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# **An Evidence Base for Ophthalmic Nursing Practice**

Edited by Janet Marsden  
Manchester Metropolitan University



John Wiley & Sons, Ltd



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# Preface

The evidence base for ophthalmic care is often scanty. Practice differs, with different rationales in different areas and, often, we do not really know why we do what we do. This book was born out of the recognition by the Royal College of Nursing's Ophthalmic Nursing Forum Steering Committee that best practice in ophthalmic care across the UK should be synthesised along with the evidence to support it, to enable practitioners to develop guidelines and to identify and use the best evidence possible in the care of patients with ophthalmic problems.

This book aims to address some of these issues. Where there is robust evidence, it is identified, practitioner experience is incorporated and, when there is no obvious 'scientific' evidence, consensus expert opinion is included.

In many ways, this is 'work in progress'. Practice will continue to evolve; we will get more effective at both synthesising evidence and actually researching our own practice. Evidence will be found to support, and refute, our work and we must be open minded enough to debate issues around practice and to change when we need to. More topics will need to be considered as new techniques and therapies are developed.

We hope that this book is useful and if there is any progress or evidence that you want to let us know about, do please contact me.

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# Introduction: evidence and practice

This book considers some of the evidence base for ophthalmic nursing practice – the ‘whys’ of what we do. My interest in the evidence base for practice began fairly early in my nursing career when I realised that, often, there was little obvious reason for why we did what we did and when I asked why (because I’m like that!) no one could really explain. One of my first forays into using actual evidence in practice was after I read somewhere that EUSOL (Edinburgh University Solution of Lime for those readers who are old enough to remember), a wound cleaning solution that appeared to work very well, stopped tissue granulation. It cleaned the wound beautifully, but damaged the wound bed and actually resulted in a clean wound, although one that healed poorly. The evidence was very persuasive and chimed with my own experience, so the nurses in the department that I was managing at the time discussed changing our practice – and stopped using it, much to the disgust of our medical colleagues! Over the years, I have become even more interested (not to say a little obsessive about asking ‘why?’) and hope that this book helps to provide some of the answers. It has been prepared by a team of nurses who are passionate about their speciality – past and present members of the steering committee of the Ophthalmic Nursing Forum of the Royal College of Nursing.

## WHAT IS EVIDENCE-BASED PRACTICE?

First of all, it is not hearsay – ‘I heard this was true so we must do it’ is not a good basis for practice. Nor is it the result of a single (bad) paper. It is interesting that sometimes a single notion can ‘change the world’ of work. An example of this was in 1998 when a single paper, published in the *British Medical Journal*, suggested that topical chloramphenicol, one of our mainstays of treatment

and a prophylaxis for ophthalmic infection, had the same effect as the systemic drug and could precipitate blood dyscrasias, including aplastic anaemia (Lancaster et al. 1998). Despite a robust refutation of this (Walker et al. 1998), almost all the general accident and emergency departments in the UK appeared to stop using this drug immediately (most doctors appear to read the *BMJ* if nothing else; the second paper was in *Eye* – a specifically ophthalmic journal – it really matters where you publish your evidence!). Ophthalmology, in general, ignored the available ‘evidence’ and did not alter practice. Subsequently, the results of Lancaster’s paper have been discredited and it is now generally believed that topical chloramphenicol is extremely safe (Field et al. 1999) and is widely used in both general and ophthalmic emergency departments.

Evidence-based practice is not what you’re told to do – following orders has never been a good defence for inappropriate action! Our profession needs nurses who say why – incessantly – and are not happy until they get a good answer!

It is not what we have always done either – stagnation results when we continue to do what we have always done. The many and varied rituals in nursing seem to be gradually diminishing but I am sure that many remain.

Evidence-based practice is a careful consideration of all the information available and a decision based on this, and the particular situation in which the clinician and patient find themselves.

## WHAT IS EVIDENCE?

How do we know what we know? Knowledge can be classified in a number of ways such as:

- Experiential knowledge: such as how to swim or ride a bicycle; the things we learn by experience that will always be part of what we know.
- Mutual knowledge: how we all know that spiders are more frightened of us than we are of them.
- Formal knowledge: the systematic exploration and sifting of evidence.

- Tacit knowledge: that which we do not know we know.
- Craft-based knowledge: that which goes with the job.
- Common knowledge: that which we all know.

In 'civilian' and professional life we use all these types of knowledge and in nursing we use combinations of these. This becomes our nursing knowledge, which in turn informs our practice. There has to be a balance between these types of knowledge in our work, however, and we must 'evidence' what we do with formal or scientific knowledge so that our practice is based on evidence, rather than myth and tradition. We must be aware of the evidence that informs our experience, and if there is not any, perhaps we need to think about how we can go about producing some.

There are many different types of evidence that may inform practice: scientific knowledge may be in the form of international, national or more local research. Meta-analysis and systematic reviews are said to constitute the highest level of evidence because they synthesise all the available evidence; however, minor decisions and differences in the literature-searching and review process can have a major impact on the results. Meta-analyses may be compromised by the scales chosen (and there are many) to rate and therefore select the evidence to be analysed. Large, international and national research studies may be felt to be at a high level within any hierarchy of evidence. They are likely to be high-quality research but, as with any research, must be read with a critical eye. They may not, although generalisable in theory, give the answers that you need in your particular practice. The funding for large-scale research often follows health priorities and the area that you are interested in may not, at present, be a priority area. The evidence may therefore not be available when you need it. Local research evidence uses small-scale studies to investigate local problems and, although not necessarily generalisable to large populations, may be useful in your particular practice and available (or do-able) when you need it. There is no reason why small studies should not be just as rigorous as large studies are (or are intended to be) and often have much more relevance to local patient populations.

Other evidence that is available includes consensus and expert opinion and this is often available in your local area – your clinical experience and that of other clinicians around you is often very valuable and should not be discarded, as long as objectivity is maintained and biases are identified!

This informal knowledge is often context specific, and all clinicians must be aware that it needs continual review and updating. Never forget though that as Neils Bohr (a Danish physicist) said, 'An expert is someone who has made all the mistakes that can be made, but in a very narrow field' (Bohr, quoted in Mackay 1994).

Ultimately, evidence is knowledge of varying types, from a variety of different sources. The claims made for it must be commensurate with the strength of the evidence and for local use and within a given context; informal knowledge is often both adequate and effective. For wider application, or for situations of potential major impact, stronger evidence is required. Where robust research evidence does not exist (and in many areas, it would be unethical to start trying to prove why we do what we do, because we have been doing it for so long that it has become normal practice), expert and, even better, consensus-based expert opinion is the best evidence available.

#### WHAT DO WE DO ONCE WE HAVE EVIDENCE?

The two main things that need to be done with available evidence are evaluation and application.

#### **Evaluation**

To evaluate the evidence clinicians need the ability to analyse the evidence critically – to read more than just the abstract, or the introduction and conclusion of an academic article, and to understand it (and sometimes this can take a while!). The ability to analyse evidence critically is not enough on its own though. Evidence must relate to practice and must be critiqued, when it is to be applied in practice, through a filter of subject expertise.

#### **Application**

An example of this might be: why do ophthalmic professionals often give an antibiotic ointment if a patient has corneal epithe-



lial loss? Evidence shows that ointment may actually retard epithelial healing and there is no large study that compares antibiotic with no antibiotic and looks at healing. It could be suggested, therefore, that antibiotic and ointment are not required. However, our ophthalmic subject expertise tells us that the tight junctions of corneal epithelium stop pathogen ingress into corneal tissue and further into the eye. If epithelium is lost, as in corneal foreign body or corneal abrasion, the major defence of the eye against pathogens is reduced. Some pathogens are devastating to the eye, all are difficult to treat if they enter the eye and can result in loss of the eye. We give antibiotics after corneal epithelial loss as a prophylaxis against infection rather than as a healing agent, and as clinicians, we know that the greasy film of ointment between the eye and lid is often more comfortable than just a drop.

#### APPLICATION OF EVIDENCE IN PRACTICE

To apply evidence in practice, clinical experience is key. Practice is not just about the application of scientific or pseudoscientific rules. Clinical experience, based on personal observation, reflection and judgement, is needed to translate scientific rules into the care of individual patients.

Research generalises and considers probabilities of situations occurring; it may also be situational and not applicable in a particular circumstance. Research evidence may be population based, expressed in terms of probability and risk that are helpful indicators, but the results are not necessarily applicable to an individual – it depends on the individuals being alike or at least interchangeable. Ultimately, patients are individuals; they are all different and the application of evidence should be used to enhance practice, not used as a blanket with which to smother individualised care. Clinical experience is the crucial element that separates evidence-based practice from practice by rote and the mindless application of research-based data and, while experience is often characterised as anecdotal, ungeneralisable and a poor basis on which to make scientific decisions, it is often a more powerful persuader than scientific publication in changing clinical practice. Combining clinical experience with good evidence

is the key to what Sackett et al. (1996: 71) say evidence-based medicine, or practice in this case, should be:

Evidence based medicine is the conscientious, explicit and judicious use of best evidence in making decisions about the care of individual patients.

The question to ask is whether the results or evidence will help me in caring for my patients – often this is not expressed in the literature, or is done in a perfunctory way. To add to our evaluation skills of critical analysis and subject expertise, therefore, we need clinical expertise.

#### VALUES AND CULTURE

The dominant culture in a particular area may affect how evidence and expertise are valued, for example, a very quantitative culture may downgrade the usefulness of qualitative studies. A very medicalised culture may downplay or denigrate the value and usefulness of nursing or other allied health professions' research. Conversely, quantitative evidence may be discarded because it generalises – or because we do not understand the statistics!

Values are often not recognised but play an important part in the application of evidence. Those who believe in complementary medicine, for example, may highlight any information that supports its use whereas those who do not may ignore any positive evidence.

Practitioners vary in what they regard as reliable evidence; each is influenced by his or her own interests and values, which will affect the way that he or she interprets facts and information; evidence is rarely definitive.

Experience leads to systems of belief – evidence may challenge those beliefs and clinicians may find it very difficult to accept evidence that is counterintuitive for them. Evidence may therefore be ignored. Bleek (2000) proposed a different hierarchy of evidence to what is normally accepted but which perhaps reflects how many people operate (Box 1)!

**BOX 1**

Class 0 Things that I believe

Class 0a Things that I believe despite the available data

Class 1 Randomised controlled clinical trials that agree with what I believe

Class 2 Other prospectively collected data

Class 3 Expert opinion

Class 4 Randomised controlled clinical trials that don't agree with what I believe

Class 5 What you believe that I don't

From Bleek (2000).

Although this is very tongue in cheek it is not hard to recognise the validity of what Bleek proposes in ourselves and in others. Evidence that supports tends to be accepted more readily than evidence that challenges deeply held values.

**FINANCE**

Practice is often finance influenced and what is best practice, according to the evidence and the situation in which the clinician and patient find themselves, may not be possible because of its cost or availability. What must be aimed for, in this case, is the best available practice and the least compromise in care, an uncomfortable notion for most clinicians and one that is hard to explain to patients in an era where best practice information is so readily available.

**CHANGE**

Change is often difficult and uncomfortable and persuasion, tact and other highly developed change management skills are likely to be needed to modify deeply held beliefs. It is always nice to be surprised, however, and it may be that colleagues are ready for change, open to suggestion, eager to try new things and receptive to evidence and the need for it as a basis for practice.

## EVIDENCE INTO PRACTICE

To ensure a robust evidence base to our practice therefore, we need to be able to evaluate the evidence using our critical analysis skills and subject expertise. To apply the evidence, we need clinical expertise and an objective stance, along with an awareness of competing ideas and robust change management skills!

And finally, something that I found quite recently, but which demonstrates very effectively an argument for evidence rather than ritual, rumour and gossip:

Do not believe in anything simply because you have heard it

Do not believe in anything simply because it is spoken and rumoured by many

Do not believe in anything simply because it is found written in your religious books

Do not believe in anything merely on the authority of your teachers and elders

Do not believe in traditions because they have been handed down for many generations

But after observation and analysis, when you find that anything agrees with reason and is conducive to the good and benefit of one and all, then accept it and live up to it.  
(Gautama Buddha AD 430)

Ultimately, applying evidence in our practice will challenge the way that we work and may be contrary to some of our most deeply held beliefs about nursing and the way that we care for our patients and clients; however, embracing the concept of evidence-based practice means taking on things that you do not like as well as things that you do!

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# Section 1

Lids and lacrimal





Basal cell carcinoma (BCC) is a proliferation of the basal cells of the dermis in human skin. There are four recognised types of BCC: nodular, cystic, granular and sclerosing. Nodular BCC is the most common finding and easily recognised with a little experience.

Basal cell carcinomas rarely metastasise but do retain the capacity to do so. Twenty-four per cent of all diagnosed BCCs are to be found in the eyelids and BCCs make up 90% of malignant lid lesions (Sowka et al. 2007). Incorrect diagnosis is possible, with confusions being made with sebaceous cysts, squamous cell carcinomas, solar keratosis and chalazion.

## SIGNS AND SYMPTOMS

Typically, all except the sclerosing type have a similar pattern of growth. A discrete spot appears that is not troublesome to the patient. Over a period of 12–18 months the spot slowly grows to 10mm in diameter. A well-defined, rolled, pearlesque edge is evident. Also present is hyperpigmentation of the lesion, often with small blood vessels growing through it close to the skin surface (telangiectasis).

Nodular and cystic lesions bleed easily and the patient often reports that touching a lesion will produce this effect. Patients often present with a lesion with a bloody crust sitting in the crater at the centre of the BCC.

## DIAGNOSIS

Diagnosis is based on careful ophthalmic history taking and inspection of the lesion. The only sure way of confirming diagnosis is by histological analysis. Depending on the site of the lesion a wedge biopsy will be performed, and should include the

centre of the lesion, the edge and a sample of normal skin; this biopsy is sometimes known as a Panttone biopsy. The wedge biopsy confirms the diagnosis but preserves most of the lesion *in situ* and the surrounding skin, for more accurate excision and improved cosmetic outcome.

If the lesion is positioned in such a place, with adequate spare skin, the lesion can be removed in its entirety and the wound sutured. Most BCCs require no further treatment; however, some patients do need adjunctive treatment such as radiotherapy.

All suspicious lid lesions that demonstrate irregular growth, changes in colour or appearance, or purulent or bloody discharge, should be biopsied to rule out cancer (Sowka et al. 2007).

### CAUSES

Basal cell carcinomas arise in hair-bearing skin, particularly in the periorbital region. Incidence is more pronounced in the lower lid, medial canthus, upper lid and lateral canthus (Tasman and Jaeger 2002).

Aggravating contributory factors include age, smoking and outdoor occupations. There is no recognised gender difference in incidence. Skin type is also a significant factor with a skin type that 'always burns' being more vulnerable.

### TREATMENTS

The vast majority of BCCs can be removed in their entirety during a minor surgical list. Some larger BCCs in some lid areas, particularly medially and in young, tight-skinned patients, should be removed using Mohs' procedure, which involves removing minute areas of the lesion, continually sending sections to histopathology for confirmation of malignancy. This procedure continues until 'clear tissue' is returned and ensures that only the minimum amount of tissue is removed, preserving the maximum amount of normal tissue to ensure wound reconstruction and closure.

### LIKELY PROGNOSIS

Prognosis depends upon the duration of the BCC and histopathological data; however, BCCs rarely metastasise (Royal

College of Ophthalmologists: [www.rcophth.ac.uk](http://www.rcophth.ac.uk)). If the patient requires referral to the oncology services, careful liaison should be ensured between the services to promote a holistic and seamless approach to care and management.

#### FOLLOW-UP CARE

Follow-up care depends on the treatment options. All lesions are removed surgically and standard postoperative wound care should be managed. Long-term postoperative advice should include gentle massage and moisturisation of the wound. Patients should be advised that there is a greater chance of developing a second and third lesion after having already developed one. Careful inspection of the face during personal hygiene time should be advised. Support of the patient should be considered at the time of diagnosis and discharge. If not adequately supported, patients could go through unreasonable anxiety with a cancer diagnosis and lifelong observation for a recurrence!

#### PATIENT EDUCATION

Sunblock, especially for the face, should be advised, together with regular inspection of the facial skin for recurrence of a BCC.

Patients must be told that, although a BCC requires prompt treatment, BCCs rarely metastasise and are the most common of skin cancers in the UK. Incidence is approximately 144 per million of the UK population (Wong et al. 2003).

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Blepharitis is not merely a chronic inflammatory condition affecting the eyelids, because the term 'blepharitis' encompasses a range of inflammatory eyelid conditions. It can be divided into anterior types affecting principally the eyelash follicles and posterior types affecting the meibomian glands. Patients frequently present with a combination of the two. It is often associated with ophthalmic disease such as conjunctivitis, chalazion, trichiasis and dry eye, as well as keratitis.

Blepharitis may be associated with acne rosacea and atopic dermatitis. In such cases the underlying cause should be addressed (Shah et al. 1999).

## TREATMENT

It may be symptomatic or asymptomatic and, in either case, treatment is recommended (McQueen 2006).

Management of blepharitis is focused around lid hygiene.

- A solution of boiled, cooled tap water and baby shampoo (1 teaspoon to a mug), and good quality cotton buds are required.
- Advise the patient to scrub the lid margins using a new cotton bud for each eye, twice a day for 2 weeks, followed by the same regimen on alternate days for 2 weeks. To prevent further flare-up, it is advisable to perform lid hygiene once a week.
- An alternative to the cotton bud is a clean facecloth wrapped around a finger. A clean flannel should be used each time.
- Alternative solutions include plain cooled boiled water, which is good where there is sensitivity to other solutions, saline and bicarbonate of soda. The last is efficacious in meibomitis



**Figure 2.1** Blepharitis.

and where symptoms include burning and itchy sensation (Shah et al. 1999; Shaw 2002; Paranjpe and Foulks 2003; McQueen 2006).

- Where there are shower facilities, the patient should be advised to scrub the eyelids with a clean flannel while showering.

Paranjpe and Foulks (2003) recommend a warm compress and eyelid massage: a clean facecloth soaked in warm water is applied to the closed lids for 2 minutes at a time, followed by massage. The combined action softens the oily secretions and serves to unblock ducts.

In severe cases, as well as this hygiene regimen, oral and topical antibiotics are recommended (Shah et al. 1999).

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