschool age (&lt; 6 years)</b> | N = 449   |      | N = 332   |     |         |
| Surgery*                            | 37        | 8.2  | 22        | 6.6 | 0.399   |
| ICU care*                           | 52        | 11.6 | 30        | 9.0 | 0.251   |
| Hospitalization (days)†             | 6.6 ± 6.0 |      | 7.3 ± 9.1 |     | 0.218   |
| <b>School age (≥ 6 years)</b>       | N = 568   |      | N = 394   |     |         |
| Surgery*                            | 49        | 8.6  | 19        | 4.8 | 0.024   |
| ICU care*                           | 38        | 6.7  | 19        | 4.8 | 0.228   |
| Hospitalization (days)†             | 6.6 ± 6.0 |      | 6.2 ± 4.8 |     | 0.184   |

16 **Supplementary Table S4. Subgroup analysis of surgical intervention, ICU**  
17 **admission, and hospitalization duration by pediatric age group (< 6 years vs. ≥6**  
18 **years) and study period (2006 – 2014 vs. 2015 – 2023). Categorical data: n (%);**  
19 **\*Pearson’ s chi-square test. Continuous data: mean ± SD; †Student’s t-test.**  
20 **Abbreviations: ICU, intensive care unit; SD, standard deviation.**

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