Exclusion of Students With Conjunctivitis From School: Policies of State Departments of Health

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ABSTRACT

**Purpose:** To use current state department of health regulations regarding exclusion of students with conjunctivitis from school as a starting point in developing uniform recommendations for schools.

**Methods:** State departments of health were asked to state their policy regarding when a child with conjunctivitis may return to school. This information was collated and examined for trends. The results were compared with current literature on infectious conjunctivitis.

**Results:** Of the 43 states that responded, 7 allow children with conjunctivitis to remain in school, 8 allow their return once antibiotic treatment is initiated, 12 allow their return 24 hours after antibiotics are initiated, 13 exclude them until the disease is noncommunicable, and 16 require the approval of a physician for return to school. Seventeen states gave multiple recommendations, which were often contradictory.

**Conclusions:** Although no current consensus exists among state health officials regarding students with conjunctivitis, the literature supports excluding children with conjunctivitis from school until they are asymptomatic. When patients are treated with fourth-generation fluoroquinolones, the length of exclusion may be as little as 24 hours in cases of bacterial conjunctivitis, and longer in cases of viral conjunctivitis. Following these guidelines may prevent epidemics of bacterial and viral conjunctivitis.


INTRODUCTION

Infectious conjunctivitis is a common childhood illness. Although conjunctivitis only infrequently results in permanent visual loss or structural damage, it causes discomfort and is highly contagious. Recent epidemics of both viral and bacterial types of conjunctivitis have been documented, including several large outbreaks due to two new, non-typeable strains of *Streptococcus pneumoniae.*

Both bacterial and viral types of conjunctivitis are mainly self-limited diseases, lasting from 5 to 14 days before spontaneous resolution occurs. During this time, the disease is spread by contact with the infected individual. The need for exclusion of students with acute conjunctivitis from school is
controversial. Many school nurses advocate excluding students with conjunctivitis to protect the remainder of the student body and, by extension, the community at large, from contagion. On the other hand, some authorities recommend allowing school attendance, stating that students with viral or bacterial respiratory infections are not excluded and are no less contagious than those with conjunctivitis. Reference manuals vary in their recommendations for exclusion, leading to considerable variability in practice among primary care physicians and school officials.10,11

The issue of whether to exclude a child from school concerns more than the likelihood that the child will infect others. Absenteeism is considered by teachers to be the largest problem they face in the classroom.12 Furthermore, the economic effect of lost work time for parents and their employers is considerable.

This study was undertaken to determine the current policies of state departments of health regarding exclusion of students with conjunctivitis from school, and to propose standardization of these policies.

**METHODS**

An open-ended inquiry was sent to the Department of Health of all 50 states, asking them to state their policies regarding when a child with conjunctivitis may return to school. Responses were recorded in an Excel spreadsheet and tabulated.

**RESULTS**

Forty-three states responded. Some do not have an official state policy, although five of these provide guidance for local school districts when requested. In these cases, the exclusion guidance given was included with other states’ official policies. Seventeen states gave more than one response, some of which were contradictory. States that exclude children during the “acute stage” of illness were categorized with states that exclude children until the disease is noncommunicable.

Only three states, Kansas, Massachusetts, and Pennsylvania, differentiated between viral and bacterial conjunctivitis in their policies, not requiring exclusion from school for viral conjunctivitis and allowing return to school after 24 hours after the initiation of antibiotics for bacterial conjunctivitis. Similarly, Kentucky does not exclude those with “mild” conjunctivitis, but allows those with bacterial conjunctivitis to return once antibiotic treatment has been started. Six states cited the *Red Book* for their policies, and three named the *Control of Communicable Diseases Manual* as their reference. No regional trends were found in the responses.

All states replied except Arkansas, Hawaii, Mississippi, Nevada, New Mexico, Utah, and Wyoming.

The following states reported that they have no official policy: Alabama, California, Florida, Maine, Michigan, Montana, New Jersey, North Dakota, Oregon, Tennessee, Vermont, and Wisconsin. However, Maine, Montana, North Dakota, Vermont, and Wisconsin provide guidance to school districts when requested, as listed below.

Seven states recommend no exclusion from school for conjunctivitis: Iowa (if nonpurulent); Kansas (if viral); Kentucky (if mild); Massachusetts (if viral); Minnesota (usually); Oklahoma; and Pennsylvania (if viral).

The following states allow students with conjunctivitis to return to school once antibiotic treatment is started: Connecticut, Kentucky (if bacterial), Minnesota, North Dakota, and West Virginia. In South Dakota, students with conjunctivitis may return to school after antibiotic treatment is initiated or with a physician’s written permission. In Indiana, students are excluded until antibiotic treatment is started, until the disease is noncommunicable, or until a physician approves a return to school.

A number of states require exclusion from school until 24 hours after the initiation of antibiotic treatment. These include Delaware, Montana, Ohio, Rhode Island, and Vermont, as well as Kansas, Massachusetts, and Pennsylvania if the conjunctivitis is bacterial. Arizona and Virginia also exclude students until 24 hours after antibiotics have been started or until the disease is noncommunicable. In Illinois, students may return to school after 24 hours of antibiotic treatment or with a physician’s approval. Maryland requires 24 hours of antibiotic treatment, noncommunicable status, or physician approval before the student returns to school.

The following states require school exclusion until the disease is noncommunicable: Alaska, Idaho, Iowa (if purulent), Louisiana, and Wisconsin. Missouri, Nebraska, New Hampshire, and New
York allow a return to school once the conjunctivitis is noncommunicable or with physician approval, with New York specifying that this applies only to purulent conjunctivitis. Wisconsin notes that noncommunicable status usually occurs 24 after the initiation of antibiotic treatment.

Finally, a number of states require physician approval for a student to return to school. These include North Carolina, South Carolina, Texas, and Washington. Georgia, which requires physician approval, points out that bacterial conjunctivitis requires antibiotic treatment. Maine recommends that a student may return to school with physician approval and with treatment. In Colorado, approval by a school nurse is accepted, and if antibiotics have been prescribed, they must have been used for 24 hours before the child may return to school.

**DISCUSSION**

The results of this study show the current lack of uniformity in state policies for exclusion of children with conjunctivitis from school. Fourteen states gave multiple responses, leaving the decision as to whether to exclude an individual child to the local school nurse without providing useful guidance. This, in turn, may be due to the lack of uniformity in recommendations given in the literature, particularly in reference manuals. The *Red Book* states the following: “Except when viral or bacterial conjunctivitis is accompanied by systemic signs of illness, infected children should be allowed to remain in school once any indicated therapy is implemented, unless their behavior is such that close contact with other students cannot be avoided.” The *Control of Communicable Diseases Manual* advises that children should not attend school during the “acute stage,” and recommends sulfonamides, gentamicin, or polymyxin B with neomycin or trimethoprim. A number of states mentioned the “acute stage” in their recommendations, no doubt in reference to this manual, but ophthalmologists consider conjunctivitis acute until it has persisted for 2 weeks or longer.

Before 1981, most infectious conjunctivitis was believed to be viral in origin. Gigliotti et al. showed that pediatric infectious conjunctivitis was most frequently bacterial, isolating bacterial pathogens in 54 of 74 cases (73%) of acute conjunctivitis in which an etiologic agent was identifiable and isolating viruses in 20 of 74 cases (27%). In the same study, all patients with conjunctivitis, including those with viral conjunctivitis, had at least one bacterial species cultured from their conjunctiva, whereas 36% of control subjects had no bacterial growth. Similarly, Weiss et al. showed a bacterial origin in 76 of 95 cases (80%) of pediatric acute conjunctivitis, and a viral etiology in 12 of 95 cases (13%).

Both bacterial and viral types of conjunctivitis are considered highly contagious, and both may cause epidemics in a school population. Handwashing may significantly reduce the contagion of both viral and bacterial disease, but even young adults in a college setting have been unreliable in controlling the spread of conjunctivitis using this method alone. In the 2002 Dartmouth College epidemic that was caused by *S. pneumoniae*, the number of new cases did not significantly decrease until the students returned from spring break. Furthermore, in a 2002 *S. pneumoniae* epidemic at a Maine elementary school, handwashing was disruptive to classes and apparently ineffective; the epidemic lasted from late September until the Thanksgiving recess, another calendar-imposed exclusion from school. This observation suggests that the key to preventing epidemics of bacterial conjunctivitis is to exclude children with conjunctivitis from school while they are contagious. It is then the responsibility of the clinician to cure the conjunctivitis rapidly, allowing the affected children to return to school as soon as possible.

Unfortunately, no effective treatment has been found for viral conjunctivitis. The highly transmissible viruses are present in tears until the clinical signs resolve in 1 to 2 weeks. Handwashing, with its shortcomings, and exclusion are currently the only methods of controlling the spread of viral conjunctivitis in school settings. Although some argue that exclusion is unnecessary in viral conjunctivitis, recent epidemics in Brazil (60,000 people affected) and South Korea (1 million people affected) show how widespread these infections may become. Furthermore, the effectiveness of excluding all affected children from school in controlling epidemics of viral conjunctivitis was clearly demonstrated in Florida in 1981. The well-being of the overall population must be weighed against the inconvenience and economic hardship of exclusion to the individual family.

On the other hand, topical antibiotics have been demonstrated to reduce the duration of acute bacte-
rial conjunctivitis. Most clinicians therefore prescribe antibiotic drops or ointment to empirically treat bacterial conjunctivitis. However, the choice of antibiotic has been unclear, leading many clinicians to select the least expensive medication. The ideal therapy for acute bacterial conjunctivitis provides rapid subjective and objective clinical improvement, prevents recurrences and decreases the likelihood of contagion by eradicating the causative agent, has limited direct side effects and secondary complications, has sufficient acceptance by both patients and parents to enhance compliance, has an acceptable financial cost, and does not create resistant bacteria. Older antibiotics still in use have been demonstrated to meet these criteria poorly. For example, in the Dartmouth epidemic, students who received sulfacetamide or bacitracin did not have a shorter duration of disease compared with those who did not use antibiotic drops. S. pneumoniae and Haemophilus influenzae have shown increasing resistance to bacitracin, erythromycin, gentamicin, trimethoprim, polymyxin B, sulfonamides, tobramycin, neomycin, and even ofloxacin and levofloxacin. Localized adverse reactions may occur with sulfacetamide and aminoglycosides. Older generations of fluoroquinolones, such as norfloxacin, ciprofloxacin, and ofloxacin, have significant disadvantages compared with fourth-generation drugs, including decreased spectrum and potency for Gram-positive cocci and increased propensity to promote the development of resistance.

If the goal of treatment is to cure bacterial conjunctivitis as rapidly as possible, to limit its spread to others, and to return the patient to normal activities, such as school, then it is important to select the ideal antibiotic. Of the various topical ophthalmic antibiotics currently available, the fourth-generation fluoroquinolones best meet the criteria for ideal therapy, with moxifloxacin having the advantages of the broadest spectrum in its class, higher potency against Gram-positive organisms, and higher concentrations in human conjunctival tissue after topical administration. Furthermore, moxifloxacin does not contain benzalkonium chloride and has a near-neutral pH of 6.8. These features make it more comfortable to use than gatifloxacin, which has a pH of 6 and has been demonstrated to be optimally effective against ocular bacterial pathogens only in combination with benzalkonium chloride. Because it is not always possible to differentiate between viral and bacterial conjunctivitis, in equivocal cases, it is reasonable to begin treatment with a fourth-generation fluoroquinolone, due to the safety and lack of propensity for bacterial resistance in this class of antibiotics. Furthermore, the increased cost of these medications is likely less than the lost income to the family when an inferior drug is selected, or the cost to society when an isolated case becomes an epidemic because a child returns to school while still contagious. The availability of these excellent drugs facilitates a new, standardized, and sensible approach to the exclusion of children with conjunctivitis from school:

A child who is identified by school personnel as having acute infectious conjunctivitis should be sent home. The parent should be encouraged to contact the child’s primary care physician. Once the diagnosis of infectious conjunctivitis has been confirmed, the child should be given a fourth-generation fluoroquinolone, preferably moxifloxacin. The child may then return to school once symptoms resolve. In most cases of bacterial conjunctivitis treated with moxifloxacin, this may be the next day.

The recommendation is to return the child to school “once asymptomatic” rather than “after 24 hours on antibiotics” for several reasons. First, fourth-generation fluoroquinolones are so effective against most bacteria that the patient is often symptom-free in less than 24 hours, potentially allowing the child to return to school safely the next morning. Second, the child with viral conjunctivitis remains contagious despite antibiotic treatment, and thus should not return to school until all symptoms have resolved. Third, children who have bacterial conjunctivitis and use less effective antibiotics remain contagious after 24 hours of treatment. Therefore, children who are infectious are excluded from school, and unnecessary absences are eliminated for both students and parents.

It is essential for school nurses, parents, and clinicians to remember that a red eye is not necessarily conjunctivitis. In the setting of pain, decreased vision, or severe photophobia, a more serious eye problem must be excluded by an ophthalmologist. Likewise, in a child who does not respond to treatment with the fourth-generation fluoroquinolone within 3 days, an etiology other than bacterial conjunctivitis must be considered, possibly warranting referral to an ophthalmologist.
consider updating their recommendations for treatment and exclusion from school in patients with conjunctivitis.

REFERENCES


