

# Community Based Independent Prescribing

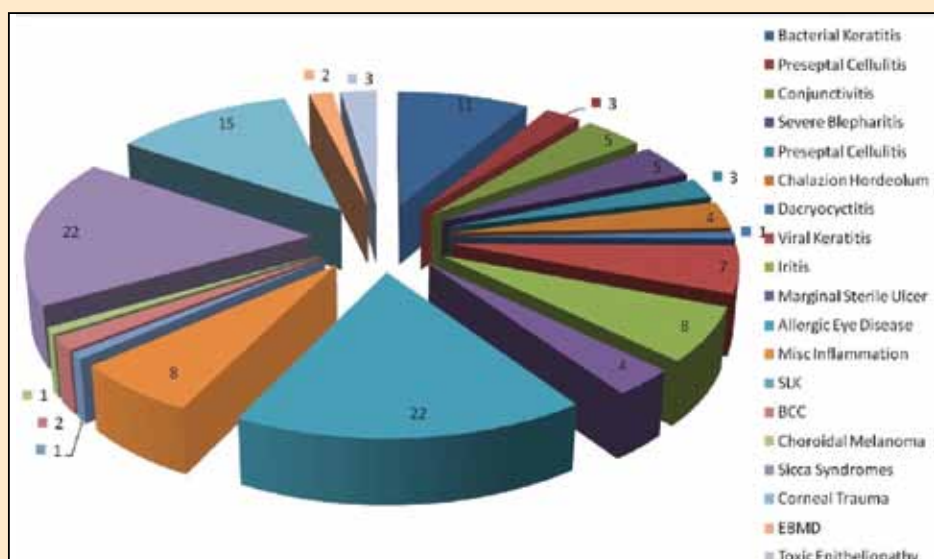
**COURSE CODE C-17277 O/AS/SP/IP**

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Community based independent prescribing (IP) optometrists tend to work in isolation, an intimidating concept. However, for IP to impact on commissioning consortia by saving money whilst improving access to care, promptness of care, and appropriateness of care, the services need to be driven from a community perspective. Optometrists need to be the GPs of community eye care. Based on audit results of IP activity of the author, this article highlights the role of IP in community practice, with the hope that this will encourage much greater uptake in these qualifications by optometrists.

The College of Optometrists<sup>1</sup> state that practitioners 'must only ever prescribe within your level of experience and competence'. This means that whilst

some IP practitioners will feel confident in diagnosing and treating conditions, others will feel more comfortable with monitoring already diagnosed cases,



**Figure 1**

Total acute presentations of cases requiring IP intervention over a 12-month period. KEY: SLK = superior limbic keratitis; BCC = basal cell carcinoma; EBMD = epithelial basement membrane dystrophy

eg, glaucoma and those with ocular hypertension. Indeed, practitioners should always practice within their own capabilities and confidence levels.

## Audit results

Over the 12 month period from June 2010 to June 2011, the author's practice therapeutically managed on average about 3 cases per day. Audit results during this period are shown in Figure 1, which displays the total breakdown of acute or unplanned presentations that required IP intervention. Only cases requiring IP ability were included in the audit. Many presentations were manageable under core competency levels of skills eg, mild seasonal and perennial allergic conjunctivitis and dry eye, and were not included in these figures. Tear deficient dry eye conditions were only included when requiring Sjogren investigations or prescription only medications (POMs).

Figure 2 displays the breakdown of patients investigated/managed for glaucoma. Patients with glaucoma were only included if they were not under routine HES care, were stable and discharged to our care, or patients not yet diagnosed and under regular review for progression or ocular hypertension (OHT).

All assessments carry private charges. Northumberland does not have a shared care scheme for acute presentations and apart from in-house information and reactive education of the healthcare community via GP reports, there is no advertising of IP services. Regardless, the practice receives regular referrals from GPs, who are aware of the private charges, as well as pharmacies and self referrals. Patients not prepared to pay the fees are directed to the HES. The data presented must be considered a very conservative estimate of the total level of activity possible within the

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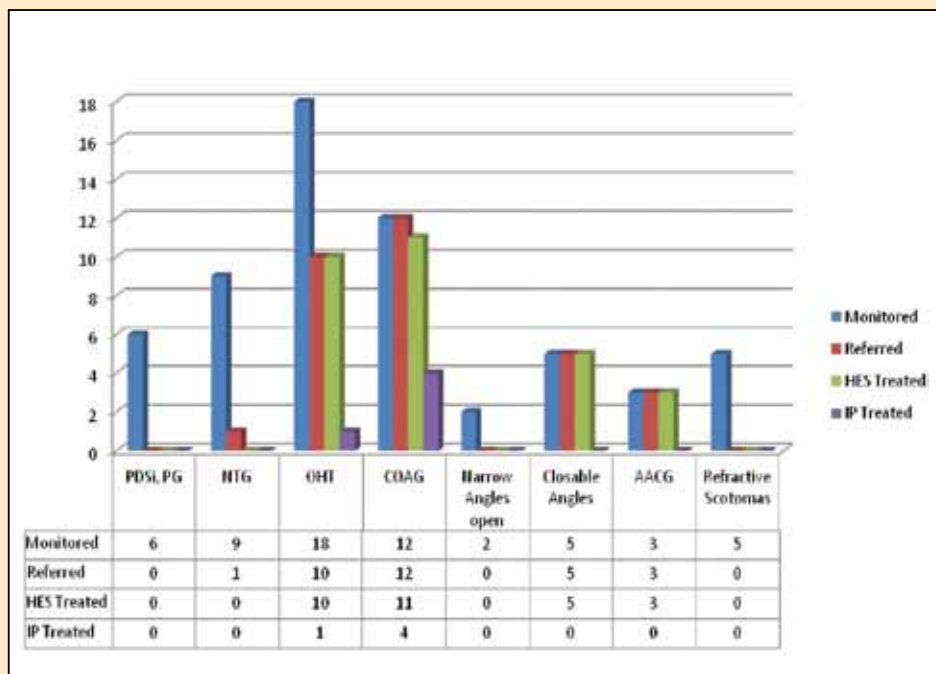
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community, if official Care Trust funded and promoted services were provided.

## Bacterial keratitis

Treating suspect bacterial keratitis within the community, and without access to laboratory facilities and cultures, is controversial. Ray-Chaudhuri<sup>2</sup> states that suspect bacterial keratitis requires a corneal scrape and culture. There are no exclusion criteria. However, of the five cases of suspected bacterial keratitis that the author referred to the HES, four were treated empirically with ofloxacin, without cultures; all four were treated intensively, indicating infective (bacterial) keratitis was suspected. The fifth patient, a contact lens wearer with no history of trauma, referred with a central corneal lesion was diagnosed at the HES as having a corneal abrasion and treated with chloramphenicol. Only at the 24 hour review appointment was bacterial keratitis diagnosed, the patient hospitalised and treated with fortified antibiotics and cultures taken. Why the conflict in approach? Culture yields as low as 63% have been reported,<sup>3</sup> while over 80% of ulcers respond well to empirical broad-spectrum treatment.<sup>4</sup>

Significant predictive factors for treatment success or failure are lesion size, promptness of presentation, the patient's age, co-existing corneal pathology and use of topical steroids.<sup>4</sup> A general reduction in immune competence would also contribute. It is further suggested that young patients with small ulcers should respond well with empirical treatment and would be unlikely to be culture positive. Conversely, older patients (>60 years) with large ulcers (>5mm) are at 5.5x greater risk of primary treatment failure. It has also been suggested that resistance is unlikely



**Figure 2**

Management of patients diagnosed with glaucoma by IP optometrists. KEY: PDSi = pigment dispersion syndrome; PD = pseudoexfoliative glaucoma; NTG = normal tension glaucoma; OHT = ocular hypertension; COAG = chronic open angle glaucoma; AACG = acute angle closure glaucoma

with community-acquired keratitis.<sup>5</sup> Many of these observations have been amalgamated into the objective '1, 2, 3' guidelines, which suggest that bacterial keratitis presentations showing  $\leq 1+$  cells in the anterior chamber, being  $\leq 2$ mm in size and with a lesion edge  $\geq 3$ mm from the cornea centre are not potentially sight threatening, are unlikely to be culture positive, and so could reasonably be treated empirically with a fluoroquinolone.<sup>6</sup>

Clinical decisions should be made based on severity, symptoms, compliance and ease of access to laboratory facilities. If a decision to treat empirically is taken it must reflect each individual presentation and the practitioner's confidence; the '1, 2, 3' guidelines lend objective support for such decisions. Certainly all cases of suspect bacterial keratitis managed by the author's practice have been treated successfully.

When prescribing antibiotics, one must also be wary of inappropriate use, which falls into two categories: incorrect diagnosis and sub-therapeutic dosing.<sup>3</sup> An intensive therapeutic strategy, with initial loading dose and subsequent hourly daytime dosage and nocturnal cover, is instigated whenever bacterial keratitis is suspected within the practice; the potential risk with sub-therapeutic dosing is too high. In the case of marginal keratitis, this is always treated more conservatively with polyfax qid; steroids are not considered necessary in all cases.

## Viral keratitis

GOC guidelines<sup>7</sup> state: 'Independent prescribers take responsibility for the clinical assessment of the patient, establish a diagnosis and determine the clinical management required, (including prescribing



<b>I. Ocular Symptoms (at least one)</b>	Dry eyes >3 months Foreign body sensation in the eyes Use of artificial tears >3x per day
<b>II. Oral Symptoms (at least one)</b>	Dry mouth >3 months Recurrent or persistently swollen salivary glands as an adult Drink liquids to swallow dry foods
<b>III. Ocular Signs (at least one)</b>	Schirmer's test, (without anesthesia) $\leq 5$ mm/5 mins. (Substitute less uncomfortable Phenol red thread test) Positive vital dye staining (van Bijsterveld $\geq 4$ ) (Substitute lissamine green)
<b>IV. Histopathology</b>	In minor salivary glands, focal lymphocytic sialoadenitis with a focus score of 1, defined as a number of lymphocytic foci per 4mm of glandular tissue
<b>V. Oral Signs (at least one)</b>	Unstimulated whole salivary flow ( $\leq 1.5$ mL in 15 mins.) Abnormal parotid sialography Abnormal salivary scintigraphy
<b>VI. Auto-antibodies (at least one)</b>	Anti-SSA (Ro) or Anti-SSB (La) or both
<b>Primary Sjogren's syndrome diagnosis</b>	a. Any 4 of the 6 criteria, must include either item IV (Histopathology) or VI (Auto-antibodies/Serology)  b. Any 3 of the 4 objective criteria (III, IV, V, VI)
<b>Secondary Sjogren's syndrome diagnosis</b>	In patients with a potentially associated disease (for instance, another well defined connective tissue disorder), the presence of item I or item II plus any 2 from among items III, IV and V

**Table 1**

Revised International Classification Criteria for Sjogren's Syndrome. Adapted from Vitali et al.<sup>14</sup>

where necessary).’ Implicitly the choice of treatment is contingent on correct diagnosis. If we cannot diagnose we should not be allowed to treat. Regardless, the College of Optometrists’ Clinical Management Guidelines prepared for IP optometrists<sup>8</sup> recommend that no treatment should be instigated by the optometrist for

new presentations of viral (Herpes Simplex) keratitis ‘because this could make confirmation of the diagnosis by the ophthalmologist more difficult’.

Herpes Simplex Keratitis isolated to the epithelium is confidently treated within the practice with topical aciclovir 5 times per day for 10 days. Presentations with interstitial and

inflammatory components are more likely to be referred as they usually require chronic care and fall beyond the financial scope of a private practice. However, prophylactic systemic aciclovir has been prescribed for patients with previously treated Herpes Zoster Keratitis.

### Sjogrens syndrome

Sjogren's syndrome is classically under-diagnosed, with delays of up to 11 years reported.<sup>9,10</sup> Jonsson et al.<sup>10</sup> also suggest that the delay in diagnosis is, in part, due to a lack of awareness of the disease among health care professionals. Optometrists should have access to objective and subjective techniques to improve sensitivity and specificity of diagnosis. The sicca symptoms cause significant quality of life morbidity,<sup>11</sup> as well as a range of more significant co-morbidities, some life threatening.<sup>9,10</sup> Significant morbidities directly attributable to dry eyes and mouth can include mouth sores, malnutrition, oral candidiasis, sleep disruption with secondary fibromyalgia, accelerated dental caries, bacterial conjunctivitis, corneal ulceration and vision loss.<sup>12</sup>

There is no single infallible test for Sjogren's syndrome;<sup>13</sup> diagnosis must assess ocular and salivary components as well as differentiate between primary and secondary disease. Vitali et al.<sup>14</sup> presented the ‘Revised International Classification Criteria for Sjogren's Syndrome’, which is a 6-item criteria set with demonstrated value as a diagnostic tool (Table 1). Items I to III can be readily incorporated into routine optometric practice.

The Sjogrens Classification protocol was considered necessary for 22 patients in the author's practice. Two were referred to secondary care for a full work-up with salivary gland

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biopsies, two were co-managed with the GP, and five were considered to be suffering from keratoconjunctivitis sicca (KCS), but all had reports sent to GPs or Rheumatologists. Milder cases are managed within the practice typically with hyaluronates and mucolytics; steroids have not been employed as yet. Included in the group of patients with dry eye are some cases of Bell's Palsy, which were co-managed with the GP who prescribed systemic steroids, and lagophthalmos.

## Inflammatory conditions

A significant number of inflammatory conditions were treated by the author's practice; iritis, episcleritis, limbitis, pingueculitis, vernal keratoconjunctivitis (VKC), atopic keratoconjunctivitis (AKC) and seasonal and perennial conjunctivitis. Iritis was the most significant condition encountered and was managed using a specific procedure whereby repeated instillation of 2.5% or 10% phenylephrine was conducted to break synechiae. This was in direct response to the clinical experience gained from dealing with acute iritis and exemplified the need to constantly re-assess practice performance. Mandatory is a dilated fundus examination of both eyes to ensure the inflammation is limited to the anterior chamber and, of course, monitoring for steroid responders.

A number of unidentified inflammatory episodes were also treated by the author's practice. All were successfully managed and although a definitive diagnosis is not always evident, this highlighted the confidence needed in differentiating an external inflammatory event from an infective; where a practitioner does not possess this confidence, referral to ophthalmology is advised.

## Corneal abrasions & foreign bodies

Twelve cases of foreign body removal or corneal abrasions were managed in the practice. One patient with blunt penetrating foreign body trauma presented with positive Seidel sign; the patient was referred immediately to the HES, who were notified prior to the patient's arrival. Other blunt traumas included one who was managed with Ibuprofen and another who required referral for a magnetic resonance imaging (MRI) scan and was found to be suffering from concussion; no treatment was given to this patient.

Three cases of eye drop toxicity were also encountered. One patient took many months to regain their visual clarity but all were managed with patient education.

## Infective conditions

The five cases of blepharitis included in the audit were serious and chronic enough to require systemic antibiotics (100mg doxycycline for 6 weeks). A severe case of conjunctivitis was also observed, diagnosed as angular (Moraxella) conjunctivitis, which has an appearance in the lateral canthi and can easily be mistaken for episcleritis; significantly however, the conjunctivitis was bilateral and there was some associated blepharitis and discharge indicative of an infective aetiology. All cases of pre-septal cellulitis were successfully treated with 250mg amoxicillin after ensuring that there was no history of allergy to penicillins.

## Glaucoma

There is ongoing debate as to whether IP qualifications should permit the diagnosis and treatment of glaucoma independently. Despite this debate, or its ultimate outcome, within specific constraints glaucoma

is treated independently in the practice; the primary consideration is the patient's best interests.

The author has managed four specific cases of glaucoma in community practice. One of these was an 81-year-old gentleman with advanced age-related macular degeneration (AMD), with logMAR visual acuity of 1.6 and who had obvious glaucomatous optic nerve head cupping. Concerned about the political ramifications, the glaucoma consultant at the local hospital was contacted and the clinical management plan explained prior to treatment. The proposal to treat to protect peripheral vision was positively received, reinforcing the author's confidence while enhancing inter-professional communication and co-operation.

The author has also prescribed medication for patients with ocular hypertension and chronic open angle glaucoma (COAG); all were elderly and patient mobility and limited access to eye care at the HES was a prime consideration.

Intervening with non-compliant patients has been necessary on several occasions. The most significant was on Christmas Eve 2010; an elderly patient with a blind left eye and COAG in the right eye. With no medication list he simply knew he had three eye drops but had stopped using one. Intraocular pressure (IOP) in the right eye was 40mmHg (Goldmann applanation tonometry - GAT). The HES was contacted and this conversation revealed that the gentleman was supposed to be instilling atropine and predforte into the blind eye for ocular comfort and xalatan in the right eye. It transpired that the patient had stopped taking the xalatan but to compensate was putting the predforte into his right eye. The author confirmed with the ophthalmologist that he would re-

enforce the treatment modalities with the patient, by stopping the patient from instilling predforte in the right eye, and immediately re-prescribing xalatan. The author ensured that the GP was aware so that he/she could provide ongoing repeat prescriptions. Upon review a few weeks later, IOP in the right eye was 18mmHg.

Patients that were referred by the practice for closable angles all had iridotomies or cataract extraction. One patient was referred for progressive normal tension glaucoma (NTG) but this was not confirmed and the patient was discharged.

Referral for suspect COAG was confirmed in all but one case. This patient had been monitored for some time and while the diagnosis of frank COAG was not confirmed, the patient has not been discharged from HES and is being monitored. This rather reflects the dislocation of optometry and ophthalmology. The patient had been monitored in the community for several years and was referred with a high suspicion of progressive neuropathy. However the HES will base any diagnosis on its own data collation.

The patients not referred for ocular hypertension were found to comfortably fall outside the treatment guidelines based on age and central corneal thickness (CCT) and in the absence of any signs of frank glaucoma.

## Discussion

An essential process for IP practitioners, and highly recommended for all optometrists too, is the instigation of an outcome audit system ensuring every patient is followed-up. Whether managed solely by the optometrist, co-managed with the GP or referred to the HES, every episode must represent a learning experience. A diagnosis and management plan should be prepared which, if not personally managed to resolution,

can be compared to HES treatment.

Text books and the College of Optometrists' Clinical Management Guidelines<sup>8</sup> outline treatment strategies but doses and schedules are not usually specified. Reviewing HES treatment modalities will help but several invaluable web resources are available. Indispensable are the electronic British National Formulary (BNF)<sup>15</sup> and e-medicines;<sup>16</sup> both are current and evidence-based resources. Importantly e-medicines outlines medical management for specific ocular conditions, listing drugs, doses, schedules and common adverse drug reactions. Both web resources require registration but are free. In-depth information for specific drugs is listed in their Summary of Product Characteristics (SPCs) obtainable from Electronic Medicines Compendium.<sup>17</sup>

Reflective practice has led to significant modification of clinical practice. Introduction of generic information leaflets with medication names, dosages, schedules and potential adverse reactions can be readily printed, allowing a clinical receptionist to re-enforce patient education and improving compliance.

Another response to clinical experience was the introduction of a practice dispensary. Best practice would recommend prescribing via a second party, guaranteeing a double check. The practice dispensary was introduced because, especially on Saturdays, patients are not always able to obtain the drugs required promptly from local pharmacies; 24 hours or even 36 hours may elapse. Drugs stocked include aciclovir, predforte, fluorometholone (FML), olopatadine, ofloxacin, and diclofenac eye drops. If dispensed the author's practice charge a private prescription cost.

Outcome audit allows sensitivity

of care to be quantified but not the specificity. A diagnosis must be considered the best hypothesis. All episodes need to be monitored until resolution but the accuracy of the diagnosis cannot be confirmed. Optometrists need to work to their own clinical confidence, which only comes with experience. Good relations with ophthalmology are important and reasonable and ingenuous enquiries are invariably well received. Rapport with ophthalmology is a great support and it is always worth confirming with consultants that they do not mind being contacted directly; HES clinics, particularly glaucoma clinics, are overloaded and direct communication and referral is an area where primary and secondary care can work together, benefiting all.

Peer reviews are invaluable too. The small quorum of Northumberland based IP practitioners meet quarterly to discuss cases and the mix of community and hospital based optometrists brings a breadth of experience to the discussions. The practice protocol for managing iritis can be attributed to the advice given by hospital based IP optometrists

## About the author

Peter Frampton studied optometry in Brisbane, Australia, and moved to Britain in 1986. He attained a Masters Degree in Ocular Therapeutics from Bradford University and has Additional Supply, Supplementary Prescribing and Independent Prescribing qualifications. Peter has recently been made a Fellow of the College of Optometrists.

## References

See <http://www.optometry.co.uk/clinical/index>. Click on the article title and then download "references".

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## Module questions

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### Course code: C-17573 O

#### 1. Epiretinal membrane:

- a) May be caused by previous retinal vein occlusion
- b) Causes continuous worsening of vision due to distortion
- c) Is always present when a PVD has occurred
- d) Requires treatment in the vast majority of cases

#### 2. Which of the following statements about a full-thickness macular hole is TRUE?

- a) It can be excluded if a PVD is present
- b) It does not occur in males
- c) It does not lead to retinal detachment
- d) It may reduce central vision to 3/60

#### 3. Age-related macular degeneration:

- a) Is always in the "wet" form if distortion is present
- b) Is characterized by retinal wrinkling
- c) Requires urgent assessment if distortion has been present for 2 weeks
- d) Can always be treated with Lucentis or Avastin

#### 4. Central serous retinopathy:

- a) Usually have some pigmentary changes in the RPE
- b) Only occurs in males
- c) Requires urgent treatment
- d) Is now usually treated with Lucentis or Avastin

#### 5. Choroidal new vessels (CNV):

- a) Resemble lacquer cracks
- b) Can give rise to presumed ocular histoplasmosis syndrome (POHS)
- c) Are the chief cause of angioid streaks
- d) May result from compromise of Bruch's membrane in a variety of conditions

#### 6. Which of the following statements about distortion of vision is TRUE?

- a) It often denotes serious underlying eye disease
- b) It often demands urgent assessment in a secondary care setting
- c) It may be best managed surgically, even in patients of advanced age
- d) All of the above

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#### 1. Which of the following statements is FALSE? IP optometrists:

- a) Must only prescribe within their level of experience and competence
- b) Must take responsibility for clinical assessment, diagnosis and management, prescribing where necessary
- c) Must contractually adhere to the College of Optometrists' Clinical Management Guidelines
- d) Must lodge an interest in acute eye care, glaucoma or both

#### 2. Considering the factors that affect treatment of bacterial keratitis, which one of the following lists is INCORRECT?

- a) Patient age, immunocompetence, general health
- b) Steroid use, co-existing corneal pathology, gender
- c) Size of the lesion, promptness of presentation, location of lesion
- d) Hospital vs. community infection, therapeutic dosage level, patient compliance

#### 3. Which of the following statements regarding the classification criteria for Sjogren's Syndrome is TRUE?

- a) Item I or II plus two from Items III, IV, V, and VI indicates secondary Sjogren's

- b) Any 4 items, as long as IV or VI are included, indicates primary Sjogren's
- c) Sensitivity & specificity of referral can be improved if optometrists assess 4 of the 6 items
- d) Phenol red thread is quicker but less comfortable than Schirmer strips

#### 4. Which of the following is LEAST useful for obtaining information on drug doses and adverse reactions?

- a) Text books
- b) E-medicine papers for the condition diagnosed
- c) The SPCs of individual drugs from electronic medicines compendium
- d) Most up-to-date BNF

#### 5. Vital processes to incorporate into community practices include:

- a) Outcome audits
- b) Peer reviews
- c) Modification based on local needs and experience
- d) All of the above

#### 6. Which combination of ocular condition and treatment is CORRECT?

- a) Blepharitis: day 1 loading dose of 100mg bid then 100mg doxycycline 1x daily for 6 weeks
- b) Herpes Simplex Keratitis (Epithelial): 3% aciclovir ointment 5x daily for 10 days
- c) Preseptal Cellulitis: 250mg amoxycillin every 8 hours for 10 days
- d) All of the above



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