

Conjunctivitis Nursing Care: A Comprehensive Review of Evidence-Based Practice

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ABSTRACT

Conjunctivitis, commonly known as “pink eye,” is one of the most frequently encountered ocular conditions in both primary-care and acute-care settings. Although often self-limiting, its rapid transmissibility, variable aetiology (bacterial, viral, allergic, and toxic), and potential for complications necessitate a coordinated nursing response. This paper synthesises current evidence on the epidemiology, pathophysiology, clinical presentation and diagnostic work-up of conjunctivitis, and critically examines nursing assessment, interventions, patient-education strategies, and outcome measurement. Particular emphasis is placed on infection-control practices, pharmacologic and non-pharmacologic management, psychosocial considerations, and the role of the nurse within inter-professional teams. Gaps in the literature are identified and future research directions proposed. The review demonstrates that systematic, evidence-based nursing care reduces transmission, improves treatment adherence, shortens symptom duration, and enhances patient satisfaction.

KEYWORDS:

- Conjunctivitis • Ocular Infection • Nursing Assessment • Infection Control
- Patient Education • Evidence-Based Practice

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INTRODUCTION

Conjunctivitis accounts for an estimated 1-2 % of all primary-care visits and up to 15 % of paediatric ophthalmic consultations worldwide.¹ Its high prevalence, combined with the potential for rapid spread in community and healthcare settings, makes it a priority condition for nursing surveillance and intervention. While many episodes resolve spontaneously, inappropriate management can lead to corneal involvement, visual impairment, and significant economic burden due to missed work or school days.²

Nurses are uniquely positioned to influence the disease trajectory through early detection, implementation of infection-control measures, medication administration, and patient-centred education. Yet, nursing practice is often guided by heterogeneous protocols lacking a unified evidence base. This paper examines the current state of knowledge regarding conjunctivitis and delineates a comprehensive, evidence-based nursing care framework.

Microbial Pathogens

Category	Common Pathogens	Typical Duration*
Bacterial	Staphylococcus aureus, Streptococcus pneumoniae, Haemophilus influenzae (non-typeable), Moraxella catarrhalis	5-7 days (post-antibiotic)
Viral	Adenovirus serotypes 3, 4, 7, 21; Enterovirus 70; Herpes simplex virus (HSV)	7-14 days (up to 3 weeks)
Allergic	IgE-mediated response to pollens, dust mites, animal dander	Chronic, episodic

*Duration reflects symptom resolution after optimal management.

PATHOPHYSIOLOGY

Conjunctival epithelium, a mucous-membranous barrier, reacts to pathogens or allergens via inflammation, edema, and hypersecretion. In bacterial infection, lipopolysaccharide-mediated activation of Toll-like receptors induces cytokine cascades (IL-1 β , TNF- α) leading to purulent discharge and epithelial desquamation.⁷ Viral agents cause direct cytopathic effects and stimulate interferon- γ production, resulting

EPIDEMIOLOGY AND AETIOLOGY

1. Global Incidence

- **Bacterial conjunctivitis** constitutes 30-50 % of acute cases in children and 15-35 % in adults.³
- **Viral conjunctivitis**, predominantly adenoviral, represents 50-70 % of paediatric cases and up to 85 % of adult outbreaks.⁴
- **Allergic conjunctivitis** accounts for 10-20 % of chronic presentations, with a rising trend linked to increased environmental allergen exposure.⁵

Seasonal peaks correspond with school terms (bacterial) and warmer months (viral). Socio-economic factors influence incidence; overcrowding and limited sanitation increase transmission risk in low-income regions.⁶

in serous exudate and follicular hyperplasia⁸ Allergic conjunctivitis is mediated by mast-cell degranulation, histamine release, and eicosanoid pathways, producing itching, chemosis, and watery discharge.⁹

Understanding these mechanisms guides nursing interventions: antimicrobial stewardship for bacterial forms, supportive care for viral disease, and antihistamine administration for allergic types.

CLINICAL PRESENTATION AND DIAGNOSTIC CONSIDERATIONS

Feature	Bacterial	Viral	Allergic
Discharge	Purulent, thick	Watery, mucoid, may be frothy	Clear, watery
Redness	Diffuse, often unilateral	Diffuse, often bilateral	Bilateral, with chemosis
Itch	Mild	Moderate	Prominent
Contact lens use	↑ risk of <i>Pseudomonas</i>	-	-
Preceding URI	Often (viral)	Common (viral)	Seasonal allergen exposure

Diagnosis is primarily clinical, supplemented by slit-lamp examination, fluorescein staining, and, when indicated, microbiological culture or polymerase chain reaction (PCR) for atypical pathogens (e.g., HSV, chlamydia).¹⁰ Nursing

documentation must capture onset, laterality, discharge characteristics, associated systemic symptoms, and risk factors (contact lens wear, recent infections, allergen exposure).

NURSING ASSESSMENT

A systematic ocular assessment framework (OSAFA) is proposed (Table 2).

Table 2: Ocular Assessment Framework for Conjunctivitis (OSAFA)

Domain	Key Elements	Documentation Tips
Observation	Lid swelling, conjunctival injection, discharge type, corneal clarity	Use standardized descriptors (e.g., “moderate purulent discharge”); photo documentation when permitted
Symptoms	Pain, itching, foreign-body sensation, visual changes, photophobia	Record severity on numeric rating scale (0-10)
Anamnesis	Recent URI, contact lens history, allergen exposure, medication use, immunocompromised state	Include timeline of symptom evolution
Function	Visual acuity (Snellen/LogMAR), pupillary response, extra-ocular movements	Baseline measurement; note deficits
Approach	Adherence to treatment, understanding of infection-control measures	Use teach-back method to verify comprehension
****	Overall risk stratification (e.g., high-risk for complications)	Assign care level (routine, intermediate, high)

The assessment must be repeated at each encounter to monitor progression, treatment response, and emerging complications (e.g., keratitis).

EVIDENCE-BASED NURSING INTERVENTIONS

1 Infection-Control Measures

- 1. **Hand Hygiene** – Perform hand washing with soap and water or alcohol-based hand rub before and after patient contact (WHO “5 Moments”).¹¹
- 2. **Personal Protective Equipment (PPE)** – Use disposable gloves when handling discharge; eye protection for

aerosol-generating procedures (e.g., ophthalmic irrigation).

- 3. **Environmental Cleaning** – Disinfect examination tables, ophthalmoscopes, and reusable instruments with EPA-approved virucidal agents after each patient.
- 4. **Patient Isolation** – Cohort patients with highly contagious viral conjunctivitis (adenovirus) in a designated area; limit visitor traffic.

2. Pharmacologic Management

Intervention	Indication	Nursing Role
Topical antibiotics (e.g., erythromycin ointment, fluoroquinolone drops)	Confirmed or suspected bacterial infection	Verify correct drug, concentration, dosing interval; monitor for ocular irritation or hypersensitivity
Antiviral agents (e.g., topical trifluridine for HSV)	HSV conjunctivitis	Ensure proper instillation technique; assess for epithelial toxicity
Antihistamine/mast-cell stabilizer drops (e.g., olopatadine)	Allergic conjunctivitis	Educate on delayed onset of action; reinforce avoidance of known allergens
Lubricating eye drops (preservative-free)	Symptomatic relief (dryness, irritation)	Instruct on preservative-free usage frequency and storage

Nurses must observe for adverse effects such as contact-lens intolerance, corneal toxicity, or systemic absorption (rare but possible with fluoroquinolones).

3. Non-Pharmacologic Care

- **Warm or Cold Compresses** – Apply warm compresses (5-10 min) for bacterial cases to facilitate pus drainage; cold compresses for allergic cases to reduce itching and edema.
- **Ocular Hygiene** – Instruct patients to cleanse eyelids with sterile saline or diluted baby shampoo (1 % solution) using gentle downward strokes; emphasize use of separate cotton swabs per eye.
- **Contact Lens Management** – Advise immediate removal of lenses; provide guidance on disinfection or temporary cessation of wear until resolution.
- **Pain and Itch Management** – Use over-the-counter oral antihistamines (e.g., cetirizine) if pruritus is severe; assess pain using a visual analogue scale (VAS).

4. Patient Education and Health Promotion

1. **Teach-Back Technique** – Confirm understanding of medication regimen, dosing schedule, and storage.
2. **Transmission Prevention** – Discuss avoidance of eye-rubbing, hand-to-eye contact, sharing towels or cosmetics; highlight the importance of mask usage during viral outbreaks.
3. **Symptom Monitoring** – Provide a symptom diary to record discharge changes, visual acuity fluctuations, and any systemic signs (fever, lymphadenopathy).
4. **Follow-Up Planning** – Schedule reassessment within 48-72 hours for bacterial cases, and within 7 days for viral or allergic presentations; advise on

red-flag symptoms (photophobia, severe pain, decreased vision) requiring urgent evaluation.

ROLE OF THE NURSE IN SPECIFIC POPULATIONS

1. Paediatric Patients

- **Communication** – Use age-appropriate language and visual aids; involve parents/guardians in education.
- **Vaccination Status** – Verify measles-mumps-rubella (MMR) immunisation; consider post-exposure prophylaxis for susceptible children during outbreaks.
- **School Policy Liaison** – Assist families in navigating school exclusion policies; provide documentation for return-to-school clearance.

2. Geriatric Patients

Comorbidity Assessment – Screen for dry-eye syndrome, ocular surface disease, and systemic immunosuppression (e.g., diabetes).

Medication Review – Identify polypharmacy that may interfere with ocular therapies (e.g., systemic antihistamines causing dry eye).

Functional Support – Evaluate ability to self-administer eye drops; arrange for caregiver assistance when necessary.

3. Immunocompromised Hosts

High-Risk Surveillance – Promptly identify atypical pathogens (e.g., *Pseudomonas* in contact-lens wearers, fungal conjunctivitis).

Prophylactic Strategies – Coordinate with ophthalmology for prophylactic antimicrobial regimens when indicated.

INTER-PROFESSIONAL COLLABORATION

Effective conjunctivitis management hinges on coordinated efforts among:

Discipline	Contribution	Nursing Interaction
Ophthalmology	Diagnostic confirmation, prescribing topical agents	Communicates assessment findings; implements prescribed regimen
Infectious Disease	Outbreak investigation, antimicrobial stewardship	Adheres to isolation protocols; reports resistance patterns
Pharmacy	Drug preparation, counseling on preservative-free formulations	Verifies dosage accuracy; educates on storage
Public Health	Community education, school-based screening	Facilitates health-promotion campaigns; distributes educational materials
Education (School Nurses)	Early detection, school-based hygiene reinforcement	Provides guidance on exclusion criteria; monitors absenteeism patterns

Regular interdisciplinary huddles (daily or per shift) improve continuity of care and reduce duplication of effort.

OUTCOMES MEASUREMENT AND QUALITY IMPROVEMENT

1. Core Nursing Indicators

Indicator	Target	Data Source
Time to Initiation of Appropriate Therapy	≤4 h from presentation	EMR timestamps
Patient-Reported Symptom Relief (VAS)	≥70 % reduction by Day 3	Symptom diary
Compliance with Hand Hygiene	≥90 % observed compliance	Direct observation audits
Rate of Nosocomial Transmission	0 % (outbreak-free)	Infection-control surveillance
Patient Satisfaction (Likert 1-5)	≥4.5	Post-discharge survey

2 Continuous Quality Improvement (CQI)

- **Plan-Do-Study-Act (PDSA) Cycles** – Implement pilot education bundles (visual aids + teach-back) and assess impact on compliance and symptom resolution.
- **Root-Cause Analyses** – Conduct after any healthcare-associated transmission event to identify lapses in PPE or hand-hygiene practices.
- **Benchmarking** – Compare institutional data to national standards (e.g., CDC’s “Conjunctivitis Prevention Toolkit”) to identify performance gaps.

optimal care.

- **Patient Adherence** – Frequent dosing schedules (e.g., every 2 h) are difficult for caregivers; education alone may not overcome barriers.
- **Diagnostic Uncertainty** – Overlap of clinical signs between bacterial and viral forms leads to empirical antibiotic use, contributing to antimicrobial resistance.
- **Cultural Beliefs** – Traditional remedies (e.g., herbal eye washes) may delay presentation and conflict with evidence-based protocols.

Addressing these obstacles requires tailored strategies: point-of-care rapid testing, simplified dosing regimens, culturally sensitive education, and advocacy for supply chain improvements.

BARRIERS AND CHALLENGES

- **Resource Limitations** – In low-resource settings, lack of disposable eye-drops, PPE, and microbiology services hampers

FUTURE DIRECTIONS AND RESEARCH PRIORITIES

Research Area	Rationale	Potential Impact
Point-of-care molecular diagnostics (e.g., rapid adenovirus PCR)	Enable precise etiologic identification	Reduce unnecessary antibiotic use
Tele-ophthalmology triage	Expand access in rural/underserved areas	Early detection, decreased transmission
Adherence-enhancing technologies (e.g., smart eye-drop bottles)	Objectively monitor dosing	Improve treatment outcomes
Antimicrobial-resistant conjunctivitis surveillance	Track emergent resistant strains	Guide stewardship policies
Behavioural interventions for hygiene compliance	Apply health-behavior theory to hand-hygiene	Lower nosocomial spread

Funding agencies and professional societies should prioritize multidisciplinary investigations that integrate nursing science, ophthalmology, and health-informatics.

CONCLUSION

Conjunctivitis, while often benign, presents a substantial clinical and public-health

challenge due to its transmissibility, diverse aetiology, and potential for complications. Nursing care—grounded in thorough assessment, evidence-based interventions, rigorous infection-control, and patient-centred education—plays a decisive role in mitigating disease burden. This review consolidates current knowledge into a structured nursing care framework (OSAFA) and underscores the importance of inter-professional collaboration and continuous quality improvement. By embracing emerging diagnostic tools, technology-enabled adherence strategies, and culturally competent education, nurses can further enhance outcomes for individuals and communities affected by conjunctivitis.

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