

Shared Eye Drop Bottles: The Danger in Making Every Drop Count

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PROBLEM: Although the use of multiple eye medications is required when patients undergo cataract surgery, medical facilities receive little or no reimbursement for these drugs from prospective payment systems or other insurers that consider these medications to be outpatient prescriptions. As a result, some facilities have adopted the practice of having patients share eye drop containers.

Communal eye drops are sometimes used in both outpatient and inpatient areas to prevent waste, to control costs, and as a convenience to avoid constant entry into automated dispensing cabinets and the need for inventory replacement. Some health professionals, however, are concerned that communal containers can become contaminated, which might increase the risk of infection in patients.

Although few large-scale studies have directly examined the safety of sharing eye drop containers, the existing literature indicates that ocular cross-contamination can occur as a result of such a practice. Ordinarily, preservatives prevent bacterial growth in the solution, but bacteria may be present on the bottle-top's inner surfaces or the container's grooves and tips.

After examining 638 in-use containers, Hovding et al.¹ recovered bacteria from 82 bottles (12.9%) when the solution was dripped from the bottles. They also found clinically and microbiologically significant growth in 12 cases (1.9%).

In other studies, serratia keratitis has been transmitted by contaminated eyedroppers,² and contaminated eye drops have caused *Pseudomonas aeruginosa* corneal scleritis.³ Additional studies have

confirmed that in-use container contamination occurs and that serious eye infections can be transmitted from such containers.⁴⁻⁸ These studies also refute the belief that doctors, nurses, and patients will always apply eye drops properly, without causing contamination by touching the containers.

The likelihood of infection may increase for those patients with compromised immune systems or wounds, such as penetrating eye injury or recent surgery. Yet it is doubtful that patients will always be screened effectively for these conditions so that the use of communal drops can be avoided. It is also difficult to ensure proper storage of eye solutions and their disposal upon expiration.

Medication errors, such as using the wrong drug and the wrong concentration, are more likely to occur with communal drops, because patients' names are not included on the container labels. The American Academy of Ophthalmology recently convinced leading ophthalmic manufacturers to color-code their ocular medications according to therapeutic categories. Unfortunately, this step has led to mixups within each category because many distinctly different items now have identical color schemes, logos, fonts, or other characteristics that make it difficult to differentiate one product from another. Thus, it is possible for just one dispensing error to result in a series of mistakes involving numerous patients.

SAFE PRACTICE RECOMMENDATION: Using communal eye drops increases the risk of infection and medication errors. In fact, the Centers for Disease Control and Prevention considers tears to be an infectious body fluid and recommends that staffs use personal protective equipment whenever the potential for exposure exists. Furthermore, the labeling on some ophthalmic products suggests that medications should not be shared among patients; certainly, this recom-

mendation applies to eye drops.

In human terms, the cost of an eye infection can be blindness. In financial terms, the cost of treating or litigating even a single eye infection resulting from cross-contamination with communal eye drops could easily eliminate the savings that had been achieved over the previous several years.

For institutional use, eye medications should be purchased in the smallest package size possible. Unit-of-use packaging is available for many commonly used eye medications, although manufacturers might not price these products attractively to promote their use. Alternatively, it may be prudent to have patients fill their prescriptions for eye medications before surgery and bring them into the office at the time of the procedure.

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