Myopia: A Review and Summary

Part 4: Commercial Approaches, Communication and the Future for Myopia

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Introduction

In parts 1 and 2 of this series, we looked at both the epidemiology and pathophysiology of myopia and its secondary complications. In part 3, we examined various therapies.

In this article, we will explore how practices can introduce MM (myopia management) and maximise their revenues from it in ways that also enhance the patient experience and increase the clinical enjoyment of the job.
Furthermore, we will briefly look at the therapies and screening protocols for the long-term secondary effects of myopia and high myopia.

One major issue still facing optometrists in the U.K., and elsewhere is the lack of public knowledge and understanding of myopia. Many people don't know that we no longer consider myopia as simply a refractive error that needs some form of correction by spectacles, contact lenses or refractive surgery.
Lay people consider myopia short-sightedness and nothing more.

There appears to be a lack of communication to public health bodies, educational bodies and to government in general of the real and current risks that our modern lifestyles are having on our vision. The long-term potential for sight loss from myopic progression is notable and increasing with each generation. Optometrists are some of the best placed professionals capable of helping to minimise the risks by using effective therapies and offering good advice.
However, the message is not getting to enough people as rapidly as perhaps it should.

It's clear that communicating the issue could be improved in many ways from many quarters, but Optometry could do more too.

Commencing Myopia Management in your Practice

Looking now at how you can introduce what you've learnt in parts 1-3, let's consider the things you'll need to have or will need to implement to best serve your patient's needs. I'll look this from two angles – the 'perfect' scenario where money, space, and time are no object and then I'll look at the 'realistic' scenario, where we must take money, space, and time into serious consideration.

I think it's safe to assume that most practices will have a minimum level of existing equipment and routine practices place that you can use in myopia management. It is feasible for most practices to conduct MM now and provide many of the available therapies. There is no detriment in doing this, perhaps, but there is an element of

guesswork involved, which is certainly not ideal. Furthermore, it may be much harder to convince parents that a real issue exists, that it is quite serious and that your therapies are having a true impact on the condition.

Myopia Management (MM) is a 'cradle to grave' undertaking and duty of care for eye care professionals, where controlling axial length (AL) and screening for secondary complications is essential. Not only must we screen for and offer therapies for childhood myopia to reduce the adult AL, but we must also screen more closely for the complications that we know these patients are at a higher risk of. We must also do our utmost to ensure that we check their close relatives are also screened.

The table below looks at what you absolutely MUST have to conduct myopia management in the first place and then also what would be ideal and what might be 'nice to have'.

MUST have	Ideal	Nice to have	Future Options
Refraction and acuities	Optical biometry	Aberrometry	Handheld biometer
Keratometry	Topography	Choroidal thickness	Dopamine therapy
BV tests	OCT (anterior)	Lens thickness	Scleral buckle?
Vergence tests	OCT (posterior)	Open field refraction	More surgical options?
Slit lamp	Wide field imaging	Peripheral refraction	
Fundoscopy	DED assessments	Vivior camera	
AC/A fusional reserves		RLRL therapy	
Cycloplegic drops		LDA and other drugs	
Questionnaires		Amblyopia therapy	
History and Symptoms			
Family history			

According to many studies and what many key opinion leaders say is that axial length measurement should be the single most important measurement in MM. There are several reasons for this, but ultimately, it's axial elongation that causes the damage, so measuring, controlling, and monitoring this seems logically to be of paramount importance.

There are several existing devices available on the market which incorporate AL measurements and some other measurements and software. These include:

- The Oculus Myopia Master
- The Topcon Myah
- The Haag-Streit Lenstar Myopia
- The Essilor Myopia 700 (new release)

I've summarised the main features and functions of the first three devices that were commercially available. There will be many other entering the market, I'm sure.

	Oculus Myopia Master	Topcon Myah	Haag-Streit Lenstar Myopia
Axial Length	Yes	Yes	Yes
Auto-refraction	Yes	No	No
Keratometry	Yes	Yes	Yes
Topography	No	Yes	No
Limited Dry Eye Assessment	No	Yes	No
Growth curves	Yes	No	Yes, no prediction of Rx
Future Estimation of adult myopia	Yes	No	No
Patient education with software	Yes	No	No
Presenting progression data curves	Yes	If manually input Rx	If manually input Rx

I will take this opportunity to mention an exciting new device that will soon be available on the market, which will make adding AL measurements to your routine practice much easier. The Occuity AX-1 is a handheld optical biometer with alignment assistance. It is lightweight, portable, and cost effective.

I'll also add that there are some excellent multi-function OCT's now available, some of which include lots of functions like AL, topography, and OCT-A even.

Examples include:

- Optopol Revo OCTs
- Huvitz OCTs
- Cylite HP OCT

The Pentacam AXL Wave offers state of the art topography and tomography, AL, wavefront aberrometry and even scleral lens fitting. However, this is generally considered a gold standard device in ophthalmology and carries the price tag.

The Myopia Management Assessment

Optometrists are generally already excellent communicators and work well with children and their parents. However, taking the time to improve the ways in which you warn parents of the risks of myopia can make a big difference to how they respond.

It's good to avoid 'scare tactics' or using fear to promote a service or product. At the same time, it's also important not to downplay the importance of MM or the risks of ignoring the condition. This is a fine balance and needs practice.

One good way to prepare parents for discussions around their kids long-term eye care is use of your website, in practice leaflets and posters and information in recall letters / emails / texts and social media posts.

Directing parents to specific websites can also be useful, such as MyKidsVision, MyopiaFocus.org and others too.

Questionnaires add value to the discussions you have, but also provide essential information that you need to provide projections for future myopic progressions without treatment. Your intervention plans can then aim to 'flatten the curve' and hopefully achieve a much lower (less minus) SER (spherical equivalent refraction).

There are many questions that you need to consider, so it's worth looking again at all the main risk factors. See the table below.

Lifestyle	Genetic / Familial	Other
Lack of outdoor time (in early childhood in particular)	Ethnicity	Younger age at diagnosis
Excessive prolonged accommodation - near work education, homework, etc.	Familial myopia (one or both parents, etc)	Pollution
Use of smart phones, tablets and PC / laptop - digital devices	Gender	Season of birth
Poor lighting controls prior to sleep - circadian rhythms		Binocular vision anomalies
Poor sleep patterns		
Diet		
Covid lockdown		
Poor lighting levels		

A through questionnaire might include the following questions to glean the most information, whilst at the same time, informing and educating parents that a real problem exists and that a professional approach towards it is being considered.

Below is one example of what information might be good to know. Of course, it might not look like this in a questionnaire given to parents, but this is the type of information you're trying to understand.

Please select one answer for each question			
Are the patient's parents myopic?	No	One	Both
Are the patient's parents high myopes? (>6D ESP)	No	One	Both
Age at which patient first diagnosed with myopia?	<5 yrs	5-10 yrs	> 10 yrs
First myopia Rx value (ESP)?	<1D	1-3D	>3D
Hours per day spent outdoors on average?	<2 hrs	2-4 hrs	>4 hrs
Hours per day spent reading / studying on average?	<2 hrs	2-4 hrs	>4 hrs
Hours per day spent on phone / tablet on average?	<2 hrs	2-4 hrs	>4 hrs
How often is distance vision blurred after close work?	Never	Rarely	Often
Does the patient use?	Glasses	C.L's	Ortho-K
How often are these used?	Rarely	Often	All day
Does the patient have any other eye conditions?	Yes	No	Not sure
Please list: ……			
Patient's ethnicity?			
Mother's Ethnicity?			
Father's Ethnicity?			
Maternal Grandparents with myopia?	No	One	Both
Paternal Grandparents with myopia?	No	One	Both
Does the patient have any myopic siblings?	Yes		No
Does the patient live in an urban setting?	Yes		No
Does the patient take any Vitamin D supplementation?	Yes		No
Does the patient have any underlying health issues?	Yes	No	Not sure
Please list: ……			
Other information:			

Depending on the child's age, it will also be good to know if they use contact lenses, what sports they play (if any), what their confidence levels are like, what the lighting is like at home and at school, what light they are routinely exposed to and when, etc.

Now, it's also important to know what to do with all this data. Just noting it down on a record isn't going to make any difference to your decisions clinically. You need to show to the parents/patient what all this data means in their case.

Pictorial methods of imparting information tend to help and often get key points across more effectively than mere words.

The above is an example of the BHVI (Brien Holden Vision Institute) myopia prediction model. It is very self-explanatory and provides important information for practitioners and their patients (and the patient's parents). There are some APPs available which provide myopia calculators too.

The Oculus Myopia Master has these calculators and predictors built in, with questionnaires too. Other devices are adding this over time too.

It's important in the MM initial assessment and in routine follow ups that we show predictions and then hopefully reports showing a slowing of predicted axial elongation. Showing a refraction that is not increasing as fast is an alternative of course but do bear in mind **the refraction doesn't do the damage, it's the axial length.**
If Ortho-K is being used as a therapy, AL is the only way to know if it is being effective.

Your routine assessment should make greater use of near vision assessments and binocular vision function assessments too. This might include:

- AC/A ratio and Accommodative lag / lead
- Fusional vergence reserves
- NPC and amplitude of Accommodation
- Heterophorias
- Fixation disparities

Of course, our initial refraction should be cycloplegic and follow up should really be cyclo too. Use of an auto-refractor is acceptable according to the College of Optometrists, but perhaps really cyclo AR can be used in follow up appointments but not for an initial or annual refraction check.

Paperwork

When undertaking myopia management, it's clear that you are intervening in the long-term visual prognosis of a child or young adult. Don't take this lightly. Ensure that you get full permissions to undertake MM from the child's parent or legal guardian and that the patient is happy to proceed.

Legal documents and disclaimers would be worth having and getting them signed with copies is essential in my opinion. This protects you and your patients from potential issues with therapies that we don't yet fully understand. It's highly unlikely that the use of Ortho-K or dual focus soft contact lenses, or even DIMS/HALT spectacles are going to lead to any long-term damage for patients (outside misuse of contact lenses of course). However, being prepared avoids any issues and should hopefully reinforce your professional image and the importance of what it is you're doing.

Questionnaires may be 'paper', or they may be electronic, but this is till paperwork, so remember if the patient fills anything out, whether using a pen or tablet, keep records.

If the patient/parent doesn't want to engage in MM or, unfortunately, cannot afford any of the therapies you provide, it's a good idea to get them to sign a document that states you have advised them fully about the existence of myopia, its risks, and the potential therapies. They need to sign that, despite this information, they have made the decision to not proceed with MM in your practice and that they accept the potential risks linked to avoiding MM.

What if clinicians don't want to provide MM in practice? I don't think it's an option anymore for clinicians to say they're not aware that myopia is a problem or that there isn't enough evidence that the issue is a real threat. The College of Optometrists guidance is clear and convincing in this regard. However, you are not legally obliged to carry out myopia management (MM) of course. You will need to get patients (or their parents/guardians) to sign some form of disclaimer that you have advised them of the risks and that you have advised them to seek assistance elsewhere.

If you don't warn patients/parents about the myopia 'epidemic' and the associated likely causes, risks and prognosis and you also don't ask them to sign any disclaimers, etc, the following scenario may be a possibility in time.

Imagine a situation where an optometrist conducts an eye examination on a young child with their parents present. The parents are both myopes, just below the 'High Myopia' level (≤-5.00DS WHO 2015 or ≤-6.00DS according to many other sources). The child is, say four years old and their refraction is -1.50DS. The optometrist does their usual routine and prescribes spectacles. No mention is made about myopia and the facts now known about long term risks, etc. No record of this potential risk is made either.

The child collects their spectacles, and the same process happens again and again every year until the child is now a 25-year-old adult, with a -8.00DS prescription and a very high risk of long-term complications for their ocular health and vision. They are now aware, however, that not only is myopia known about at this time (i.e., when they're 25) but it was known about in considerable detail when they had their very first eye examination. They, along with many other myopes have responded to a radio advert by WhereTheresAWill.com solicitors about a 'class action' against the optician's sector and your practice is now being investigated for not following your duty of care.

This is not scaremongering. This is, I think, a valid consideration now that myopia is 'out in the open'. It's a major cause of vision loss, rather like AMD, glaucoma, and cataract for example. We always try to detect these conditions, offer advice to the patient, and refer where appropriate. Where we can 'treat', we'd like very much to do that too. Firstly, because it genuinely helps the patient and is part and parcel of what patient care is all about, but also secondly, it's how an optician's practice makes more money. We do it with DED (dry eye disease), we charge for OCT scans for example.

Remember the WCO 'three Ms', Mitigation, Measurement and Management.

Simply correcting the refractive error is no longer sufficient, and myopia management should not be optional, and rather be an obligation of optometrists.

Optometrists incorporate myopia management standard of care into their practice

Justification and Business Strategy for Myopia Management

If you're going to introduce myopia management, it's important that you can justify doing it, not only from a business perspective, but also in your head as a clinician and as a person.

- Myopia management must be rewarding financially, but also spiritually, clinically, and professionally. The greatest reward must be for your patients and the feeling it gives you to help them.
- Patients will likely remain loyal and will need glasses and contact lenses for many years to come.
- We must also monitor those with high myopia or at risk of pathologic myopia. It is our duty of care.

Give yourself a business plan and look at the following options:

1. Acquire Equipment to undertake myopia management
2. Decide on therapies to offer – think practicality, evidence, availability...
3. Set your protocols for screening and commencing treatment – evidence base
4. Training and competency
5. Practice and Perfect your 'art'
6. Consider your pricing structure and diary
7. Tailor your H&S and eye examination for specialised myopia appointments
8. Consider aftercare and follow up structure
9. Design a full marketing strategy
10. Produce a range of reporting and monitoring – engage PX and parents

Acquire Equipment

We've already looked at the minimum equipment needed to undertake Myopia Management (MM) as well as the ideal extra tests and devices. Remember that you don't have to get it all at once, nor do you have to buy it outright and upfront. Financing is an option, but obviously it's not everyone for many reasons including cultural and VAT issues, for example.
Rental is a less commonly used option which I feel is a shame. Rental avoids interest bearing, so it doesn't cause issues with some cultures. Just as important, VAT on rentals is considered a monthly cost. Rental is not considered a single capital expense that might take your business over VAT de minimis levels, meaning you can still achieve maximum VAT reclaim efficiency. Rental also means you can change your equipment more frequently. Some will argue that you don't ever own the equipment and you won't have an asset for your investment, but monthly rental costs are lower and if you plan your charges correctly, the increased ROI (return on investment) could be put towards buying a device outright eventually.

Decide on Therapies to Offer

You don’t have to be the most technically or clinically accomplished optometrist, contact lens fitter or dispensing optician to offer MM therapies. However, it is your duty of care to ensure that you are competent and capable (and qualified) to provide the therapies that you do decide you will offer.

The most obvious and simple options to offer in practice are Myopia Management Spectacles, like DIMS, HALT and DOT type lenses, from Hoya, Essilor, SightGlass Vision and others. Remember to familiarise yourself fully with the products and undertake any associated training provided by such manufacturers.

Some practitioners will be less comfortable in offering contact lenses to children, particularly young kids. However, there is plenty of evidence that shows children are more compliant than many adults when it comes to contact lens wear. This is primarily because of the involvement of parents in the day-to-day care in such circumstances. Only when these patients reach the dreaded teenage years does this perhaps become a less safe option!

I’d say this is another reason that Ortho-K is so beneficial. Even less hygienic teenagers (most likely boys) will have fewer major issues with the insertion and wearing of overnight GP lenses. It’s the cleaning and aftercare that may be more of an issue and this is where good communication, especially with the parents is of great value. Generally, however, it appears that most patients, of any age, do take the necessary precautions and adhere to best practice most of the time.

One issue with Ortho-K is if they must cease wearing for a period. It will take time for their myopia prescription to return (and there is a rebound risk as well). Ideally, the period without the lenses will be minimal and won’t be an issue. However, if the period without lenses must be protracted, you should conduct frequent refractions and update the spectacles that are prescribed regularly (perhaps at minimal cost) to both correct any developing post Ortho-K refraction and hopefully also provide some form of peripheral myopic defocus to continue to slow the rate of globe elongation.

Providing low dose Atropine (LDA) is still controversial in the U.K., even if you are an IP qualified optometrist. Until there is a readily available CE / UKCA acknowledged drop or drug that can be administered, it is a subject that causes consternation and considerable debate.

Set your protocols

This is where communication is important. When do you start? Should you discuss risks and other factors with ALL myopic patients, even those much older? How far do you go? It’s an interesting discussion. Personally, I think it’s worth discussing with myopic patients if they have children or intend to. Beyond that, you may even discuss grandchildren. Perhaps H+S needs some revision for these purposes. Establish if those children need screening perhaps. Obviously, where any child appears for an eye examination, some element of screening might be prudent. From there, you can advise if you suggest a full MM work up perhaps.

It might be best to consider all children at risk of myopia or, to term it better, axial elongation. Very young children will almost always be hyperopic, but that doesn't mean their axial length isn't longer than average or that the globe (eyeball) isn't growing at an excessive rate.

i. Combine clinical and non-clinical data and compare against risk tables
ii. Establish a baseline and review after first follow up to understand progression risks fully

Training and competency

The College guidelines are clear in that you must be competent and confident in your skills to undertake MM. There are some post graduate myopia courses now available, and it is well worth considering joining one of these.
However, there is also a huge amount of training and educational material available which you can use to develop your knowledge and skills too.

Practice and Perfect your 'art'

You're not going to be an expert or veteran myopia specialist overnight, but to reach that level, you'll need to have a process and a strategy in place.
Review your cases and patients regularly in terms of clinical governance. Peer review within a practice or between clinicians could prove very beneficial at learning and developing ways to improve the therapies and assessments that you offer.

Consider your pricing structure and diary

This is a difficult subject for me. Currently, the GOS provision for children's eye care is simply not fit for purpose. In relation to MM, it is, frankly, derisory. How are parents who have low incomes really going to afford myopia therapies for their children?

I firmly believe there is a considerable risk that family income is going to become one of the biggest risk factors for myopia progression.

However, you're not only clinicians, you're also businesspeople. Whether or not you own a practice, your job doesn't just involve eye examinations. It is a professional duty to offer the correct options for all your patients. It is also professional to make sure your practice remains profitable, otherwise you won't be able to maintain the service that provides quality care to your patients. Essentially, part of your duty of care is to make money!

You therefore need to understand the cost of your time and that will need to incorporate all your other costs. You will likely already be experts at this, but consider:

- Cost of sales
- Staff costs
- Rent, rates and utility bills
- Other business overheads
- The cost of new MM equipment

- The added time costs for initial assessments and follow ups
- Other hidden costs

You will likely have a good idea of what these costs will be and what you currently charge for your time and products. Some practices no longer even provide GOS services as the fees are so low. Other practices charge fair amounts on top of any GOS sight test and appliance vouchers. Direct debit schemes are a good idea and help patients/parents spread the annual cost of MM. It also improves cashflow in a business, which is very important of course. You're already likely doing this with disposable contact lens sales.

Tailor your H&S and eye examination for specialised myopia appointments

We've already covered this in detail earlier, but it's worth recapping that your overall MM eye examination, whether it be the initial assessment or follow up visits it going to be longer and more complex that other 'standard' eye examinations.

One thing to consider further here, however, is the other affects that the use of tablets, smartphones and other concentrated near visual tasks have on the eyes. DED (dry eye disease) is occurring in younger people due to lifestyles, including reduced blink rates. This can lead to the 'vicious circle' of ocular surface disease and DED.

Assessing the tear film and ocular surface may well become another key part of any 'myopia workup'. This is especially true if you're going to fit contact lenses of course.

Consider aftercare and follow up structure

Some sources, including Moorfield's eye hospital suggest that follow up visits should be every six months. Any more frequent than this may be considered ineffective. However, this is something you will need to decide upon, and it may well be a 'case by case' scenario, rather than a routine pre-set structure.

If, for example, one of your young patients started with myopia at an early age, is of Korean ethnicity with both parents wearing high myopic prescriptions, you might want to conduct follow ups every three or four months perhaps.

Remember to include the costs of aftercare in your business plan and charging structure and you may need to set aside certain days or times where this kind of appointment takes place. Many practices offer specific time slots for children's eye examinations already. Altering this structure slightly may be worthwhile.
Do all follow up visits have to include all the examinations? Probably not. This may depend on the devices you have and the structure of your practice.
It could be that longer term follow up visits could sometimes just involve the patient having optical biometry, some history taking and an assessment of visual acuity and refraction. There are devices that can do most of this for you and then a short consultation to review the results and the patient outcomes may be all that is required in between more lengthy consultations every six to twelve months, for example.

Design a full marketing strategy

Again, many readers will be very used to promoting their practice, products, and services. Adding new revenue streams to your practice might include myopia management, but you may already be marketing and charging for DED clinics, OCT scans, etc.

However, some practices or clinicians may be less prepared or used to doing this kind of thing. Some websites offer resources to help promote myopia management, such as myopiafocus.org, myopiaprofile and GMAC, for example.

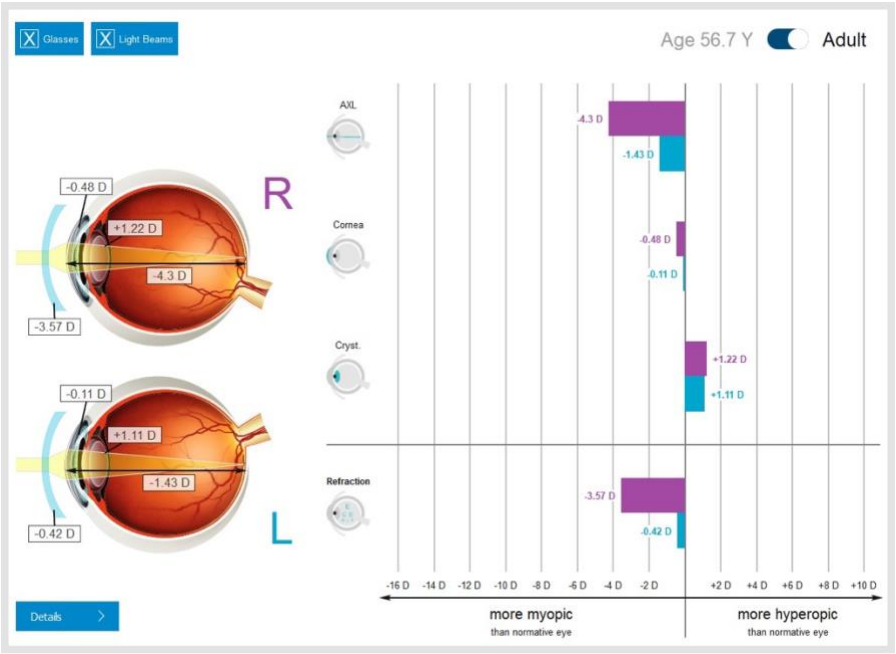
The things to consider might include:

- Adding MM information to your website
- Starting or increasing social media posts highlighting myopia
- Adding MM letters, emails, and texts to recall communications
- Sending out generic communications to older patients to ask about children in the family and mention the myopia issues
- In practice posters, flyers, leaflets, product brochures and product placement
- Local press releases and advertorials
- What are your competitors and other clinicians doing?
- Don’t forget to mention myopia in every consultation you do where it might lead to helping a family member or friend of the patient in front of you

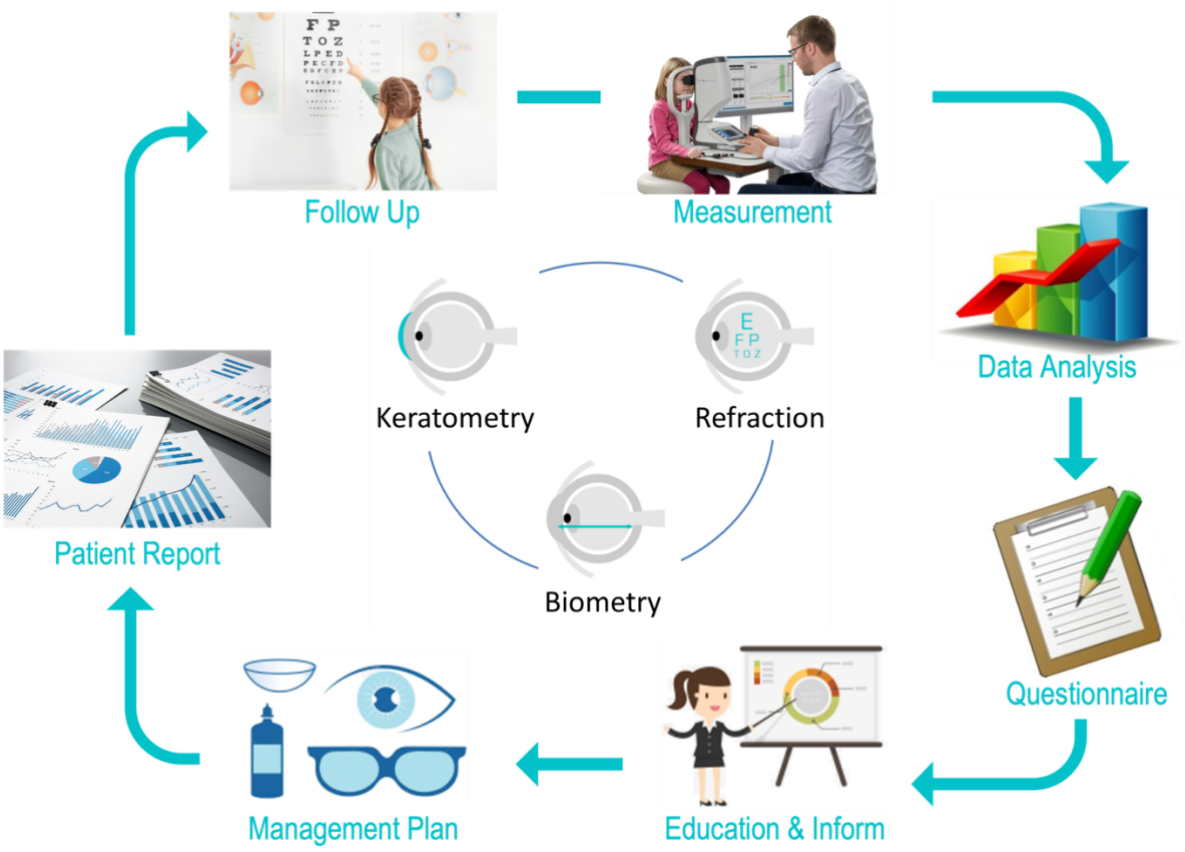
Produce a range of reporting and monitoring – engage PX and parents

For me, this is of primary importance. This is what your patients/parents want to know – how successful has the therapy been and can we do more?
There are some APPS and websites that can assist with this, including the BHVI website online calculator. Some devices, such as the Oculus Myopia Master, have these questionnaires, predictors and reports built in. This makes the monitoring and reporting easier to do, more accurate and more appealing visually to patients.

Here is an example of the BHVI prediction chart, also showing how therapy has slowed the rate of axial elongation in both eyes. The therapy has ‘flattened the curve’ and reduced the patient’s long-term risks.



The new GRAS report on the Myopia Master helps clinicians and patients/parents to fully understand how much the refraction is axial or refractive and what real risks are indicated, taking the axial length into account as the cause of comorbidities.



Summary of a standard of care for providing effective myopia management and follow up

Barriers to Myopia Management

- Financial
- Education and training
- Public education and awareness
- Practice issues
- Other

There are barriers that may be real or imagined that might either prevent clinicians from offering and providing MM, or prevent patients / parents from engaging and utilising MM.

Financial

- Patient / Parent affordability may be limited
- ROI (return on investment) may be deemed too low
- GOS fees won't cover it. Is there more government money?
- Equipment up-front costs can be high. Rental?
- VAT de minimis can be an issue with cap-ex. Rental avoids this.

It's feasible that a two-tier system could operate where poorer children are at higher risk of pathologic myopia then their wealthier peers, through no fault of their own.

Return on investment may not always be immediate and may also be hard to fully measure; remember the longer-term practice growth too.

Education and training

- Myopia Management is a recent development in optometry, so it may be daunting to many
- Recently qualified clinicians will have less experience of practice and limited training on myopia
- Little post graduate education available? Prof Cert Myopia?
- Some still feel the evidence is not strong enough - not enough consensus on cause and therapy – I would argue this is now unfounded
- Some clinicians don't feel confident with some of the therapies

It's clear that university optometry degree courses already have 'too much' to cover (especially with the uptake of OCTs into practices). DED and Myopia Management are all further things to learn beyond graduation day.

As mentioned, there are some post graduate courses available, but there are also some good CPD options and websites that offer useful advice and guidance.

Public education and awareness

- Patients and Parents often not aware of the risks / pandemic
- Lack of press coverage. Lack of clarity and scientific substance in social media
- No obvious reporting by NHS/public health to schools, local authorities, etc
- Not enough attempts to engage with children at their level
- Lack of understanding that treatment may be possible
- Many parents think ‘What’s the point?’

Unless you make it very clear that this is not a ‘cure’, many parents / patients may fail to see the benefits. It’s clear to get across the message about longer-term risks of higher myopia compared to lower, more controlled levels later in life.

I don’t feel that the general population still have any real understanding that myopia is no longer just considered ‘short-sightedness’ and simply requires correction by spectacles, contact lenses or refractive surgery.

There needs to be local, national, and global campaigns to educate the populace about this problem. I don’t want to sound like I’m scare mongering, but ultimately, there is too much evidence to deny the increased risk to the long-term ocular health of millions and even billions of people around the World.

As clinicians, we can do our bit to help of course. Each parent or patient we inform is a step in the right direction. Every practice poster seen by passers by helps.

Myopiafocus.org aims to educate and inform the public, as do other websites like MyKidsVision, GMAC and others too.

Myopiafocus has a petition which aims to try and get the U.K. government to listen and do something about the provision of children’s eye care with reference to myopia. Too little is being done to prepare for this and, like so many other past examples, politicians appear to leave it for the next governments to deal with. It would be good if you could spare the time to visit the website and use the link to sign the petition (shameless plug finished).

Practice issues

- Some clinicians don’t want to get involved - don’t think there is a demand, don’t feel confident
- Atropine 0.01% for example is not licenced in the UK
- Not enough time in busy practices perhaps
- Lack of necessary devices; lack of space
- Average income per appointment / patient - will it be better to see better off presbyopes?
- Continuity of care - Px’s move or don’t return. Locums cannot offer the same continuity perhaps

Until the revenues for myopia management are high enough, or there are enough regular fee-paying patients (GOS only allows for a 6 month recall for myopia), there may be a lot of reticence from clinicians to potentially reduce average revenues per appointment and per clinic.
Practices may not have the room, or the free clinic time and space to put on extra devoted myopia management clinics. GOS is clearly one major stumbling block here and could, in all honesty, pose a true and significant public health risk for future generations.

Other Barriers

- Limited patient database - demographics. More older patients. Urban versus rural even.
- Practices may find other devices / services more profitable - OCT, DED, etc
- Many practices have already invested in capital equipment recently like OCT
- Morally difficult to charge children for essential eye care - GOS won't cover the cost

Conclusion and summary

This article and the preceding three others have looked in some depth at the epidemiology, pathophysiology, secondary complications, therapies for, business strategies for, and communication of myopia and progressive myopia.

There is no longer any doubt that a real problem exists with our modern lifestyles and the effects they are having on myopia progression (and even on predisposition to myopic progression). We can do something about it. The therapies and advice we can offer have been proven to significantly reduce the long-term ocular health complications of most of our at-risk patients.

We can make myopia management (MM) a profitable and professionally fulfilling major aspect of our day-to-day practice. There are devices which can aid the speed, efficiency, and accuracy of MM. There are methods that can improve the promotion of MM and improve public education.

It is apparent that there needs to be a coherent and a multiple sector/cross sector campaign to inform the public about myopia and its reported risks, screen for myopia effectively with no 'postcode lotteries' on quality of care and provision and it's evident that the funding of MM needs to be looked at as a 'ticking timebomb' that could significantly disadvantage people from lower income families.

Optometry is best place, in my opinion, to make the biggest impact to improving the provision of MM and patient outcomes.

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