

Reimplantation Triage and Transfer Pathway

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Purpose: As an American College of Surgeons, verified level I trauma center, we are responsible for thorough assessment of the traumatically injured patient. This document is to aid in the triage and transfer process of patient requiring reimplantation services.

Background: Nebraska Medicine has multidisciplinary coverage (orthopedics, plastics, vascular, and urology) for patients requiring reimplantation services for traumatic injury (ie: severed limb, digit, or other body part).

Please reference the three identified injury types for appropriate treatment plan:

Mangled Extremity

Treatment of a mangled extremity is a collaborative effort amongst the Trauma service, Orthopedic surgery, and Vascular surgery. When a patient is determined to have a mangled extremity or extremity requiring re-implantation, all three services are involved to determine the overall best course of action for the patient given other injuries, hemodynamic status, and the ability to salvage the extremity. We utilize a mangled extremity score (see table below) to help with this management decision. Once all three service lines have agreed to re-implantation and/or attempting to salvage the extremity, the patient is taken to the OR where Orthopedic surgery and Vascular surgery will re-attach/re-construct bones and vessels as needed. Both services are available and on-call 24/7.

Mangled Extremity Severity Score (MESS)

Tissue Injury	Characteristics	Details	Points
1	Low energy	Stab wound, simple closed #, small-caliber	1
2	Medium energy	Opened #, dislocate, moderate crush	2
3	High energy	Short gun, high velocity	3
4	Massive crush	Logging, rail road	4
Shock			
1	Normotension	BP stable	0
2	Hypotensive transient	BP unstable, SBP < 90 mmHg	1
3	Hypotension	In OR	2
Ischemia			
1	None	No signs of ischemia	0
2	Mild	Diminish pulse	1
3	Moderate	Paresthesia, diminish motor activity	2
4	Advanced	Pulseless	3
Age			
1	< 30 y		0
2	30 - 50 y		1
3	> 50 y		2

Score ≤ 6: salvageable limb, Score ≥7: highly predictive of amputation

Upper Extremity/Hand Re-implantation

Nebraska Medicine has three experienced hand surgeons that are willing and skilled to perform hand/digit reimplantation when they are on call. Unfortunately, between the three of them, they cannot cover the hand service 24/7.

When these surgeons are unavailable, calls should be made to transfer to our regional implantation centers. See list of resources with contact information.

Our usual workflow for this is when we get a call from an outside hospital wanting to transfer a patient to us who potentially needs a hand/digit re-implantation, we will do a conference call with our on-call hand surgeon to see if this is something they are able to care for at our institution. If they are, we will have the patient transferred. While the patient is in route, our hand surgeon will get the OR organized and ready to go when the patient arrives. If the patient is unable to be cared for at our institution, we will help the outside hospital coordinate care to the regional hand re-implantation center by providing phone numbers and contact information. The same process applies if the patient comes to our institution directly from the field. Our on-call hand surgeon will assess to see if this patient needs to be transferred or not (not all our hand surgeons do re-implantations).

University Hospital - University of Missouri Health Care

1 Hospital Drive, Columbia, MO 65212

1-573-882-6985 - line 1

1-573-771-7860 - line 2

University of Iowa

200 Hawkins Drive, Iowa City, IA 52242

1-319-384-5000

Option - 2 (adult)

Option - 1 (trauma) or Option 2 (ED to ED)

Mayo Clinic

200 First Street, Rochester, MN 55905

1-507-255-2910

Denver Health Medical Center

777 Bannock Street, Denver, CO 80204

1-303-602-5000

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We do recognize that in some trauma scenarios it is life over limb. Any poly-trauma patient with potential life-threatening injuries will come to or remain at our Level 1 trauma center where all these issues will be addressed. If a patient is too unstable to be transferred due to other injuries, we will address these life-threatening injuries first. Furthermore, if an outside hospital has a poly-trauma patient with a potential re-implantation, those patients will be directed to our facility given the amount of travel time to nearest re-implantation center. In these situation, we do have the ability to call our hand surgeons that do re-implantations when they are not on-call to inquire for urgent consultation.

Penile Re-implantation

For penile re-implantation, Urology will be consulted for reimplantation or re-creation. They will reestablish a urethra for urinary drainage. Time of reimplantation is determined by Urology and if assistance is required by Plastic surgery, they too will be involved. Both services are available and on-call 24/7.

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