

Accuracy of Emergency Room and Urgent Care Center Pediatric Upper Extremity Diagnoses

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Introduction:

- Urgent care centers (UCC) and emergency departments (ED) are the first line in diagnosing and managing acute pediatric upper extremity injuries.
- Diagnosis and management of these injuries in the pediatric population can be challenging because of the difficulty obtaining a thorough physical examination and skeletal immaturity on radiographs.

Objectives:

- Determine the accuracy of pediatric orthopaedic upper extremity diagnoses by UCC and ED providers.
- Identify the most common missed diagnoses.

| Study Characteristics | Urgent Care Centers (UCC) | Emergency Departments (ED) | Total/Average |
|-------------------------|---------------------------|----------------------------|---------------|
| Total Patients Enrolled | 60 | 100 | 160 |
| # of Correct Diagnoses | 34 | 71 | 105 |
| % Correct Diagnoses | 57% | 71% | 66% |

Methods:

- Prospective study of all pediatric patients who presented for an initial upper extremity injury evaluation after being seen in an UCC or ED.
- Exclusion: Patients with no official documentation detailing their injury.
- Blinded comparison between official discharge diagnosis from UCC/ED and diagnosis made by pediatric upper extremity orthopaedic surgeon.
- Simple statistics performed.

Results:

- 160 patients enrolled.
 - ED: 100 patients.
 - UCC: 60 patients.
- Percent correct diagnoses (%):
 - ED: 71% (71/100)
 - UCC: 57% (34/60)
- Common missed diagnoses:
 - Salter-Harris I fractures of the hand, wrist and elbow.
 - Misdiagnosing fractures as ligamentous sprains or contusions.

Results (continued):

- 38 % (21/55) of the incorrect diagnoses occurred in multiple bone injuries when a component of the injury was missed.
 - Missed radial neck fracture with concomitant wrist injury.
 - Radius or ulna of both bone fractures.
 - Monteggia variant.

Conclusion:

- ED and UCC diagnoses of upper extremity injuries are only accurate 66% of the time.
- Providers need better education in order to improve the accuracy of diagnosing upper extremity injuries and therefore provide the appropriate treatment and counseling.