

IRISH ASSOCIATION FOR  
**EMERGENCY  
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IAEM Clinical Guideline 6

**Bite Wound Management in Adults and Children**

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**DISCLAIMER**

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guidelines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

## GLOSSARY OF TERMS

Infection was defined as:

- Presence of erythema
- Tenderness beyond that expected at 24 hours
- +/- Purulent discharge
- Cellulitis
- Lymphangitis
- Abscess formation

Puncture Wound was defined as:

- A wound that is deeper than it is wide

# Bite Wound Management in Adults and Children

## INTRODUCTION

Bite wounds are a common presentation to Emergency Departments (ED) accounting for up to 1% of all ED presentations. The Centre for Disease Control and Prevention suggests there are approximately 4.5 million dog bites per year, of which 20% require medical attention. 90% of bites attending ED are due to dog bites, followed by cat (5-10%) and human bites respectively.

Wound infection is the most common complication of bites, occurring in 2–30% of dog bites, 15–50% of cat bites, and 9–50% of human bites. There is a tendency for ED physicians to prescribe prophylactic antibiotics to all bite wounds. With the ever increasing emergence of drug-resistant bacteria, the importance of vigilant and evidence based prescribing cannot be over emphasized.

Despite studies being carried out over the past thirty years, practice varies considerably between departments and practitioners. Results of the meta-analysis on dog bites suggest that prophylactic antibiotics reduce the risk of wound infection by nearly half. Conversely, the Cochrane systematic review, which included 6 of the studies from the meta-analysis, concluded that the use of prophylactic antibiotics is not associated with a statistically significant reduction in infection.

Nearly all studies included in this review emphasised the importance of local wound care to prevent infection. They also agreed that initial culture of wounds does not predict which wounds will subsequently develop a wound infection. Wounds including puncture wounds and

hand wounds appear to have a higher risk of infection (NNT=4). In the majority of cat bites, the mechanism appears to be a puncture wound, making them potentially high risk.

There is little evidence for antibiotic prophylaxis in low risk bite wounds. Low risk is defined as bite wounds, which present to the ED less than 24 hours after the injury, not involving bone, joint or tendon, and not infected on arrival. The patients must be immunocompetent to be included in low risk category. The importance of irrigation and debridement of all wounds cannot be emphasised enough. Reptiles and in particular seal bites have unusual microbiology that is resistant to most antibiotics (seek specialist advice from ID team).

These guidelines have been developed to act as a resource for medical and nursing staff and other members of the multidisciplinary ED team to aid in bite wound management in adults and children. These guidelines are not intended to replace clinical judgement.

## PARAMETERS

### **Target Audience:**

This guideline is intended for use by emergency medicine clinicians and advanced nurse practitioners involved in the early management of patients with bite wounds.

### **Patient Population:**

Patients (Adults and children) who presented to ED following a dog, cat or human bite.

### **High risk wound:**

- Bite wound > 24 hours old at presentation
- Wound in immunocompromised patients
- Signs of infection
- Wound involving bone, tendon or joint
- Hand wound
- Puncture wound

### **Low risk wound:**

- Bite wound < 24 hours
- No sign of infection
- No bone, tendon or joint involvement
- No puncture wound
- Does not involve the hand
- Immunocompetent

## AIM

To ensure appropriate bite wound management in children and adults. In an era of increasing antibiotic resistance, appropriate prescribing is crucial.

## ASSESSMENT

Assessment of patients should be performed by an ED clinician or advanced nurse practitioner.

When taking a history the following details are important to ask:

- Source of bite
- Time of injury
- Site, number, and depth of bite
- Tetanus and hepatitis status (hepatitis status only in human bites)
- Immunodeficiency

Initial assessment of a bite wound should include the following:

- Location of wound
- Size and depth of the wound
- Degree of injury (devitalized tissue, nerve or tendon damage, involvement of bones, joints or blood vessels)

- Presence or absence of infection

- Foreign body

**Figure 1: Algorithm for Bite Wound Management in Adults and Children**

