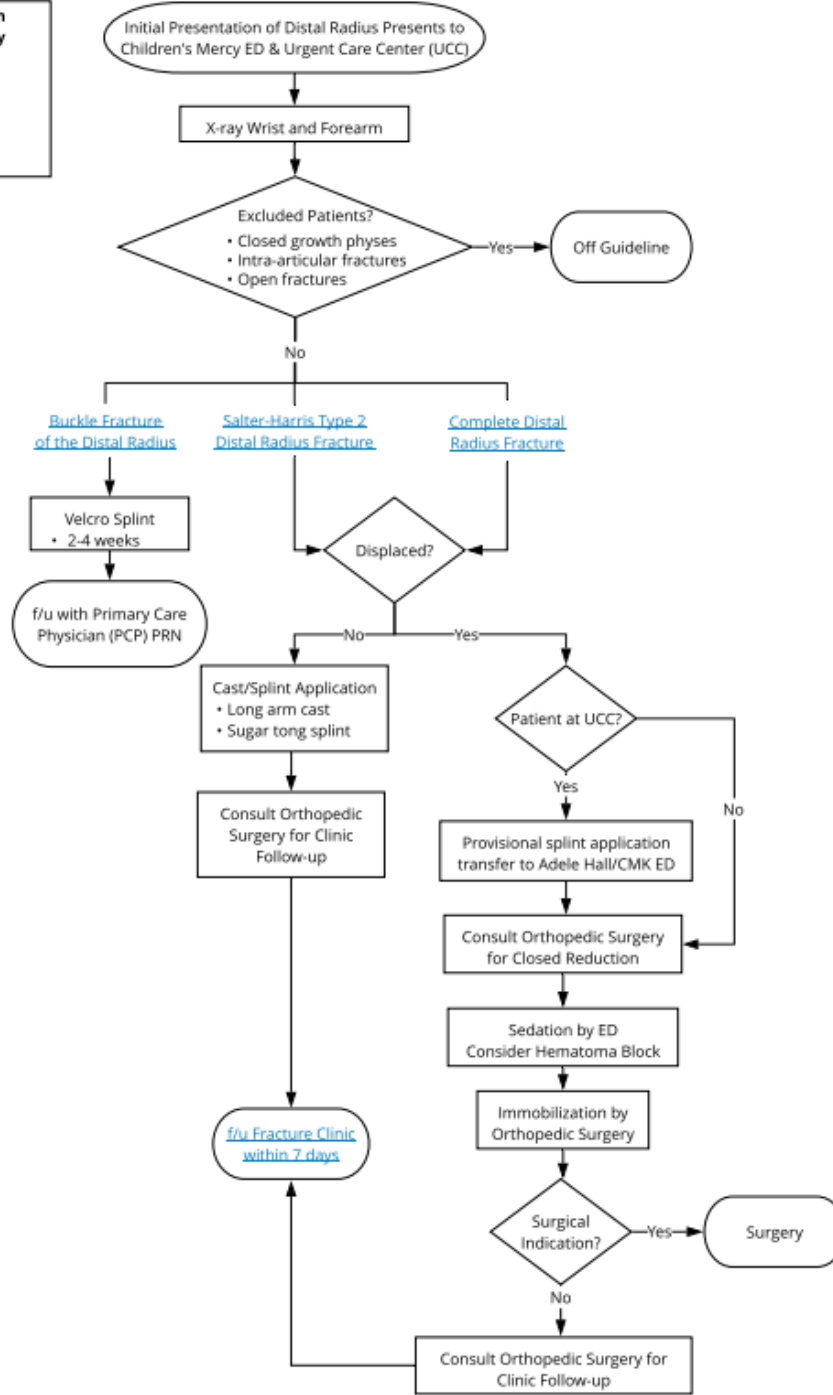


Distal Radius Fracture Care Process Model Synopsis

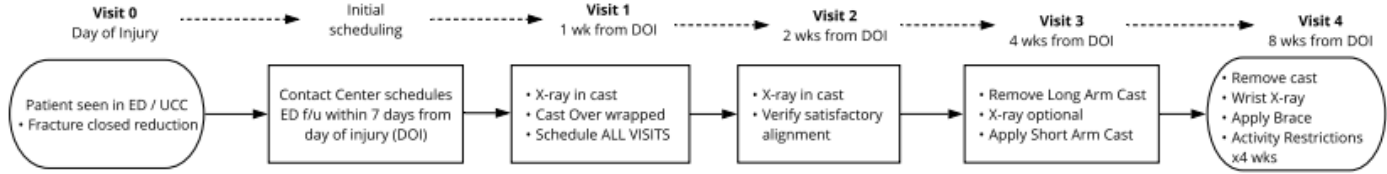
Abbreviations/Acronyms used in document (laboratory, radiology studies excluded):
 CMK: Children's Mercy Kansas
 ED: Emergency Department
 PCP: Primary Care Physician
 UCC: Urgent Care Center

[Distal Radius Fracture Follow-up Schedule](#)



**This care process model does not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare care process models for each. Accordingly, this care process model should guide care with the understanding that departures from them may be required at times.*

Abbreviations/Acronyms used in document (laboratory, radiology studies excluded):
 DOI: Day of Injury
 ED: Emergency Department
 PCP: Primary Care Physician
 UCC: Urgent Care Center



[Evidence on Radiographic Follow-up for Distal Radius Fractures](#)

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Objective of Care Process Model To provide evidence-based treatment of distal radius buckle fractures in the outpatient setting.

1. Provide criteria for accurate diagnosis and imaging
2. Provide criteria for immobilization
3. Provide guidance for pain management, follow-up, referral to Orthopedics and return to play
4. Prevent complications

Target Users

- Emergency Department Clinicians
- Orthopedic Clinic Clinicians

Guideline Inclusion Criteria

- Pediatric and adolescent with distal radius fracture
- Open growth physes

Guideline Exclusion Criteria

- Closed growth physes
- Intra-articular fractures
- Open fractures

Outcome Measures

- Gross Cost of Care per episode as a monthly average

Process Measures

- Number of visits per episode – monthly average
- Powerplan utilization
- Accuracy of X-ray orders
- Days to initial visit
- Percent patient's deviation from protocol

Balance Measures

- NRC Comparison DRFX versus overall fracture patients – patient family experience
- Reschedules – patients versus hospital initiated
- Missed appointments

Potential Cost Implications

- Reduction in gross cost of care

Potential Organizational Barriers

- Resistance to change

Supporting Tools

- Power plan
- Patient education material

Practice Recommendations

Distal Radial Buckle Fracture

Assessment

Physical Examination:

- Inspection, look for swelling, bruising, obvious deformity, open fracture
- Palpate the distal radius and ulna
- Palpate of the snuff box (R/O scaphoid fracture)
- Palpate radial and ulnar shafts
- Palpate elbow and assess elbow range of motion
- Assess neurovascular status
 - Capillary refill
 - Palpate radial pulse
 - Assess the Radial nerve:
 - Patient extends interphalangeal joint of the thumb against resistance
 - Assess the Median nerve:
 - Recurrent motor branch: palmar abduction of the thumb
 - Anterior interosseous branch: makes "OK sign"
 - Assess the Ulnar nerve: Patient crosses fingers or abducts fingers against resistance

Radiographs

- Amsterdam Pediatric Wrist Rules can help determine when to obtain radiographs after a wrist injury
 - Sensitivity: 95.5%, Specificity: 37.3%
 - Only validated in patients > 3 years old
 - Obtain a radiograph if any of the following criteria are positive:
 - Swelling of the distal radius
 - Obvious deformity present
 - Tenderness to palpation of the distal radius
 - Tenderness to palpation of the snuffbox
 - Pain with forearm supination or limited supination
- Obtain AP and lateral of the wrist to assess the distal radius and ulna in children < 10 years old
- Obtain AP, lateral and oblique views of the wrist to assess patients > 10 years old. Oblique images will assess for scaphoid fractures. Scaphoid fractures are uncommon in children < 10 years old
- Consider forearm and elbow x-rays as clinically indicated
- Cortical disruption of a SINGLE cortex
- Differential diagnosis to consider:
 - Salter-Harris I fracture of the distal radius
 - Complete, unstable fracture of the distal radial metaphysis (both cortices)

Treatment

- Removable volar wrist splint:
 - Equivalent healing to casting
 - Improved functional outcomes
 - No difference in pain outcomes
 - Increased family satisfaction and convenience
 - Cost savings for the family
- Need for Orthopedic referral:
 - Patient unable to tolerate or maintain a splint due to age, activity, or developmental level
 - Significant family anxiety
- Pain management:
 - Immobilization provides effective pain control
 - Ibuprofen and Acetaminophen are effective for pain management

Anticipatory Guidance in the Emergency Department and Urgent Care

- May remove splint for bathing
- Keep splint clean and dry, do not put the splint in water
- Avoid activities such as running, jumping, and climbing for 4 weeks
- Loosen or remove the splint and return to Urgent Care if:
 - The arm feels more painful or more swollen

- Arm feels numb or tingles
- Arm turns blue
- If the child has no pain after 2-3 weeks, the child may stop wearing the splint
- Once the child stops wearing the splint, they should be encouraged to move their wrist
- **If the child is not fully recovered by 6 weeks, they should be seen by Orthopedics**
- **Return to Play**, the child may return to sports if the wrist has near-normal strength and no pain. The wrist splint should be used during vigorous activity until 4-5 weeks after the injury

Care Question Answered

- [PICO: In Pediatric patients with distal radius and ulna fractures, how long is the need for a radiographic follow-up?](#)

Care Process Preparation This care process was prepared by The Office of Evidence Based Practice (EBP) in collaboration with content experts at Children’s Mercy Kansas City. The development of this care process supports the Department of Clinical Effectiveness’s initiative to promote care standardization that builds a culture of quality and safety that is evidenced by measured outcomes. If a conflict of interest is identified the conflict will be disclosed next to the committee member’s name.

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Approval Process Care processes are reviewed and approved by the Content Expert Committee, the Office of EBP, and other appropriate hospital committees as deemed suitable for the guidelines intended use. Care processes are reviewed and updated as necessary every three years within the Office of EBP at CMH&C. Content expert Committees will be involved with every review and update.

Department/Unit	Date Approved
Orthopedic Surgery	2/2023

Version History:

Date	Comments
February 2023	First Version

Date for Next Review: February 2025

Disclaimer:

The content experts and the Office of EBP are aware of the controversies surrounding care process models. When evidence is lacking or inconclusive, options in care are provided in the document and the power plans that accompany the guideline.

These guidelines do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the patient's best interests based on the circumstances existing at the time.

It is impossible to anticipate all possible situations that may exist and to prepare guidelines for each. Accordingly, these guidelines should guide care to understand that departures from them may be required at times.

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