

## Chapter 15

# Ocular Emergencies in Children: Techniques and Procedures to Assist in Diagnosis and Treatment

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### ABSTRACT

*This chapter covers general bedside and chairside examination procedures and instruments used to examine a pediatric patient in an acute care setting. Pediatric patients may present to an emergency room or present emergently in any clinical setting with a wide variety of acute ocular conditions. When working in an emergency room or hospital-based setting, it is unlikely that a clinician will have all of the exam equipment typically used for routine care. The authors review the various ocular imaging techniques used to obtain a view of the internal structures of the eye, orbit, head, and brain when external examination is not sufficient. The procedures described aid the clinician in appropriately and thoroughly evaluating pediatric patients presenting with ocular emergencies.*

### INTRODUCTION

Pediatric patients may present to an emergency room or present emergently in any clinical setting with a wide variety of acute ocular conditions. When working in an emergency room or hospital-based setting, it is unlikely that a clinician will have all of the exam equipment typically used for routine care. This chapter serves as a guide to aid in managing a wide variety of ocular conditions in a non-traditional setting. The chapter starts by covering general bedside and chairside examination techniques that can

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be used in an emergency room, followed by discussion of various tests and techniques that aid the clinician in appropriately and thoroughly evaluating pediatric patients presenting with ocular emergencies.

## **BEDSIDE AND CHAIRSIDE EXAMINATION TECHNIQUES**

### **Indication**

Bedside and chairside examinations are useful for infants and toddlers who are usually in the lap of the guardian. Additionally, bedside/chairside exam techniques are indicated when young patients are unable to fit into commonly used equipment due to body habitus or if a patient uses a wheelchair or other assistive devices. These techniques are also useful when certain equipment is unavailable or if a child is unable to be transported from the emergency department for an eye examination.

### **Background**

There are situations where patients are unable to be examined with traditional examination equipment, particularly in the pediatric population. This may be because the patient is an infant, the patient is a toddler who cannot sit in a slit lamp or other eye apparatus, or if it is unsafe for the child to be transferred into a traditional eye examination apparatus due to different abilities. This is even more magnified in an acute-care setting, where an eye examination lane may not be available. In these cases, it is best to adapt the examination to evaluate the child where they can most comfortably sit or rest.

Chairside and bedside techniques discussed largely deal with examination of the front surface of the eye. The posterior segment of the eye can be well viewed with a binocular indirect ophthalmoscope and a condensing lens with the child in almost any position.

### **Advantages**

- Patients can be examined in almost any setting
- Promotes inclusive examinations

### **Disadvantages**

- The view of the eye is less stable
- Examination is more ergonomically taxing for the clinician
- Less detailed view of the eye

### **Equipment List for Performing a Basic Eye Exam in an Emergency Department Setting**

1. Near visual acuity card
2. Adjustable visual acuity chart (ETDRS, Feinbloom number chart)
3. Occluder with pinhole
4. Transilluminator or penlight

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