2026 Clinical Practice Guidelines by the Infectious Diseases Society of America (IDSA) and European Society of Clinical Microbiology and Infectious Diseases (ESCMID) on Staphylococcus aureus Bacteremia: Risk Stratification, Diagnostic Evaluation, and Management of Adults and Children

Consensus Statement 6 on the Duration of Antibiotic Therapy in Low-Risk Patients with *Staphylococcus aureus* Bacteremia without Evidence of Deep-Seated or Metastatic Foci of Infection

Author's name	Society	Affiliation
Luke Strnad*	IDSA	Department of Medicine, Division of Infectious Diseases, Oregon Health and Science University (OHSU) and Epidemiology Programs, OHSU/Portland State University School of Public Health; Portland, Oregon, United States
Bo Shopsin*	IDSA	Department of Microbiology and Department of Medicine, Division of Infectious Diseases, NYU Grossman School of Medicine, New York, NY, USA
Marisa Holubar	IDSA	Department of Medicine, Division of Infectious Diseases and Geographic Medicine, Stanford University School of Medicine; Stanford, California, United States
Aubrey J. Cunnington	ESPID	Department of Infectious Disease, Section of Paediatric Infectious Disease, and Centre for Paediatrics and Child Health, Imperial College London, London, UK
J. Chase McNeil	PIDS	Department of Pediatrics, Division of Infectious Diseases, Baylor College of Medicine, Houston, TX, USA
Achim J. Kaasch	ESCMID	Institute of Medical Microbiology and Hospital Hygiene, Medical Faculty of the Otto von Guericke University Magdeburg, Magdeburg, Germany
Cesar Arias	IDSA	Division of Infectious Diseases, Houston Methodist Hospital, Houston, TX, United States; Center for Infectious Diseases, Houston Methodist Research Institute, Houston, TX, United States; Department of Medicine, Weill Cornell Medical College, New York, NY, United States.
Thomas Benfield	ESCMID	Department of Infectious Diseases, Copenhagen University Hospital - Amager and Hvidovre, Copenhagen, Denmark
Douglas Black	IDSA	Department of Pharmacy, School of Pharmacy, University of Washington, Seattle, WA, USA

Helen W. Boucher	IDSA	Tufts University and Tufts Medicine, Boston, MA, United States
Vance G. Fowler, Jr.	IDSA	Division of Infectious Diseases, Department of Medicine, Duke University Medical Center, Durham North Carolina USA Duke Clinical Research Institute, Durham, North Carolina, USA
Barbara Hasse	ESCMID	Department of Infectious Diseases and Hospital Epidemiology, University and University Hospital Zurich, Switzerland
Vincent Le Moing	ESCMID	Service des Maladies Infectieuses et Tropicales, CHU de Montpellier
Martin Llewelyn	ESCMID	Department of Global Health and Infection, Brighton and Sussex Medical School, Falmer, East Sussex, UK Department of Infection, University Hospitals Sussex NHS Foundation Trust, Eastern Road, Brighton, UK
Luis Eduardo López Cortés	ESCMID	Infectious Diseases and Microbiology Clinical Unit, University Hospital Virgen Macarena; Department of Medicine, School of Medicine, University of Sevilla; and Biomedicine Institute of Sevilla (IBiS)/CSIC, Seville, Spain. Centro de Investigación en Red de Enfermedades Infecciosas (CIBERINFEC), Instituto de Salud Carlos III, Madrid, Spain
Loren G. Miller	IDSA	Division of Infectious Diseases, Harbor-UCLA Medical Center and the Lundquist Institute at Harbor-UCLA Medical Center, Torrance, CA and the University of California, Los Angeles, Los Angeles, CA.
Mical Paul	ESCMID	Infectious Diseases Division, Rambam Health Care Campus, Haifa, Israel The Ruth and Bruce Rappaport Faculty of Medicine, Technion - Israel Institute of Technology, Haifa, Israel.
Kyle J. Popovich	IDSA, SHEA	Division of Infectious Diseases Rush University Medical Center, Chicago, IL.
Siegbert Rieg	ESCMID	Department of Internal Medicine II, Division of Infectious Diseases, Medical Centre - University of Freiburg, Faculty of Medicine, Freiburg, Germany
Mark E. Rupp	IDSA	Department of Medicine, Division of Infectious Diseases, University of Nebraska Medical Center, Omaha, Nebraska, USA.
Marc H. Scheetz	IDSA	Departments of Pharmacy Practice and Pharmacology, Pharmacometrics Center of

		Excellence, Colleges of Pharmacy and Graduate Studies, Midwestern University, Downers Grove, IL, United States
Alex Soriano	ESCMID	Department of Infectious Diseases, Hospital Clínic of Barcelona, Barcelona, Spain. IDIBAPS, Barcelona, Spain Centro de Investigación en Red de Enfermedades Infecciosas (CIBERINFEC), Instituto de Salud Carlos III, Madrid, Spain
Steven Y.C. Tong	ESCMID	Victorian Infectious Diseases Service, The Royal Melbourne Hospital, at the Peter Doherty Institute for Infection and Immunity, Melbourne, Australia Department of Infectious Diseases, The University of Melbourne at the Peter Doherty Institute for Infection and Immunity, Melbourne, Australia
Winfried V. Kern +	ESCMID	Department of Internal Medicine II, Division of Infectious Diseases, Medical Centre - University of Freiburg, Faculty of Medicine, Freiburg, Germany
Lara A. Kahale +	IDSA	Clinical Affairs and Practice Guidelines, Infectious Diseases Society of America, Arlington, Virginia, USA
Henry F. Chambers +	IDSA	Division of Infectious Diseases, Zuckerberg San Francisco General Hospital, University of California, San Francisco
François Vandenesch +	ESCMID	Center for Integrative Research in Infectious diseases and Immunology (CIRI), INSERM U1111, CNRS UMR5308, University of Lyon, ENS Lyon, France
Catherine Liu+	IDSA	Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Center and Division of Allergy and Infectious Diseases, University of Washington, Seattle, Washington

*Contributed equally as first authors
+Contributed equally as last authors

Correspondence: Catherine Liu, Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Center and Division of Allergy and Infectious Diseases, University of Washington, Seattle, Washington, practiceguidelines@idsociety.org

Executive Summary

Overview

The optimal duration of therapy for patients with *Staphylococcus aureus* bacteremia (SAB) is unknown. Management of SAB should be guided by risk stratification to direct both diagnostic

evaluation and antibiotic treatment (Consensus Statement 1). Here, we evaluate the optimal duration of therapy for patients stratified as low-risk SAB and classified as without evidence of deep-seated or metastatic foci of infection.

Clinical question 6
Should patients stratified as low-risk SAB and classified as without deep-seated or metastatic foci of infection after diagnostic evaluation receive antibiotic therapy for 14 days, less than 14 days, or more than 14 days?

Consensus statement for the adult population

- In adult patients stratified as low-risk SAB and classified as without deep-seated or metastatic foci of infection after diagnostic evaluation, the panel suggests an antibiotic treatment duration of 14 days rather than longer or shorter courses (consensus).

Remarks for the adult population

- The criteria for SAB at low risk of deep-seated or metastatic foci of infection or relapse of infection are defined in Consensus Statement 1.
- This consensus statement assumes that follow-up blood cultures are collected at 48 hours of sampling of the first positive blood culture, and that blood culture clearance is documented as outlined in Consensus Statement 2.
- The day of blood culture clearance should be used as the start date for calculating treatment duration of the bacteremia. In cases where source control occurs after blood culture clearance, the date of focus removal may be counted as the start date of therapy.

Consensus statements for the pediatric population

- Data are insufficient to define a population of pediatric patients with SAB who have a low risk of deep-seated or metastatic foci of infection or relapse of infection (consensus).
- In otherwise healthy pediatric patients with SAB and no evidence of deep-seated or metastatic foci of infection after appropriate evaluation, the panel suggests an antibiotic duration of 14 days (consensus).

Remarks for the pediatric population

- This consensus statement assumes that follow-up blood cultures are collected at 48 hours of sampling of the first positive blood culture, and that blood culture clearance is documented as outlined in Consensus Statement 2.
- The day of blood culture clearance should be used as the start date for calculating treatment duration of the bacteremia. In cases where source control occurs after blood culture clearance, the date of focus removal may be counted as the start date of therapy.

Introduction

Background

The optimal duration of therapy for patients with *Staphylococcus aureus* bacteremia (SAB) at low risk for deep-seated or metastatic infection or relapse of infection is an important management question. Because SAB is frequently associated with deep-seated or metastatic infection, clinicians often favor longer durations of therapy to avoid undertreatment of clinically silent foci of infection [1-3].

Historically, the terms “uncomplicated” and “complicated” SAB have been used to guide treatment duration. Earlier guidelines on the management of methicillin-resistant *S. aureus* (MRSA)[4]

recommended at least 14 days of therapy for "uncomplicated" bacteremia and 4-6 weeks of therapy for "complicated" bacteremia. However, as noted in Consensus Statement 1, these categories are inconsistently defined and lack sufficient sensitivity and specificity for identifying SAB with deep-seated or metastatic involvement [5].

[4]The optimal duration of therapy should balance efficacy and avoidance of relapse with the risks of drug toxicity and prolonged treatment. Here, the panel seeks to determine whether patients stratified as low-risk SAB and classified as without evidence of deep-seated or metastatic foci of infection should be treated for 14 days or longer or shorter courses.

Purpose and objectives
The objective of the panel was to review the relevant evidence in order to develop a consensus statement on the optimal duration of antibiotic therapy for patients with SAB who, after initial evaluation, are stratified as low risk for deep-seated or metastatic foci of infection or relapse of infection. This consensus statement builds on the risk stratification framework developed in Consensus Statement 1 and integrates literature, clinical judgement, and expert consensus to propose an appropriate treatment duration.

Scope
This consensus statement is intended for use by adult and pediatric healthcare professionals including physicians, advanced practice providers, and pharmacists who care for patients with SAB. The target audience includes but is not limited to infectious diseases specialists, hospitalists, emergency care clinicians, intensivists, health systems researchers, and policymakers.

Methods

Panel composition
The four chairs of the panel were selected by the leadership of IDSA and the European Society of Clinical Microbiology and Infectious Diseases (ESCMID). Twenty-three additional panelists comprised the full panel: Nine from IDSA, 10 from ESCMID, one from the Pediatric Infectious Diseases Society (PIDS), one from the European Society for Paediatric Infectious Diseases (ESPID), one from both IDSA and the Society for Healthcare Epidemiology of America (SHEA), and one from IDSA, the Society of Infectious Diseases Pharmacists (SIDP), and the American Society of Health-System Pharmacists (ASHP). The panel included physicians and pharmacists with expertise in adult and pediatric infectious diseases and microbiology. Panelists were from diverse geographic distributions and years of clinical experience. IDSA staff oversaw all methodological, administrative, and logistical aspects of the guideline. The panel reviewed existing literature and brought in their professional experiences and clinical judgment.

Process
This consensus statement was developed in parallel with the risk stratification framework outlined in Consensus Statement 1. In the absence of a universally accepted definition of "low-risk SAB", the panel conducted a systematic review to identify studies most likely to include patients whose clinical features align with our definition of "low-risk" in Consensus Statement 1. We evaluated these studies for direct and indirect evidence regarding the impact of antibiotic treatment duration on outcomes in this population.

As an initial step, we focused on studies that enrolled patients who fulfilled all seven predefined criteria listed below. These features were selected because they:

a) reflect the three key risk factors identified in Consensus Statement 1,
b) align with commonly used definitions of "uncomplicated" and "complicated" SAB,
c) represent established risk factors for deep-seated or metastatic foci of infection, and
d) are routinely reported in the literature.

To accommodate variability in definitions of "uncomplicated" and "complicated" SAB across studies, we permitted certain deviations from the Consensus Statement 1 criteria—for example, allowing for blood culture clearance between 48 and 96 hours.

Eligible studies included cohorts of at least 50 patients with all of the following characteristics:

1. Community-onset SAB excluded,
2. Negative follow-up blood culture obtained within 48-96 hours after the first positive culture,
3. No implanted prostheses or intravascular foreign bodies,
4. Defervescence within 72 hours after starting active antibiotic therapy,
5. Transthoracic echocardiography (TTE) and/or transesophageal echocardiography (TEE) without evidence of endocarditis,
6. Removal of the presumed focus of infection (e.g., debridement of soft tissue infection, venous catheter removal),
7. No clinical evidence of metastatic infection or visceral nidus of infection (i.e., pneumonia, splenic abscess) based on clinical evaluation.

We specifically evaluated studies comparing a 14-day course of antibiotic therapy to either shorter (<14 days) or longer (>14 days) durations. Fourteen days was selected as the reference point because it has traditionally been regarded as the standard of care for lower risk SAB—often termed "uncomplicated SAB" in the literature—and is consistent with the 2011 IDSA MRSA guidelines [4]. We included studies referring to "uncomplicated" SAB as they were judged to be most likely to be reported in the literature and provide interpretable data on treatment duration in low-risk patients.

Literature review

A medical librarian designed the literature searches and Medical Subject Headings (MeSH) terms for Medline (OVID), Embase (OVID), and Cochrane. The formal literature searches were performed in June 2021, July 2023, and January 2025. Searches were limited to studies published in English. We excluded animal studies, conference/meeting abstracts, books/chapters, editorials, or correspondence. Reference lists of related articles and guidelines were reviewed for relevance to supplement the electronic searches. Title and abstract screening was done by the methodologist (LAK) and verified by the two panelists (BS, MH). Full-text screening was done by one panelist (MH) and verified by two panelists (BS, LS). Search strategies are detailed in the supplementary file.

Consensus statement development

Consensus statements were developed using an iterative, structured process that incorporated input from both topic-specific subgroups and the full multidisciplinary panel. Subgroups drafted preliminary statements based on a comprehensive review of the available literature and expert clinical judgment. The consensus statements were also developed considering the balance of benefits and harms, feasibility, and resource use, while also providing practical advice for implementation and identifying key research gaps. Draft statements were then reviewed and discussed during multiple virtual panel meetings and refined through sequential rounds of asynchronous electronic feedback. Disagreements and areas of limited agreement were

systematically identified, documented, and addressed through targeted discussion and revision. Statements were modified iteratively until convergence was achieved. Final consensus for each statement was defined a priori as agreement by >75% of panel members. Consensus statements should be interpreted in the context of evolving evidence and are intended to support, not replace, individualized clinical decision making, while highlighting priorities for future SAB research. Panel members considered whether there was sufficient evidence to support the application of the same guidance to children, or whether available evidence supported development of alternative guidance.

Results

Adults' perspective

Summary of the literature review for the adult population

We screened 3,476 titles and abstracts and identified 18 studies that evaluated 14-day antibiotic treatment compared with shorter or longer durations in patients potentially meeting criteria for low-risk SAB [6-23]. However, none of these studies included patients who fulfilled all seven criteria defined in this Consensus Statement for identifying a low-risk population. As a result, no study provided direct evidence to answer the clinical question. We therefore report below on studies that analyzed these treatment durations in populations meeting some, but not all, of the low-risk criteria. Although these studies do not constitute direct evidence, they provide important circumstantial data that inform the Consensus Statement.

Observational studies: We identified 15 independent observational studies, most retrospective, each meeting a variable subset of the seven criteria [6-20]. Demographics are summarized in Supplementary Table 1. Additionally, we identified three systematic reviews addressing treatment duration in SAB populations judged to be at low risk for deep-seated or metastatic infection [21-23]. These reviews largely overlapped with the studies we identified but applied heterogeneous inclusion criteria and methodologies. Two additional studies were each included in two of these three systematic reviews but not in the 15 studies we analyzed. One study not identified in our literature review compared treatment durations (<10 days, 10-18 days, and >18 days) which varied by multiple days from our defined treatment durations [24]. In contrast, the other study was identified in our screening process but included fewer than 50 patients [25].

The 15 retrospective studies we analyzed varied widely in how they reported and applied the seven criteria, in the intensity of diagnostic evaluation, and in the proportion of patients ultimately diagnosed with deep-seated or metastatic infection. One study focused on pediatric patients [20], 4 studies explicitly defined cohorts as "uncomplicated" SAB [11, 12, 18, 19], and 11 studies included patients with an unclear primary focus of infection—a known risk factor for deep-seated or metastatic spread—in 15.8-41.5% of cases [6, 8, 9, 11-14, 16-19]. Use of echocardiography was not reported in 6 studies [9, 10, 14, 16, 17, 20], and in the remainder, usage varied substantially [6-8, 11-13, 15, 18, 19]. Only 2 studies exclusively enrolled patients without deep-seated foci of infection [11, 19]. In the remaining 13 studies, 12.5-50.0% of patients were ultimately diagnosed with at least one deep-seated focus of infection.

Despite this heterogeneity and inclusion of patients who did not meet low-risk SAB criteria, the 15 studies did not consistently show differences in clinical outcomes between shorter and longer treatment durations. Among the 12 studies that compared 14 days to >14 days, none demonstrated improved outcomes with extended therapy. While subject to bias by indication—sicker patients are

more likely to receive longer treatment—and while immortal time bias was not consistently accounted for in each study's analysis, these studies collectively suggest that prolonged courses may not provide additional benefit in lower risk populations. Although indirect, data from these less strictly defined cohorts lend support to the use of a 14-day duration in carefully selected low-risk patients, as described in Consensus Statement 1.

Among the 4 cohorts that explicitly applied "uncomplicated SAB" or "low risk SAB" (see Supplementary Table 1 for definitions), only 1 compared >14 to 14 days and found no significant difference in the composite primary outcome of treatment failure 90 days after hospital discharge, death due to infection, or relapsed infection [2/43 (5%) in >14 days versus 0/21 (0%) in 14 days] [18]. Another study compared <14 to ≥14 days and found an increased risk of relapse in the <14 days group [3/38 (8%) versus 0/73 (0%), p=0.04] but no difference in 12-week all-cause mortality [7/38 (18%) versus 16/73 (22%), p=0.67] or treatment failure [10/38 (26%) versus 16/73 (22%), p=0.64) [11]. A third compared ≤14 days to >14 days and found no difference in SAB relapse (p>0.99) or infection-attributable mortality (p=0.33)[12]. The fourth compared 6-10 days versus 11-16 days and, after inverse probability of treatment weighing, found no increase in 90-day mortality in those treated with a shorter course [OR (95%CI): 1.1 (0.7-1.5)] [19]. Taken together, these small, heterogeneous studies do not permit firm conclusions about regimens shorter than 14 days, though they raise hypotheses for further investigation [19].

Systematic reviews: Of the three systematic reviews, one review included studies relevant to our population and treatment durations of interest [22]. It analyzed three retrospective cohorts comparing >14 days (subdivided into subgroups of >18 days and 11-16 days) versus ≤14 days (subdivided into 10-18 days and 6-10 days) in adults meeting IDSA 2011 criteria for "uncomplicated SAB" [4]. After adjustment for confounding and immortal time bias, none of the these studies demonstrated significant differences in SAB relapse, 28/30-day mortality, or 90-day mortality, except in one study comparing very short (< 10 days) with very long (> 18 days) therapy, where shorter duration was associated with increased risk of 28-day all-cause mortality (OR 1.7; 95%CI 1.26-2.29) [24]. The two other reviews synthesized heterogeneous studies without adjustment for confounding or immortal time bias but similarly found no consistent benefit of extended therapy [21, 23]. All three reviews concluded that well-designed randomized controlled trials are needed to definitively answer this clinical question.

Additional evidence: Although not designed to compare treatment durations, a recent randomized controlled trial in a low-risk SAB population of 213 patients compared 14-day intravenous (IV) therapy to 5-7 days of IV therapy followed by a switch to oral therapy to complete 14 days and found that early switch to oral antibiotics was non-inferior to continued IV therapy [26]. In this study, 90-day mortality was 13%, which is in the expected range for low-risk patients [27] and lower than in cohorts including all patients with SAB [28]. These findings reinforce the principle that a 14-day regimen is sufficient in carefully selected low-risk patients.

Rationale for the consensus statement for the adult population

Balance of benefits and harm

Review of existing literature does not suggest the benefit of extending therapy beyond 14 days in patients with low-risk SAB and without deep-seated or metastatic foci of infection. Meanwhile, extended antibiotic therapy carries important risks, including adverse drug events (e.g., allergic reactions, nephrotoxicity, gastrointestinal intolerance), prolonged hospitalization with associated complications such as deconditioning, venous thromboembolism, and healthcare-associated infections, including catheter-related bloodstream infections. While some studies suggest that

courses shorter than 14 days may be safe in selected patients with low-risk SAB, others suggest an increased risk of adverse outcomes. The panel concluded that the balance of benefits and harms most likely favors a 14-day antibiotic course over longer or shorter durations. This approach aims to maximize the likelihood of clinical cure, prevent relapse or dissemination, reduce mortality, and minimize treatment-related harm.

Costs
Shorter courses (<14 days) may lower initial costs but risk higher rates of treatment failure, recurrence, and hospital readmission. Conversely, longer courses (> 14 days) increase costs through prolonged hospitalization, outpatient parenteral antibiotic therapy (OPAT), or extended oral regimens.

Although formal cost-effectiveness analyses are needed, the panel considered 14 days of therapy likely to be more cost-effective than shorter or longer durations, balancing efficacy with resource utilization and harm mitigation.

Feasibility
While healthcare system resources vary globally, the panel judged that a 14-day treatment course is acceptable and feasible in most clinical settings.

Implementation Considerations for the adult population

Practical advice

- SAB should not be treated for <14 days unless guided by infectious disease specialists, after careful risk assessment, and accompanied by close follow-up.
- Durations > 14 days are not indicated for patients with low-risk SAB. However, if a deep-seated or metastatic focus of infection is subsequently found which merits a treatment duration of longer than 14 days, then this should dictate the final treatment duration even if the patient was initially stratified as low-risk SAB as outlined in Consensus Statement 1.
- Follow-up blood cultures should be collected at 48 hours of the first positive blood culture (Consensus Statement 2).
    - FUBC may be obtained earlier than 48 hours after sampling of the first positive blood culture, but these should not replace the cultures at 48 hours.
- In the event of delayed follow-up blood culture collection and documentation of blood culture clearance, an individualized assessment should be made considering time of follow-up blood culture collection and clinical response to determine whether such results can guide a 14-day duration of therapy.
- If a good quality TTE (Consensus Statement 3) is not possible, and TEE cannot be performed (Consensus Statement 4), an individualized assessment guided by infectious disease specialists should be made considering clinical suspicion for endocarditis and clinical response to determine whether such results can guide a 14-day duration of therapy.
- All patients with SAB should be educated about signs and symptoms warranting medical re-evaluation, including those suggestive of previously undetected deep-seated or metastatic infection. Standardized discharge instructions and early post-discharge follow-up may also be considered.

Barriers

Barriers to implementing a 14-day regimen may include limited access to outpatient antibiotic infusion and inpatient TTE as well as variation in discharge practices—for example, discharge immediately after blood culture clearance versus after completion of therapy. Transition to oral therapy or long-acting glycopeptides (e.g., dalbavancin) may help overcome some of these challenges [26, 29]. Because close post-discharge follow-up can help assess for infection resolution and any new signs and symptoms that suggest relapse or previously undetected sites of infection, limited access to follow-up may also be a barrier.

Research needs for the adult population

The panel identified a critical need for randomized controlled trials to evaluate whether shorter durations of therapy, such as 10 or 7 days, could achieve outcomes comparable to 14 days in patients with low-risk SAB without evidence of deep-seated or metastatic foci. The ongoing SAB7 trial [30], comparing 7 versus 14 days of treatment in "uncomplicated SAB", is expected to address this question. Further research should refine the definition of low-risk SAB, validate risk stratification approaches, and identify optimal diagnostic strategies to exclude deep-seated infections.

Pediatrics perspective

Summary of the literature review for the pediatric population

As outlined in Consensus Statement 1, data from pediatric populations are limited and do not allow for reliable identification of children with SAB who are at low risk for deep-seated or metastatic infections or relapse. Additionally, in children, such complications are often evident at presentation; clinical examination and diagnostic evaluation reveal a focus of infection in 80–95% of children with SAB over one month of age [31-35]. Treatment duration in these cases is typically determined by the nature of the infection (e.g., its location, severity, and response to therapy), though practices vary widely.

Direct studies comparing different durations of antibiotic treatment in pediatric SAB are scarce. In a small randomized controlled trial (n=69) comparing 7 versus 14 days of antibiotics for culture-positive sepsis in a neonatal unit, treatment failure was more common in the SAB subgroup (n=14) treated for 7 days (4/7) compared to 14 days (0/7; P=0.022) [36]. However, the study was underpowered to adjust for confounders, and the findings may not be generalizable to older children due to neonates' unique vulnerability to *S. aureus* infections.

In practice, treatment duration for children without evidence of deep-seated or metastatic foci of infection or relapse varies. A survey of 992 pediatricians in Spain reported antibiotic duration preferences for "uncomplicated SAB" as follows: 7–14 days (44%), 14–21 days (43%), and 21–28 days (12.8%) [37]. Two studies evaluating the impact of infectious disease consultation on SAB outcomes reported inconsistent definitions of appropriate treatment duration: one considered at least 7 days of IV antibiotics appropriate for uncomplicated MSSA and at least 14 days for MRSA [38], while another required a minimum of 14 days for children with primary bacteremia or unidentified sources [39]. In the second study, even among children receiving infectious diseases consultation, treatment durations varied widely (median: 14 days; IQR: 2–16 days) [39]. Interestingly, no significant difference in treatment duration for SAB without focus was observed between children with treatment failure (defined as a composite of 90-day all-cause mortality or all-cause hospital readmission; n=26; median 8.5 days; IQR 0-21days) and those with treatment success (n=25; median 10 days; IQR 4-16 days). Such findings suggest that durations of therapy < 14 days may be reasonable for at least a subset of children outside the neonatal period. Early transition to oral therapy in children with SAB secondary to deep infections (such as osteomyelitis)

is increasingly common [40]. Notably, the safety of oral transition in combination with abbreviated overall treatment duration remains unclear, and clinicians should consider this when making decision regarding both duration and route of therapy.

Rationale for the Consensus Statement for the Pediatric Population
Given the limited data on optimal antibiotic duration in children with SAB without complications, and recognizing some indirect evidence supporting durations of <14 days, the panel suggests:

- Otherwise, healthy children over one month of age with SAB and no evidence of deep-seated or metastatic foci of infection may be treated with 14 days of antibiotic therapy.
- Neonates should be treated for 14 days, based on limited evidence.

These suggestions assume a thorough evaluation for deep-seated or metastatic foci of infection, blood culture clearance documented within 48 hours of the first blood culture, and clinical and laboratory evidence of appropriate clinical response to treatment.

Inadequate duration of antibiotic treatment could result in relapse of infection, but vigilant monitoring by caregivers for signs and symptoms of potential relapse and prompt medical access can mitigate harm. Longer courses of treatment carry risks including unnecessary prolonged hospitalization, procedural complications (e.g., central line placement, often requiring anesthesia), antibiotic-related adverse events, and healthcare costs. Based on reported treatment durations, a 14-day course appears feasible for most children, especially when transition to oral antibiotic therapy is used.

Implementation considerations for the pediatric population

Practical Advice

While children with SAB without evidence of a deep-seated or metastatic focus of infection should in general be treated with 14 days of antibiotics, there are some limited data to support shorter durations. Shorter durations, with a minimum of 7 days of effective therapy, may be reasonable in select cases based on individual clinical evaluation when close follow-up can be ensured, ideally supported by infectious diseases consultation. Clinicians should consider the following when determining the duration of treatment in pediatric patients with SAB without evidence of deep-seated or metastatic foci of infection or relapse:

- Certainty with which deep-seated or metastatic foci of infection have been excluded
- Rate of clinical improvement and resolution of inflammatory markers in blood
- Caregiver's ability to detect and respond to relapse by seeking prompt medical care
- Medication-related adverse events

Barriers

- Identification of children who do not have deep-seated or metastatic foci of infection may be limited by the availability of investigations such as magnetic resonance imaging (MRI) and echocardiography, particularly for the youngest children and neonates.
- Antibiotic therapy in children presents unique challenges. Peripheral IV access can be difficult and distressing; central line placement may require sedation, anesthesia, or transfer to specialized centers.
- Oral antibiotic adherence may be inconsistent.

- A pragmatic, individualized approach is required—balancing clinical needs with patient/family preferences and treatment feasibility.

Research needs for the pediatric population

Further studies are needed to determine the optimal duration of therapy for children with SAB. In particular, additional research is needed to identify the minimum effective duration of treatment for children with SAB without deep or metastatic foci of infection or relapse. Likewise, further work is needed to understand if different approaches are needed in neonates/young infants relative to older children.

Limitations

This manuscript was developed using a consensus-based methodology rather than a formal clinical practice guideline process. Although a comprehensive literature review was performed, formal systematic review methods and structured evidence grading were not required. Consensus statements reflect a synthesis of available evidence and expert clinical judgment, particularly in areas where high-quality randomized data and systematic reviews are limited. In this SAB guideline project, where clinical presentations are heterogeneous and many management questions lack definitive trial data, this approach allows translation of imperfect but clinically relevant evidence into practical consensus statements.

Acknowledgments

We would like to acknowledge the contributions of Elena Guadagno, medical librarian, for the creation and execution of question-specific literature searches. We thank Loretta Dzanya and Senam Attipoe for the project coordination. We would also like to acknowledge the following organizations and selected reviewers for providing constructive feedback on the draft manuscript: American Society of Health-System Pharmacists (ASHP), ESCMID, Pediatric Infectious Diseases Society (PIDS), Society for Healthcare Epidemiology of America (SHEA), Society of Infectious Diseases Pharmacists (SIDP), Stan Deresinski, Robert Krause, Andre Kalil, and Justin Searns. The panel also acknowledges the contributions of the Standards and Practice Guidelines Subcommittee.

Luke Strnad (manuscript and subgroup co-lead), Bo Shopsin (manuscript co-lead), Marisa Holubar, Achim J. Kaasch (subgroup co-lead), and François Vandenesch (co-chair at ESCMID) contributed to screening, data abstraction, conception and design of the analysis, interpretation of data, drafting, revision, and final approval of the consensus statement and manuscript. Aubrey Cunnington and J. Chase McNeil served as co-leads for the pediatrics section and contributed to data abstraction, interpretation of data, revision, and final approval of the consensus statement and manuscript. Catherine Liu (panel chair at IDSA), Henry F. Chambers (co-chair at IDSA), François Vandenesch (co-chair at ESCMID), and Winfried V. Kern (co-chair at ESCMID) oversaw and guided the whole process of consensus statement development and contributed to the interpretation of the data, revision and final approval of the consensus statement and manuscript. Remaining panelists contributed to the interpretation of data, drafting, revision, and final approval of the consensus statement and manuscript. Lara A. Kahale, the current methodologist, contributed to project management, screening, data interpretation, guiding the panel through the drafting of the consensus statement, and drafting the manuscript and supplementary files. Nigar Sekercioglu, the former methodologist was responsible for project management, screening, designing, and supporting the panel through the process.

Disclaimer*:* It is important to recognize that guidelines cannot always account for individual variation among patients. They are assessments of current scientific and clinical information

provided as an educational service; are not continually updated and may not reflect the most recent evidence (new evidence may emerge between the time information is drafted and when it is published or read); should not be considered inclusive of all proper methods of care, or as a statement of the standard of care; do not mandate any course of medical care; and are not intended to supplant clinician judgment with respect to particular patients or situations. Whether to follow guidelines and to what extent is voluntary, with the ultimate determination regarding their application to be made by the clinician in the light of each patient's individual circumstances. While IDSA makes every effort to present accurate, complete, and reliable information, these guidelines are presented "as is" without any warranty, either express or implied. IDSA (and its officers, directors, members, employees, and agents) assume no responsibility for any loss, damage, or claim with respect to any liabilities, including direct, special, indirect, or consequential damages, incurred in connection with these guidelines or reliance on the information presented.

Additional Information: More detailed information on the analysis and development of consensus statements is available in the Supplemental Materials document.

Funding: This guideline has been funded and supported by the Infectious Diseases Society of America.

References

1. Ghanem-Zoubi, N., et al., *Integration of FDG-PET/CT in the diagnostic workup for Staphylococcus aureus bacteremia: a prospective interventional matched-cohort study.* Clinical Infectious Diseases, 2021. **73**(11): p. e3859-e3866.
2. Kaasch, A.J., et al., *Staphylococcus aureus bloodstream infection: a pooled analysis of five prospective, observational studies.* Journal of Infection, 2014. **68**(3): p. 242-251.
3. Souli, M., et al., *Changing characteristics of Staphylococcus aureus bacteremia: results from a 21-year, prospective, longitudinal study.* Clinical Infectious Diseases, 2019. **69**(11): p. 1868-1877.
4. Liu, C., et al., *Clinical practice guidelines by the infectious diseases society of america for the treatment of methicillin-resistant Staphylococcus aureus infections in adults and children: executive summary.* Clin Infect Dis, 2011. **52**(3): p. 285-92.
5. van der Vaart, T.W., et al., *The utility of risk factors to define complicated Staphylococcus aureus bacteremia in a setting with low methicillin-resistant S. aureus prevalence.* Clinical Infectious Diseases, 2024. **78**(4): p. 846-854.
6. Abbas, M., et al., *Association between treatment duration and mortality or relapse in adult patients with Staphylococcus aureus bacteraemia: a retrospective cohort study.* Clinical Microbiology and Infection, 2020. **26**(5): p. 626-631.

7. Ariaans, M.B., et al., *Increased overall survival after introduction of structured bedside consultation in Staphylococcus aureus bacteraemia.* European Journal of Clinical Microbiology & Infectious Diseases, 2018. **37**: p. 1187-1193.
8. Asgeirsson, H., et al., *Staphylococcus aureus bacteraemia–Nationwide assessment of treatment adequacy and outcome.* Journal of Infection, 2011. **62**(5): p. 339-346.
9. Blyth, C., et al., *Evaluation of clinical guidelines for the management of Staphylococcus aureus bacteraemia.* Internal medicine journal, 2002. **32**(5-6): p. 224-232.
10. Chang, F.Y., et al., *Staphylococcus aureus bacteremia: recurrence and the impact of antibiotic treatment in a prospective multicenter study.* Medicine (Baltimore), 2003. **82**(5): p. 333-9.
11. Chong, Y.P., et al., *Treatment duration for uncomplicated Staphylococcus aureus bacteremia to prevent relapse: analysis of a prospective observational cohort study.* Antimicrobial agents and chemotherapy, 2013. **57**(3): p. 1150-1156.
12. El Zakhem, A., et al., *Central line-associated bloodstream infections caused by Staphylococcus aureus in cancer patients: clinical outcome and management.* Annals of medicine, 2014. **46**(3): p. 163-168.
13. Fätkenheuer, G., et al., *Long-term outcome and quality of care of patients with Staphylococcus aureus bacteremia.* European Journal of Clinical Microbiology and Infectious Diseases, 2004. **23**: p. 157-162.
14. Johnson, L.B., et al., *Staphylococcus aureus bacteremia: compliance with standard treatment, long-term outcome and predictors of relapse.* Scandinavian journal of infectious diseases, 2003. **35**(11-12): p. 782-789.
15. Kim, C.-J., et al., *Impact of antimicrobial treatment duration on outcome of Staphylococcus aureus bacteraemia: a cohort study.* Clinical Microbiology and Infection, 2019. **25**(6): p. 723-732.
16. Kreisel, K., et al., *Risk factors for recurrence in patients with Staphylococcus aureus infections complicated by bacteremia.* Diagnostic microbiology and infectious disease, 2006. **55**(3): p. 179-184.
17. Platts, S., et al., *Oral step-down for Staphylococcus aureus bacteraemia: an opportunity for antimicrobial stewardship?* Clinical infection in practice, 2022. **16**: p. 100202.
18. Taupin, D., et al. *Uncomplicated Staphylococcus aureus bacteremia treatment duration and outcomes at an academic medical center*. in *Open Forum Infectious Diseases*. 2020. Oxford University Press US.
19. Thorlacius-Ussing, L., et al., *Comparable outcomes of short-course and prolonged-course therapy in selected cases of methicillin-susceptible Staphylococcus aureus bacteremia: a pooled cohort study.* Clinical Infectious Diseases, 2021. **73**(5): p. 866-872.
20. Kempley, S., et al., *Antibiotic treatment duration and prevention of complications in neonatal Staphylococcus aureus bacteraemia.* J Hosp Infect, 2015. **91**(2): p. 129-35.
21. Grillo Perez, S., et al., *Short-term versus usual-term antibiotic treatment for uncomplicated Staphylococcus aureus bacteremia: a systematic review and meta-analysis.* Therapeutic advances in infectious disease, 2024. **11**: p. 20499361241237615.
22. Schnizer, M., et al., *Long versus short course anti-MICROBIAL therapy of uncomplicated STAPHYLOCOCCUS aureus bacteraemia: a systematic review.* Clinical Microbiology and Infection, 2024.
23. Zanichelli, V., F. Olearo, and A.M. Aiken, *Impact of shorter (< 14 days) antibiotic treatment duration in adults with uncomplicated Staphylococcus aureus bacteremia: A systematic review and meta-analysis.* Clinical Infection in Practice, 2024. **21**: p. 100346.
24. Evans, R.N., et al., *The effect of duration of therapy for treatment of Staphylococcus aureus blood stream infection: an application of cloning to deal with immortal-time bias in an analysis of data from a cohort study (BSI-FOO).* Journal of Antimicrobial Chemotherapy, 2023. **78**(1): p. 196-204.

25. Zeylemaker, M., et al., *Long-term infectious complications and their relation to treatment duration in catheter-related Staphylococcus aureus bacteremia.* European Journal of Clinical Microbiology and Infectious Diseases, 2001. **20**: p. 380-384.
26. Kaasch, A.J., et al., *Efficacy and safety of an early oral switch in low-risk Staphylococcus aureus bloodstream infection (SABATO): an international, open-label, parallel-group, randomised, controlled, non-inferiority trial.* The Lancet Infectious Diseases, 2024. **24**(5): p. 523-534.
27. Kaasch, A.J., et al. *Effect of clinically uninfected orthopedic implants and pacemakers/AICDs in low-risk Staphylococcus aureus bloodstream infection on crude mortality rate: a post hoc analysis of a large cohort study*. in *Open Forum Infectious Diseases*. 2019. Oxford University Press US.
28. Nambiar, K., et al., *Survival following Staphylococcus aureus bloodstream infection: A prospective multinational cohort study assessing the impact of place of care.* J Infect, 2018. **77**(6): p. 516-525.
29. Turner, N.A., et al., *Dalbavancin for Treatment of Staphylococcus aureus Bacteremia: The DOTS Randomized Clinical Trial.* JAMA, 2025. **334**(10): p. 866-77.
30. Thorlacius-Ussing, L., et al., *Efficacy of seven and fourteen days of antibiotic treatment in uncomplicated Staphylococcus aureus bacteremia (SAB7): study protocol for a randomized controlled trial.* Trials, 2019. **20**: p. 1-8.
31. Campbell, A.J., et al., *Pediatric Staphylococcus aureus Bacteremia: Clinical Spectrum and Predictors of Poor Outcome.* Clin Infect Dis, 2022. **74**(4): p. 604-613.
32. Cardenas-Comfort, C., et al., *Follow-up Blood Cultures in Children With Staphylococcus aureus Bacteremia.* Pediatrics, 2020. **146**(6).
33. Ligon, J., et al., *Staphylococcus aureus bacteremia without a localizing source in pediatric patients.* Pediatr Infect Dis J, 2014. **33**(5): p. e132-4.
34. McMullan, B.J., et al., *Epidemiology and Mortality of Staphylococcus aureus Bacteremia in Australian and New Zealand Children.* JAMA Pediatr, 2016. **170**(10): p. 979-986.
35. Perez, M.G., et al., *Risk factors for the appearance of secondary foci of infection in children with community-acquired Staphylococcus aureus bacteraemia. Cohort study 2010–2016.* Enfermedades infecciosas y microbiologia clinica (English ed.), 2018. **36**(8): p. 493-497.
36. Chowdhary, G., S. Dutta, and A. Narang, *Randomized Controlled Trial of 7-Day vs. 14-Day Antibiotics for Neonatal Sepsis.* Journal of Tropical Pediatrics, 2006. **52**(6): p. 427-432.
37. Rodríguez-Molino, P., et al., *Duration of antibiotic therapy among paediatricians: A national survey of current clinical practice in Spain.* International Journal of Antimicrobial Agents, 2023. **62**(1): p. 106805.
38. Duguid, R.C., et al., *Impact of Infectious Diseases Consultation on Management and Outcome of Staphylococcus aureus Bacteremia in Children.* Journal of the Pediatric Infectious Diseases Society, 2020. **10**(5): p. 569-575.
39. Whittington, K.J., et al., *The impact of infectious diseases consultation for children with Staphylococcus aureus bacteremia.* Pediatric research, 2022. **92**(6): p. 1598-1605.
40. Woods, C.R., et al., *Clinical Practice Guideline by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America: 2021 Guideline on Diagnosis and Management of Acute Hematogenous Osteomyelitis in Pediatrics.* J Pediatric Infect Dis Soc, 2021. **10**(8): p. 801-844.