



Animal Bites (Mammal) Clinical Pathway Synopsis

Animal Bites (Mammal) Algorithm

Exclusion criteria:

- Patients < 2 months of age
- Non-mammal bites
- Superficial bites that have not penetrated the skin

Considerations when determining need for imaging:

- Bone or joint involvement
- Head involvement
- Suspected fracture
- Retained foreign body
- Infected with concern for abscess

Indications for prophylactic antibiotics:

- Moderate or severe wounds, especially if edema or crush injury is present
- Puncture wounds, especially if penetration of bone, tendon sheath, or joint occurred
- Deep or sutured facial wounds
- Hand or foot involvement
- Genital area involvement
- Immunocompromised, including asplenic patients
- All cat bites

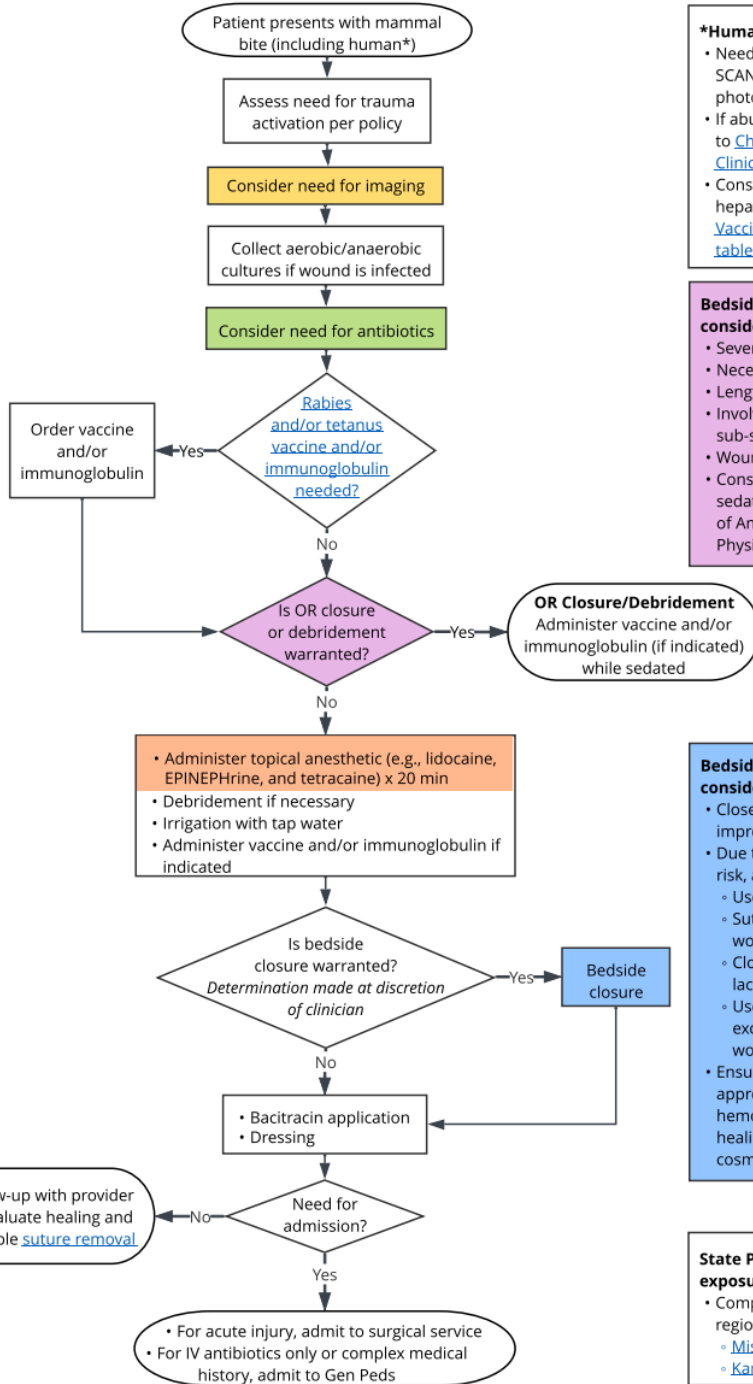
Indications for antibiotic treatment:

- Signs of infection

[See Antibiotics table](#)

Lidocaine dosing:

- CM sites utilize 1% lidocaine (10 mg/mL) formulations
- Recommended maximum dose = 4.5 mg/kg/dose (max 300 mg/dose)
- Link to [lidocaine dosage calculator](#)



***Human bite considerations**

- Need for involvement of SCAN, Social Work, forensic photos
- If abuse is suspected, refer to [Child Physical Abuse Clinical Pathway](#)
- Consider risk factors for hepatitis, HIV ([see Vaccine/Immunoglobulin table](#))

Bedside vs. OR closure considerations

- Severity of injury
- Necessary level of sedation
- Length of procedure
- Involvement of multiple sub-specialists
- Wound complexity
- Consider safety of ED sedation / American Society of Anesthesiologists (ASA) Physical Status Classification

Bedside closure considerations:

- Close facial wounds to improve cosmetic outcomes
- Due to increased infection risk, avoid:
 - Use of medical glue
 - Sutures for puncture wounds
 - Closing extremity lacerations after 12 hours
 - Use of deep sutures except for large, gaping wounds
- Ensure closure is loosely approximated to achieve hemostasis, improve time to healing and help with cosmetic outcomes

State Public Health Rabies exposure forms

- Complete appropriate regional forms as indicated
 - [Missouri](#)
 - [Kansas](#)

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Objective of Clinical Pathway

The objective of this clinical pathway is to provide care standards for patients presenting with mammalian animal bites, including human bites. This pathway provides guidance for management of animal bites including patient assessment, imaging, treatment, vaccination, and wound closure.

Background

Mammalian animal bites, including human bites, can be a significant cause of morbidity and require appropriate management to prevent infection and promote healing (Goldstein & Abrahamian, 2021). Consideration must be given to the source, location, and severity of the bite wound when making care decisions. This clinical pathway seeks to address existing gaps in providing standardized care from the patient's presentation to the care facility through decisions to perform imaging, provide optimal antibiotic therapy and vaccination, and determine the need and process for wound closure while involving the appropriate medical service teams.

Target Users

- Physicians (Emergency Medicine, Urgent Care, Hospital Medicine, Primary Care, Ambulatory Clinics, Fellows, Residents)
- Advance Practice Providers
- Nurses
- Pharmacists

Target Population

Inclusion Criteria

- Patients \geq 2 months of age presenting with mammalian animal bites (including human bites)

Exclusion Criteria

- Patients < 2 months of age
- Non-mammalian animal bites
- Superficial bites that have not penetrated the skin

Practice Recommendations

In lieu of a clinical practical guideline fully addressing the management of mammalian animal bite wounds, guidance from the section "Animal and Human Bite Wounds Prevention and Treatment" from the Infectious Diseases Society of America (IDSA) Clinical Practice Guidelines for the Diagnosis and Management of Skin and Soft Tissue Infections: 2014 Update by IDSA (Stevens et al., 2014), along with the Bite Wounds chapter from the American Academy of Pediatrics Red Book (Goldstein & Abrahamian, 2021) were used in conjunction with the expert consensus of the Animal Bites (Mammal) Clinical Pathway Committee to inform the antimicrobial treatment and vaccine/immunoglobulin guidance in this pathway.

Additional Questions Posed by the Clinical Pathway Committee

No clinical questions were posed for this review.

Measures

- Utilization of the Animal Bites (Mammal) Clinical Pathway
- Utilization of appropriate antimicrobial therapy, vaccines, and immunoglobulin therapy

Value Implications

The following improvements may increase value by reducing healthcare costs and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and families and reducing costs and resource utilization for healthcare facilities.

- Decreased risk of inappropriate or inadequate antibiotic treatment
- Decreased risk of inappropriate or inadequate vaccine and/or immunoglobulin administration
- Decreased unwarranted variation in care

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Organizational Barriers and Facilitators

Potential Barriers

- Variability of acceptable level of risk among providers
- Challenges with follow-up faced by some families

Potential Facilitators

- Collaborative engagement across care continuum settings during clinical pathway development
- Anticipated high rate of use of the clinical pathway

Power Plans

- There are no power plans associated with this clinical pathway.

Associated Policies

- Emergency Department Management for Animal Bites and Guide for Handling Suspect Rabid Animals

Education Materials

- There are no educational materials associated with this clinical pathway.

Clinical Pathway Preparation

This pathway was prepared by the Evidence Based Practice (EBP) Department in collaboration with the Animal Bites (Mammal) Clinical Pathway Committee composed of content experts at Children's Mercy Kansas City. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

Animal Bites (Mammal) Clinical Pathway Committee Members and Representation

- Leslie Hueschen, MD | Emergency Department | Committee Co-Chair
- Allison Adam, MD | Emergency Department, Pediatric Fellow | Committee Co-Chair
- Alaina Burns, Pharm.D., BCPPS | Pharmacy | Committee Member
- Jessica Costalez, MD | Emergency Department | Committee Member
- Marsha Dannenberg, MD | Urgent Care | Committee Member
- Josh Herigon, MD, MPH, MBI | Infectious Diseases | Committee Member
- Elise Wright, DNP, APRN, CPNP AC-PC, CCRN | Surgery | Committee Member

EBP Committee Members

- Todd Glenski, MD, MSHA, FASA | Anesthesiology, Evidence Based Practice
- Megan Gripka, MT (ASCP) SM | Evidence Based Practice

Clinical Pathway Development Funding

The development of this clinical pathway was underwritten by the following departments/divisions: Emergency Department, Evidence Based Practice, Infectious Diseases, Pharmacy, Surgery, and Urgent Care.

Conflict of Interest

The contributors to the Animal Bites (Mammal) Clinical Pathway have no conflicts of interest to disclose related to the subject matter or materials discussed.

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Approval Process

- This pathway was reviewed and approved by the Animal Bites (Mammal) Clinical Pathway Committee, Content Expert Departments/Divisions, and the EBP Department; after which they were approved by the Medical Executive Committee.
- Pathways are reviewed and updated as necessary every 3 years within the EBP Department at CMKC. Content expert teams are involved with every review and update.

Review Requested

Department/Unit	Date Obtained
Emergency Department	January 2025
Evidence Based Practice	January 2025
Infectious Diseases	January 2025
Pharmacy	January 2025
Surgery	January 2025
Urgent Care	January 2025

Version History

Date	Comments
January 2025	Version one – Development of algorithm and corresponding antibiotic and vaccine/immunoglobulin tables

Date for Next Review

- 2028

Implementation & Follow-Up

- Once approved, the pathway was presented to appropriate care teams and implemented. Care measurements will be assessed and shared with appropriate care teams to determine if changes need to occur.
- Education was provided to all stakeholders:
 - Nursing units where the Animal Bites (Mammal) Clinical Pathway is used
 - Departments of Emergency Medicine, Infectious Diseases, Surgery, and Urgent Care
 - Resident physicians
- Additional institution-wide announcements were made via email, hospital website, and relevant huddles.

Disclaimer

When evidence is lacking or inconclusive, options in care are provided in the supporting documents and the power plan(s) that accompany the clinical pathway.

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References

- Emergency Services Management for Animal Bites and Guide for Handling Suspect Rabid Animals (August, 2024), The CMH Patient Care Services Emergency Department Manual. Children's Mercy Hospital, Kansas City, Missouri.
- Goldstein, E. J. C., & Abrahamian, F. M. (2021). Bite wounds. In D. W. Kimberlin, M. T. Brady, M. A. Jackson, & S. S. Long (Eds.), *Red Book: 2021 Report of the Committee on Infectious Diseases* (32nd ed., pp. 1407-1412). American Academy of Pediatrics. <https://publications.aap.org/redbook/book/755/chapter/14074929/Bite-Wounds>
- Stevens, D. L., Bisno, A. L., Chambers, H. F., Dellinger, E. P., Goldstein, E. J. C., Gorbach, S. L., Hirschmann, J. V., Kaplan, S. L., Montoya, J. G., & Wade, J. C. (2014). Clinical practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the *Infectious Diseases Society of America*. *Clinical Infectious Diseases*, 59(2), e10–e52. <https://www.idsociety.org/practice-guideline/skin-and-soft-tissue-infections/>

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