Document Control

Title **Protocol for the Management of Human Bites (over 2 years of age) in MIUs and ED**			
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Directorate Emergency Services, Logistics and Resilience		**Department** Emergency Department	
Version	**Date Issued**	**Status**	**Comment / Changes / Approval**
0.1	Apr 2015	Draft	Initial version for consultation
1.0	June 2015	Final	Approved by Liam Kevern (Clinician) and Chris Bowman (Clinical Director) June 2015 and published on Bob.
1.1	June 2015	Revision	Reviewed and amended Karen Watts / Fionn Bellis
1.2	May 2016	Revision	Additional information regarding blood-borne infection, referral criteria, updated references
1.3	Sept 2018	Update	Updated references, added additional diagnostic, referral, exclusion, self-care advice. Changed minimum age to 2 years after WICs have gone from NDHT. New Trust logo inserted into template. Submitted to ED consultants and approved. Approved by DTC 20th Sep 2018.
2.0	Dec 2020	Final	Updated references, inclusion of criteria in NICE antimicrobial prescribing assessment (Nov 2020). MIU lead contact details changed. Submitted to ED Consultant, MIU leads. Approved by IPDG April 2021.
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Document Class Standard Operating Procedure		**Target Audience** MIU Staff	
Distribution List MIU Emergency Department		**Distribution Method** Trust internal website	
Superseded Documents Protocol for the Management of Human Bites (over 2 years of age) v1.3 200918			
Issue Date Mar 2021	**Review Date** Feb 2024	**Review Cycle** Three years	

<table>
<tr><td>Consulted with the following stakeholders
ED Consultant
Antibiotic Working Group
MIU Leads</td><td>Contact responsible for implementation and monitoring compliance:
Professional Lead, Minor Injuries Unit

Education/ training will be provided by:
Professional Lead, Minor Injuries Unit</td></tr>
<tr><td colspan="2">Approval and Review Process
Lead Clinician for Emergency Department</td></tr>
<tr><td colspan="2">Local Archive Reference
G:\Policies and Protocols
Local Path
MIU
Filename
Protocol for the Management of Human Bites v1.4</td></tr>
<tr><td>Policy categories for Trust internal website (Bob)
MIU Protocols</td><td>Tags for Trust internal website (Bob)</td></tr>
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1. Purpose

1.1. This Management of Human Bites (in patients over 2 years of age) Protocol is for the use by staff employed by Northern Devon Healthcare Trust who have achieved the agreed clinical competencies to work under this procedure.

1.2. The Protocol applies to patients who are 2 years of age or over, and who present to MIU or ED with acute symptoms which have not been previously treated.

2. Presenting Symptoms

Scratch, laceration, evulsion or puncture injury, which may or may not lead to infection, or may already be demonstrating clear signs of infection.

Signs of infection may arise 24-72 hours following a bite:

- Localised cellulitis
- Pain
- Swelling
- Erythema
- Serosanguineous or purulent discharge
- Regional lymphadenopathy
- Fever
- Decreased range of movement

Other symptoms and signs:

- Loss of function

- Paraesthesia
- Foreign body (e.g. tooth fragment)

3. History

3.1. Refer to Protocol for History Taking and Clinical Documentation.

3.2. Ask about and document all findings fully – positive and negative in case of future litigation:

- Onset, duration and progression of symptoms
- How and when bite occurred
- Whether the skin was broken or blood was involved (from both biter and patient)
- Location, depth and appearance of bite wound(s) [diagrams or photographs may be useful, especially where referral is necessary]
- Risk factors for developing wound infection if no signs already present (diabetes, immunosuppression)
- Risk of serious internal bleeding e.g. on blood thinning medication, known clotting disorder
- Who the biter was in relation to the patient, and whether anything is known about them
    - ➢ Risk of acquiring a blood-borne infection (e.g. hepatitis B or C, HIV)
- NB. If story and bite wound do not appear to match, be aware that patients may not volunteer that the biter was a human due to fears of litigation. Additional careful questioning may be needed to get accurate identification of species.
- If concerns about the history or a child / young person / vulnerable adult patient is presenting with bite(s), refer to safeguarding
- The nature of the bite (occlusal or clenched fist)
- Force involved or crush injury
- First aid measures already taken before presenting to clinic

History of biter (if known):

- HIV positive
- Hepatitis B surface antigen (HBsAq) positive or hepatitis C positive
- Syphilis, rabies or recent history of foreign travel / unusual erratic behaviour out of character
- Known intravenous drug user / engages in other risky behaviours
- **Often status of biter will be unknown**

History of patient:

- HIV positive
- Hepatitis B surface antigen (HBsAq) positive or hepatitis C positive
- Check vaccination status for hepatitis B

- Tetanus immunisation status
- Other immune compromise
- Significant risks to be referred to Emergency Department
- Take an allergy history
- Take a medications history – particularly note blood thinning medication and immunosuppressants
- Ascertain if the patient has any long-term devices or previous surgical interventions in the area of the bite which could become compromised / infected due to the bite, such as: cerebral shunt ±drainage tubes (for bites on the head or neck), plates/rods or wires fixing bones in place, skin grafts, prostheses, mesh, cosmetic procedures, keyhole surgery
- Ask about first aid measures already taken, or treatments received if patient is returning with recurrence of symptoms
- Consult Labcentre and document any recent skin swab results, check MRSA status, ESBL status

4. Clinical Examination

Use ABCDE approach if patient is systemically unwell to include NEWS2 / PEWS recorded for onward referral

Examine the patient and document fully the following information, positive and negative findings in case of future litigation:

4.1. Observe patient's general appearance.

- Pallor
- Sweating or flushed
- Lethargy/malaise

4.2. Examine and if possible palpate the wound site using gloves [diagrams or photographs may be useful, especially where referral is necessary], looking for:

- Deep layers of tissue may move with positional changes after the bite injury, disguising the true depth of the wound.
- The size and depth of the injury.
  - An intercanine distance of less than 3 cm suggests a child bite; more than 3 cm suggests an adult bite.
- The type of wound (for example closed fist, laceration, puncture, abrasion, crush, haematoma, avulsion, amputation).
- The degree of crush injury, devitalized tissue, nerve or tendon damage, and involvement of muscle, bones, joints, or blood vessels.
- Examine wounds overlying a joint through the full range of motion to detect retracted injuries and tendon rupture.
- Neurovascular function in the area distal to the bite — check pulses and sensation.

- The range of movement of any adjacent joints.
- Any lymphadenopathy.
- The presence of any foreign bodies (for example teeth) in the wound.
- Any signs of infection (for example redness, swelling, induration, necrotic tissue, purulent discharge, pain, localized cellulitis, lymphangitis, lymphadenopathy, or fever).
- Facial bites: perform an intraoral examination to exclude cheek lacerations with an intraoral communication.
- Determine whether the person is at increased risk of the wound becoming infected, due to:
    - The nature of the bite (deep, contaminated wounds; puncture or crush wounds; significant tissue destruction / devitalisation).
    - Site of injury (for example hands, feet, face, or genitals; areas of poor perfusion or lymphatic return; cartilage and bony extremities or near a prosthetic joint implant).
    - Wound penetrating bone, joints, tendons, or vascular structures.
    - Delayed presentation (more than 8 hours after sustaining injury).
    - Associated medical conditions (for example diabetes mellitus, asplenia, immunocompromised status, chronic liver disease, prosthetic heart valve or joint).
    - Their age (neonates, infants, and elderly people are at higher risk of infection).

4.3. Record observations and document and act on the NEWS2 (or PEWS), referring to secondary care if required. Assess children under 5 who present with fever according to the NICE guideline or Trust protocol (both based on the same information) on feverish illness in under 5s:

- Blood pressure for all adult patients, child only if indicated by feverish illness traffic light risk assessment (see appendix)
- SaO2,
- CRT,
- Pulse,
- Respiratory rate
- Urine output (as a measure of dehydration)

4.4. **Although rare, suspect child maltreatment** if there is a report or appearance of a human bite mark that is thought unlikely to have been caused by a young child. Also consider safeguarding issues if a vulnerable adult receives a bite injury.

4.5. Investigations:

- X-ray for:
    - Clenched fist injuries to exclude presence of teeth and dental fragments or exclude bone damage
    - Crush injuries, suspected fractures or other foreign bodies
    - Request soft tissue views for foreign bodies

- Send sample of pus from wound for microbiology, if present
- Send blood cultures if patient has or reports history of fevers/rigors

5. Exclusions and Referral

5.1. Red flags to refer to the ED

- Blood vessel damage - significant bleeding from wound site, or haemorrhage
- Involvement of bones, nerves, tendons, or deep penetrating tissue injury
- Bite to the face / wound requires more technical suturing than can be performed in the MIU by Nurse Practitioner
- Foreign body which cannot be extracted safely by Nurse Practitioner (e.g. suspected to have damaged other internal structures, associated with significant bleeding, failed attempt(s), unco-operative patient who requires sedation); or suspected foreign body requiring radiological investigation
- Increased risk of wound infection due to:
  - The nature of the bite (deep, contaminated wounds; puncture or crush wounds; significant tissue destruction).
  - Site of injury (for example hands, feet, face, or genitals; areas of poor perfusion or lymphatic return; or near a prosthetic joint implant).
  - Wound penetrating bone, joints, tendons, or vascular structures.
  - Delayed presentation (more than 8 hours).
  - Associated medical conditions (for example diabetes mellitus, asplenia, immunocompromised status, chronic liver disease, prosthetic heart valve or joint).
  - Their age - (infants and elderly people are at higher risk of infection).
  - Bites to ear and nose cartilage
- Detached body tissue: Wrap body tissue (e.g. ears) in a clean tissue and store in a plastic bag with ice for transport to secondary care
- Positive history or high level of concern regarding blood-borne infection in biter (Hepatitis/ HIV / other)
- Pain out of proportion to the appearance of the injury
- Active infection in/around wound site, **with systemic symptoms** (e.g. fast heart rate, low blood pressure, patient appears unwell)
- Patients who are otherwise systemically unwell enough to warrant urgent review by a medical professional
- Previous treatment failure and severe symptoms
- Any safeguarding concerns – seek advice
- High risk for tetanus and requiring administration of human immunoglobulin
- Refer all children under 2 years of age to a medical practitioner
- Wound requires larger-scale debridement than is considered safe for Nurse practitioner to attempt in MIU setting

5.2. Refer the following patients to a medical practitioner for investigation and treatment on a less urgent basis, as symptoms dictate:

- Symptoms and signs suggesting mild infection and previous/current treatment failure
- Active infection in/around wound site, without systemic symptoms but with previous skin screening results positive for MRSA
- Older bite wounds which appear healed, but which need follow-up for HIV/Hepatitis screening, or where loss of function has since become apparent

6. Treatment Pathway

6.1. Initial management of bites:

- Encourage wound to bleed if it has just occurred, unless it is already bleeding freely
- Remove foreign bodies if competent to do so
- Irrigate thoroughly with warm water or sodium chloride 0.9%
- Do not close wound
- Administer analgesia as per PATIENT GROUP DIRECTION if required
- Apply non-adherent dressing
- Use results of risk assessment to ascertain need for tetanus prophylaxis and administer using PATIENT GROUP DIRECTION if required
- Patients who are otherwise well and have a human bite that has not broken the skin will not require antibiotics.
- Patients who are presenting 72 hours or more after receiving the bite, where there are no signs or symptoms of infection will not usually require antibiotics. Advise patient to continue monitoring the wound carefully and return for further assessment if concerned.

6.2. Prophylaxis of infection in high-risk individuals

- Patients who present within the first 72 hours of receiving a bite and who fall within the following criteria should be supplied with a 3-day course of antibiotics as per PATIENT GROUP DIRECTION to prevent infection:
  - All patients presenting with a human bite that has broken the skin and drawn blood
  - All patients presenting with a human bite that has broken the skin but not drawn blood in high-risk area such as the hands, feet, face, genitals, skin overlying cartilaginous structures, or an area of poor circulation.
  - Patients with a comorbidity at higher risk of infection (such as diabetes, immunosuppression, asplenia, or decompensated liver disease) presenting with a human bite that has broken the skin but not drawn blood.
  - Co-amoxiclav (first-line), or doxycycline and metronidazole for non-pregnant patients over 12 years who are allergic to penicillin
    - ⇨ Refer patients who are allergic to penicillin and pregnant or under 12 years old to a medical practitioner or non-medical prescriber

- After initial management of physical wound, (including provision of PGD antibiotics if necessary), carry out risk assessment on wound according to "Inoculation Injuries Policy" on BOB. https://www.northdevonhealth.nhs.uk/wp-content/uploads/2017/11/Management-of-Inoculation-Injuries-Policy-v4.0-Sept-2017.pdf
- Refer patients with high risk injuries for blood borne viruses for urgent assessment in ED, as per inoculation injuries policy.

6.3. Treatment for Infected Human Bite:

- Send pus or a deep wound swab for culture before cleaning wound
- See Management of Inoculation Injuries policy for details regarding risk assessment and referral criteria https://www.northdevonhealth.nhs.uk/wp-content/uploads/2017/11/Management-of-Inoculation-Injuries-Policy-v4.0-Sept-2017.pdf
- State on the microbiology form that the samples are from an infected human bite, blood-borne infection history from biter (if known) and any other details specified by the Management of Inoculation Injuries policy
- Record baseline observations including PEWS / EWS
- Supply 5 days of antibiotics for all infected human bite wounds assessed as suitable for treatment in the patient's usual place of residence, as per PATIENT GROUP DIRECTION
  - Co-amoxiclav (first-line), or doxycycline and metronidazole for non-pregnant patients over 12 years who are allergic to penicillin
- Refer patients who are allergic to penicillin and pregnant or under 12 years old to a medical practitioner or non-medical prescriber
- Apply non-adherent dressing
- Refer patients with severe infections or patients who are systemically unwell to the Emergency Department as intravenous antibiotics may be required
- Consider extended course of 7 days for large, deep, infected wounds or infected wounds around joints or areas with poor circulation

7. Discharge and Self-Care Advice

All human bites:

- Advise to observe for signs of infection and, if these develop, attend for urgent review
- Review infected wounds at 24 and 48 hours to ensure infection is responding to treatment
- Advise to attend for urgent review if they feel increasingly systemically unwell / new redness or swelling around wound / new appearance of tracking red lines away from wound / new abscess, pus or discharge / wound dehiscence or significant bleeding
- Advise to keep wound(s) clean and dry and avoid activities which might break the wound open again.

- Advise which type of dressing is most suitable for the wound if the patient needs to cover it for occupational reasons.
- Explain how often dressings should be changed and how to safely clean around the wound. For wounds requiring dressing by a Nurse, ensure referral to DNs / practice Nurse / ED follow-up clinic as appropriate, and that the patient/carer knows when to attend.
- Refer to GP for a fit note if using the wounded area of the body for work would impair recovery or affect ability to perform duties safely e.g. food preparation / exposure to excessive moisture / dirty environment / range of movement affected etc.
- If skin at the edges of the wound is dry and cracking, then an unscented non-medicated moisturising cream may be recommended. Products such as Doublebase® or E45® are suitable for this use and can be purchased over the counter in most shops and Pharmacies. *NB. Aqueous cream is licensed only as a soap substitute and should* ***not*** *be recommended for use as a leave-on moisturiser.*
- If blood borne virus testing is required, advise the patient that more than one test is required, over a number of months, to make sure of continued negative status. The results are usually followed up with their GP – the ED clinicians will be able to advise on precise timescales and when and where to present for follow-up screening

8. Discharge Pathway

- Ensure patient is issued with appropriate advice sheet (if available) and that patient understands the need to return if symptoms change or worsens.

DOCUMENTATION TO BE COMPLETED

- Clinical treatment record as per Documentation & record keeping policies. Copy of clinical treatment record to General Practitioner; to be sent to surgery as per Record keeping policy.
- For patients being transferred to secondary care, ensure a copy of the clinical treatment record is sent with patient. A copy will also be sent to surgery in normal manner.

For patients seeing their General Practitioner in next 24 hours ensure patient is given a copy of the clinical treatment record to take with them. A copy will also be sent to surgery in the normal manner.

BEFORE DISCHARGE ENSURE:

- Those patients who have been referred for further acute intervention has appropriate transport to meet their needs, all relevant treatment has been prescribed and administered and correct information and documentation is given to the patient.
- The patient understands that if condition deteriorates or they have further concerns they should seek further advice.

- The patient demonstrates understanding of advice given during consultation.
- The patient has been provided with written advice leaflet to re-enforce advice given during consultation.
- The patient demonstrates an understanding of how to manage subsequent problems.

9. References

- Clinical Knowledge Summaries (October 2020)
- British Natural Formulary, via Medicines Complete online
- BNF for children, via Medicines Complete online
- Public Health England Guidance on Tetanus, via https://www.gov.uk/government/collections/tetanus-guidance-data-and-analysis (accessed 2nd December 2020)
- Patient Group Direction Policy (2015, extended April 2020)
- North and East Devon Formulary – Skin and Soft Tissue Infections, via https://northeast.devonformularyguidance.nhs.uk/formulary/chapters/5.-infections/skin-infections (accessed 2nd December 2020)
- The Green Book – Immunisation Against Infectious Disease, online via www.gov.uk
- Management of Inoculation Injures Policy v5.0 (2019)

APPENDIX A – Essential Documentation for All Patients Attending Unit or Centre

Adults Consent

Gain consent to be seen by a nurse practitioner

Gain consent for treatment and sharing information

Clinical Presentation

If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Document a full set of observations including neurological observations including Glasgow coma score if applicable.

Record NEWS2: if 7 or above arrange immediate transfer to secondary care.

Document pain score using numeric rating scale. For cognitively impaired patients document any signs of pain (e.g. grimaces or distress).

Safeguarding

- Assess for mental capacity and if person is a vulnerable adult.
- Assess for learning disability and whether patient has a hospital passport in place.
- Assess for risk of domestic abuse.
- Assess falls risk. Complete falls referral if applicable.
- Document names of persons accompanying patient.

APPENDIX B – Essential Documentation for All Patients Attending Unit or Centre

Child and Young Persons under 18 Years Old Consent

Gain consent to be seen by a nurse practitioner

Gain consent for treatment and sharing information

Assess and document Gillick competency according to Fraser guideline if applicable.

Document name of person(s) accompanying patient.

Clinical Presentation

If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Record PEWS: if any one parameter is triggered transfer to secondary care or seek advice from medical practitioner.

Use guideline Traffic Light System (NICE) 2013 if applicable.

Use guideline Feverish Illness (NICE) 2013 if applicable.

Document pain score using FLACC, Wong Baker Faces or numeric rating scale.

Safeguarding

- Assess safeguarding
- Assess for domestic abuse in the home
- Assess for learning disability

DOCUMENT ALL FINDINGS IN THE CLINICAL TREATMENT RECORD AND ACT ON THEM FOLLOWING NDHCT GUIDELINES.

APPENDIX C – Protocol for the Management of Human Bites (over 2 years of age)

Protocol for the Management of Human Bites (over 2 years of age)

Protocol operational from April 2021 and expires end of April 2024

The registered health professional named below, being employees of Northern Devon Healthcare Trust based at ……. have received training and are competent to operate under this protocol

NAME *(please print)*	PROFESSIONAL TITLE	SIGNATURE	AUTHORISING MANAGER *(please print)*	MANAGER'S SIGNATURE	DATE

Keep original with the authorising manager and send a copy to: Cherida Matthews / Joanna Hope, Emergency Department, Northern Devon Healthcare Trust NHS, Raleigh Park, Barnstaple, Devon, EX31 4JB