



AMERICAN ACADEMY OF  
ORTHOPAEDIC SURGEONS

# The Management of Surgical Site Infections Systematic Literature Review

## Companion Consensus Statement

*All statements in this document reflect the expert opinion of a multidisciplinary panel of experts. Companion consensus statements are created due to a lack of evidence on the topic under study. Prior to the creation of companion consensus statements, a systematic literature search is performed in an effort to find relevant literature. For evidence-based statements, please visit the Systematic Literature Review on the Postoperative Management of Surgical Site Infections.*

## **Disclaimer**

This companion consensus statement document was developed by a multidisciplinary physician volunteer guideline development group based expert opinion. This companion consensus statement document is not intended to be a fixed protocol, as some patients may require more or less treatment or different means of diagnosis. Patient care and treatment should always be based on a clinician's independent medical judgment, given the individual patient's clinical circumstances.

## **Disclosure Requirement**

In accordance with AAOS policy, all individuals whose names appear as authors or contributors to this companion consensus statement document filed a disclosure statement as part of the submission process. All panel members provided full disclosure of potential conflicts of interest prior to voting on the companion consensus statement document contained within this document.

## **Funding Source**

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## **FDA Clearance**

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## **Methodology**

During the development of the evidence-based Management of Surgical Site Infections Systematic Literature Review (visit [OrthoGuidelines](#) to view this review) development group had the option to create companion consensus statements for any PICO questions which returned no evidence after the systematic literature review was conducted.

Companion consensus statements for this systematic literature review were created using the following steps:

- 1) During the final meeting, where the work group constructed recommendations based on the systematic literature review, the work group was given the opportunity to construct consensus statements for any PICO questions which returned no evidence.
- 2) If the work group felt that a consensus statement was warranted, they formed the language as a group and voted to approve the consensus recommendation for inclusion in this document.

## Companion Consensus Statements

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### Surgical Timing

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**In the absence of reliable evidence, it is the opinion of the work group that irrigation and debridement are the cornerstones of successful management of surgical site infections and timely management is crucial, especially in the setting of orthopaedic implants.**

#### Risks/Harms

The work group acknowledges the inherent risks of any surgery.

#### Future Research

Future higher quality research is necessary to explore the relationship between infection and surgical management especially regarding the optimal timing for successful outcome.

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### Timing and Implant Removal

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**In the absence of reliable evidence, it is the opinion of the work group that implants should be removed if clinically safe and feasible due to the development of biofilm creating a barrier to successful treatment.**

#### Rationale

Regarding the role of implant removal associated with SSI, there is a paucity of research and evidence regarding the optimal implant management. The decision to retain or remove implants based on the clinical situation balancing morbidity of removal with clearance of infection. While implant retention may be necessary in many cases, it is the recommendation of this committee that implants should be removed if clinically appropriate and feasible due to the development of biofilm as a barrier to successful treatment.

#### Risks/Harms

There are no known harms associated with implementation of this recommendation

#### Future Research

The literature is lacking in quality evidence addressing the risks of retained implants. The total joint literature is attempting to address this question regarding prosthesis, but there remains a void in the research regarding other orthopaedic implants. Future studies should address this knowledge gap and attempt to identify the optimal timing and method of implant hardware exchange.

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## **Surgical Timing and Percutaneous Drainage**

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**In the absence of reliable evidence, it is the opinion of the work group that the definitive strategy to successfully treat surgical site infections is thorough debridement.**

### **Risks/Harms**

Barring the inherent risks of any surgery, there are no known harms associated with implementation of this recommendation.

### **Future research**

Although percutaneous drainage is an established first-line therapeutic consideration for a variety of infected fluid collections, there is a paucity of data supporting its use for fluid collections following orthopaedic surgical procedures. Future research may explore the value of percutaneous drainage of infected fluid collections in the setting of orthopaedic surgical site infection.

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## **Adjunctive Treatment**

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**In the absence of reliable evidence, it is the opinion of the work group that adjunctive treatment is of limited value in the management of surgical site infections.**

### **Rationale**

1. There is consensus opinion that local delivery of antibiotics could be beneficial in the management of surgical site infections.
2. In the absence of available evidence, there is no benefit in the use of topically applied antibiotics.
3. The workgroup believes that there is lack of quality evidence for or against the use of negative pressure wound therapy in the treatment of surgical site infections.
4. The consensus of the workgroup is that there is no benefit in the use of antibiotics or antiseptics in irrigation solution in the management of these infections.
5. There is consensus opinion that appropriate soft-tissue coverage of open wounds is advantageous in the treatment of surgical site infections.
6. The workgroup believes that there is no quality literature that supports the use of adjuvant hyperbaric oxygen therapy in the treatment of patients with surgical site infections.
7. Further research is required to develop high-quality evidence to support the use of these adjuvant treatments.

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## **Multidisciplinary Team**

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In the absence of reliable evidence, it is the opinion of the work group that patients with surgical site infections are optimally managed by a multidisciplinary team with expertise in the management of musculoskeletal infections. In addition to individual patient care management, multidisciplinary orthopaedic infection teams may strive to improve diagnostic capabilities, streamline care, create and maintain care pathways, coordinate discharge planning efforts, facilitate quality improvement efforts and improve patient education.

### **Rationale**

The composition of a multidisciplinary team will depend upon local resources; optimally the team should include orthopaedic surgeons and infectious disease experts. Others whose input would be valuable in some settings: include plastic surgeons and other wound care experts, pharmacists, nursing personnel, pathologists, microbiologists, radiologists, discharge planners, and home health providers. Infectious disease experts aid in the interpretation of diagnostic tests, selection of optimal antimicrobials based on microbial and host factors, and facilitation of safe antimicrobial administration oversight. Surgeons with soft tissue coverage expertise may be helpful. Physical therapists provide modalities to mitigate lost range of motion in associated joints, degreased muscle strength, general deconditioning and to control edema. Hospitalist medicine specialists and primary care providers are often necessary for optimization of patients' overall health. Laboratory personnel can assure proper acquisition, handling, and testing of specimens. Early planning for discharge is coordinated by discharge planning staff, pharmacy technicians, and home health care services.

# Development Group Roster

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## Voting Members

**1. Douglas Lundy, MD—Co-Chair**  
*Orthopaedic Trauma Association*

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