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External Review of Eye Care Services in Wales

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Introduction

The review of eye services in Wales has been conducted by The Royal College of Ophthalmologists. Its author, Andrew Pyott, is a Consultant Ophthalmologist in NHS Highland and has extensive experience in providing a service to the population of the Highlands and Islands of Scotland. He has also been involved since its inauguration with Eye Health Scotland which has been in existence for 15 years and is analogous to the newly formed Welsh sub-committee of The Royal College of Ophthalmologists.

Prior to working in Scotland as a consultant, he established an eye service and training programme for a substantial part of the Kingdom of Cambodia (1996-2000). Last year, immediately prior to Covid restrictions, he returned to the country to carry out an NGO funded evaluation of current training programmes. He has also been employed in the past by the Development Agency CBM International, (for whom he was a previous employee) in reviewing eye care programmes in many countries in Asia, but most specifically in Indonesia where he has had close contact for the last 15 years. In this regard he is used to making fairly rapid assessments of National/Regional eye services. He also served for seven years as the regional representative for the East of Scotland on the Royal College of Ophthalmologist's Council.

The purpose of this document is

- To highlight areas of best practice and to encourage such exemplars to be spread throughout the country.

- To provide an analysis of where there are inefficiencies in the system with the hope that reforms may bring about more efficient use of resources: financial, manpower and infrastructure.

Background

Throughout the United Kingdom ophthalmic services are under considerable pressure. The Way Forward[1] document produced by the Royal College of Ophthalmologists in 2017 indicates

- Cataract surgery alone represents 6% of all surgery carried out in the UK, with an expected growth within 10 years of 25%.
- 35% of patients over the age of 65 have visually significant cataract.
- 10% of all out-patient appointments within the UK (9 million appointments) are for eye clinics, and the demand on our services is expected to increase by 40% over the next 20 years.

Overall, the economic burden of sight loss in the country was estimated to be £28 billion.

- In 2019 UK wide there was a shortfall of 230 consultants, and 67% of eye units were using locums to fill 127 vacant posts.
- 85% of units depended on waiting list initiatives in out-of-hours sessions to try and meet their demand.
- 22 patients a month were losing vision from hospital-initiated system delays.

All of these statistics pre-date the Covid pandemic, during which things have grown considerably worse.

In August 2021 Public Health England published a Vision Atlas[2] which details the scale of the problem facing that country. This can also be seen in the recently published Sensory health (eye care and hearing statistics): April 2019 to March 2021 for Wales[3]

The report highlights a number of statistics showing the increasing demand on ophthalmology over time. Importantly it also states 'The rising outpatient activity has posed significant and increasing pressure on capacity for timely service provision, resulting in delays for follow-up appointments and increasing the risk of harm and adverse outcomes for patients.'

[1] https://www.rcophth.ac.uk/standards-publications-research/the-way-forward/

[2] https://fingertips.phe.org.uk/profile/atlas-of-variation

[3] Sensory health (eye care and hearing statistics): April 2019 to March 2021 | GOV.WALES

Methodology

This report is based on a series of over 20 interviews that took place starting in April 2021. Site visits were made at the beginning of June, with visits to the southern units between the 8th and the 11th of June, and in the north between the 14th and 15th.

Using a combination of preparatory interviews via on-line platforms, and site visits, as wide a range of personnel as possible were interviewed. With one or two notable exceptions, it was extremely difficult to gain access to firm data, but even accepting this, it was clear that in general, eye services in the country are under considerable strain.

Wales is not alone in this regard, and for the first time ever, the NHS within England has declared that (along with cardiac and musculoskeletal services), eye care is to receive priority status.

In Scotland there are concerns that cataract surgery lists have only on average 5.6 patients per session, whereas in parts of Wales numbers as low as an average of 3.2 were being quoted.

Statistics:

- The number of referrals for first outpatient appointments for ophthalmology in Wales had remained broadly stable at just over 100,000 referrals per year from 2015-16.[4]

- In 2019-20, there were over 310,000 (314,054) attendances to ophthalmology outpatient appointments in Welsh hospitals, however this fell to less than 190,000 (186,728) in 2020-21 (a reduction of 59%).[4]

- In contrast England has seen a 37.6% increase in all vision outpatient attendance over the last decade

- The rate of admission to hospital in England for all cataract surgery in people aged 65 years and over increased by 16% from 2014/15 to 2019/20.

- In 2019/20, 3.4 million people attended a vision outpatient appointment in England. The over 65 age group made up 51% of all vision outpatients, this age group makes up 17% of the population.

- In 2020-21, just over 60,000 (63,392) ophthalmology referrals were made in Wales for a first outpatient appointment, a 39.2% decrease from 2019-20, when just over 100,000 (104,233) ophthalmology referrals were made. The majority of referrals are from non-GPs with 81.4% of all referrals from non GPs in 2020-21, an increase from 78.4% in 2019-20.

- There were almost 20,000 (19,966) cataract procedures in Wales in 2018/19[5], this is an increase from 18,994 from the previous year

- In 2020 there were 6.5 million all vision outpatient attendances in England, a 29% fall from 2019 with first attendances reducing to 1.4 million, a 38% reduction.

- Cataract surgery decreased by over 40% in England in the year 2020 (227,000) compared to with 2019 (392,000).

- In 2020-21, the number of attendances to ophthalmology outpatient appointments in Welsh hospitals fell to just under 190,000 (186,728), from close to 315,000 (314,054) attendances in 2019-20. Of these, just over 40,000 (42,752) were new appointments and just over 140,000 (143,976) were follow-up appointments. This compares to nearly 90,000 (86,080) were new appointments and nearly 230,000 (227,974) were follow-up appointments in 2019-20.

[4] *Sensory health (eye care and hearing statistics): April 2019 to March 2021 | GOV.WALES*

[5] *Patient Episode Database for Wales (PEDW),*

The shortfall is probably even more acute in some parts of Wales, where despite numerous attempts, posts have remained unfilled. Locums, waiting list initiatives, and other short-term solutions often compound rather than solve problems.

Workforce shortages

Quoting data from RCOphth[6] and others, the Atlas illustrates the 'shortage of consultant and specialty training posts required to meet the increasing demand for specialist ophthalmic care'.

- The Royal College of Ophthalmologists advises that there should be 3.0 and 3.5 Consultant Ophthalmologists per 100 000 population. In England the reality varies between the best case of 3.1 in London, and 1.8 in the East of England. For Wales the number is 1.8.
- With the notable exception of a long-term locum in North Wales who was responsible for considerable innovations, locums tend not to have any desire for "ownership" for the service they are assisting. Frequently they will achieve the bare minimum, but at substantial cost to the organisation. With a tendency to create unnecessary and shorter review periods, perversely waiting lists can often increase.
- RCOphth estimated in 2018 that an extra 203 consultant posts were required within two years to meet the demand for services in England. The figures for March 2021, with 1,378 posts in England represented only an increase of 118 from April 2018
- The rate of ophthalmology and medical ophthalmology consultants in England has increased, from 1.7 consultants per 100,000 population in September 2009 to 2.5 per 100,000 population in March 2021. The RCOphth estimated for hospital units an ideal consultant rate of 3 to 3.5 per 100,000 population. Across England the rate varies by NHS region from 1.8 per 100,000 population in the East of England to 3.1 per 100,000 in London
- The RCOphth 2018 census also highlighted the need for increases in specialty doctors, staff grades and associate specialists (SAS doctors) and specialty registrars. However, numbers of SAS doctors only increased by 1.7%, 40 posts, from April 2018 to March 2021, 59 below the increase of 188 posts the RCOphth recommended for England
- The number of ophthalmology specialty registrars have fluctuated between 670 and 830 since 2009 with no clear trend, with 296 registrars in March 2021. The RCOphth commented there are insufficient specialist trainees to fill future posts and meet the expected demands of the service.

[6] *RCOphth-Workforce-Census-2018.pdf*

Socio-Economic factors

Studies show that there is a link between low income and sight loss; 48% of people with sight loss say that they live in a household with a total income of less than £300 a week, compared to 19% of people with no sight loss. People with low vision are more likely to live in more deprived areas.

Recommendations

This report makes 10 recommendations as shown below. A full breakdown of the recommendations can be found in Annex 1.

Recommendation 1: Data management – It is imperative that for services to run smoothly data needs to be accessed and managed in a straightforward way. Access to accurate and real time informatics should be at the forefront of managing ophthalmic services. This includes data on cancelation where health boards should be held accountable for the number of hospital cancelations and scrutiny mechanisms put in place to ensure that hospital cancellations are avoided where possible

Recommendation 2: Improved communication within the service – For an optimal multidisciplinary approach to care to be effective, issues with communication need to be resolved. Regular meetings with managerial and clinical colleagues should be implemented to ensure a resilient and efficient workforce can reach its potential. It is also advised that the sharing of best practice and the encouragement of new innovations should be instilled within the workforce.

Recommendation 3: Reduction of a reliance on Service Level Agreements with English Health Boards - Whilst it is recognised that a long term reliance on cross border support for Eye Services in Powys is inevitable, the number of patients transferring to Bristol and Liverpool should be reduced if it is in the patients interest to do so, and the service can be safely provided in NHS Wales.

Recommendation 4: Corneal Services – Consideration should be given to the expansion of specialist corneal services.

Recommendation 5: Cross-linking – Consideration should be given to how and when a service for cross-linking should be developed. Appropriate education needs to be given to community optometrists to ensure that the service is well managed

Recommendation 6: Integration of services – Over time, out of date practices have led to a disjointed patient journey through some services. This can be problematic for the patient and the workforce. The implementation of workshops with all relevant stakeholders to establish new, leaner ways of working should be established.

Recommendation 7: Appropriate use of non-medical staff - Wales has made good use of non-medical staff. It is important that everyone is encouraged to perform to the top of their licence. A unified approach is to be encouraged.

Recommendation 8: Cataract Services redesign – Centres need to be engaging in efficient high volume surgery on a regular basis.

Recommendation 9: Anaesthetic cover in theatre – The use of anaesthetic cover in Wales is variable and depends on both the surgeon and the procedure. A streamlined cataract pathway with agreed anaesthesiology cover is recommended for a sustainable cataract service.

Recommendation 10: Independent Prescribing and Ophthalmic Diagnostic Treatment Centres (ODTCs) – For both of these services to thrive, consideration should be given to rolling out independent prescribing initiatives to all ODTCs as well as expanding ODTC services to meet the needs of the population.

What is working well in Wales?

Across all the visits I made to units in Wales, I was impressed at the dedication, enthusiasm and strong desire to see improvements in service from staff across all disciplines. There is huge potential in the workforce and a willingness from many to see new ways of working.

- **Prioritisation of patients and risk stratification**

Prior to covid there was established an R1/2/3 system to stratify the importance of appointment types to minimise avoidable sight loss. Such a structure placed Wales ahead of many other parts of the UK - particularly when it came to the covid crisis - and such foresight is commendable.

- **Interface with primary care optometry**

Wales has a long history of good collaboration between community optometrists and the hospital eye service, starting with the PEARS scheme, and now with the programme of Ophthalmic Diagnostic Treatment Centres (ODTC). Especially in the Covid era it would seem to be essential to keep patients in the community and to minimise unnecessary hospital visits. They have been pivotal in the recovery process, not least for diabetic retinal screening shortfalls where diagnostic refinement has kept many patients in the community and away from the hospital. One estimate from the Swansea area is that 80% of R1 patients can be retained in the community.

Whilst celebrating the success of the ODTCs, it must be recognised that a relatively small number of optometrists have IP (independent prescribing) training – of the order of 3-5%. This is significantly lower than is the case in Scotland. Much of the initial funding to set up the ODTCs came from one time funding from central government with the intention that health boards mainstream this service.

ODTCs form an important part of monitoring of long term conditions such as glaucoma, and again it is important to be aware of differences in practice throughout the country. In some places this is information gathering only, with decision making being deferred to the hospital in other places sufficient training enables the optometrist to make a decision regarding patient care. The former can add yet more pressure to an already stressed hospital system if the consultant or other healthcare professional has to make time to view the information of a glaucoma patient remotely, albeit in a more efficient manner than a face to face appointment. It still takes up time and is potentially expensive.

The acquisition of the data can also be quite an expensive way of achieving this result, and an alternative approach such as data gathering within a hospital organised diagnostic imaging centre may be actually more cost effective. Such a centre need not necessarily be situated with the hospital premises. Two approaches have been implemented across Wales, firstly where the ODTC is based in community optometrists and the other where the centre is based in a hospital. Both models are

successful but the work carried out in Swansea Bay Health Board is worthy of acknowledgement in the efficient use of appropriately trained personnel

Similar praise is due for the macula service provided in Aneurin Bevan Health Board. Their macula service is delivered remote from the hospital in a Specsavers premises. As a result, not only did they manage to maintain treatment numbers of patients requiring macula treatment during the Covid pandemic but in fact they actually increased the number of treatments given by 16% - a truly remarkable achievement.

- **Rollout of OpenEyes**

Wales is fortunate in that the implementation of the OpenEyes is in process. It is pertinent to note that with both Scotland and Wales undergoing similar open transparent evaluations of the various digital platforms on offer, both countries have decided to adopt universal rollout of the same system.

It is commendable that 17 optometric practices in the Cardiff area are now networked to enable images captured in the community to be shared with the hospital system.

Inevitably there will be delays and complications with the move to an Electronic Patient Record (EPR). Not only will there be learning issues and reluctance on the part of some staff moving from paper to computer, but there will be constraints in shifting historic data from paper notes or alternative digital systems,

- **Utilisation of appropriate personnel**

Preceding the suggestions contained in the Ophthalmic Clinical Competency Framework (OCCCF) document, Karen Phillips, an orthoptist in Bridgend, has for 20 years been training technicians to conduct a wide variety of procedures, particularly with image capture, and this is to be highly commended.

Similarly, the work that Cheryl Madeira-Cole from Swansea is undertaking to take develop this concept further is extremely encouraging. It is planned to take non-nursing staff and train them (up over two years) to be able to assist in cataract surgery. (The curriculum has now been approved by Agored Cymru).

Throughout Wales there seems to be issues with shortfalls in trained ophthalmic nurses and this could help meet this demand.

Within the nursing sector, it is impressive to see how many nurses are taking up additional skills, and within both Aneurin Bevan and Cardiff and Vale health board's posts are being developed for nurse practitioners undertaking straightforward oculoplastic procedures. Traditionally most ophthalmic nurses would go to Bristol for training.

Since Covid, much of the teaching has been online, which has been to the benefit of staff who have not had to make the journey across the border. There seems to be an enthusiasm for a repatriation of this education and for it to be delivered within Wales. Again this is something that is to be encouraged.

- **Teach and Treat**

The Welsh School of Optometry is well developed, and throughout the UK there is a realisation that there is a need for upskilling the next generation of optometrists to be able to recognise and manage disease. The Teach and Treat programme in Cardiff and the Vale is something that is to be applauded.

- **Virtual clinics**

Reference has already been made to community acquired images for the monitoring of diseases such as glaucoma, macula and diabetes. In some centres, notably Newport, there is the establishment of a virtual service for managing oculoplastic waiting lists. Such examples exist elsewhere in the UK and have been shown to be a highly efficient means of triaging patients.

Following review, it is frequently possible to send patients back to their General Practitioner advising either “no treatment”, or simple treatment measures that can be conducted in the community. More importantly, cases with suspected cancer can be fast tracked.

There are two means of approaching this, and the more reliable is that adopted by Newport, whereby professional medical photographers create the image. This is less convenient for patients with a considerable journey to the hospital, but in densely packed conurbations this may well be acceptable. The alternative of relying on community captured images (patient smartphone, GP or optometrist) are often dependent on the quality of the image, and there is mixed success with this approach.

- **New establishment of the Royal College of Ophthalmology Wales sub-committee**

The recent establishment of the above body is to be welcomed. Previously there did seem to be a problem of the ophthalmologists within the country being able to speak with a unified voice. The equivalent structure in Scotland has been highly successful and is a means of bringing together all those who have concerns about the progression of Eye Care Services in the country. Enhancing communication across all professions concerned with eye health is essential for clearing up potential misunderstandings, and ensuring that national policy proceeds in the most helpful direction.

What is not working so well in Wales?

- **Managerial support**

In each of the health boards where I was able to meet with managers I was impressed with their dedication for the service, and for their level of understanding of the complexities of the specialty – this being the case even when they had been in post for a relatively short space of time. However, on several occasions I had reports from medical and nursing staff that they felt that the management/clinical staff interface could be improved. The issues raised were as follows:

- Frequently the managers were not available on site on a regular basis, on many occasions having their office in a separate hospital. Clearly this makes it difficult for the manager to have a "coal face" understanding of what the particular concerns are for staff.

- Infrequent or cancelled meetings.

- Managers responsible for the service frequently being at a junior level where rapid decisions could not be made. In some cases, there are service inefficiencies brought about by the impossibility of getting relatively inexpensive pieces of equipment approved for purchase. For example, ultrasound biometry to allow calculation of an intraocular lens in patients with dense cataract (i.e. severely visually impaired individuals). Such equipment (being slightly over the immediate authorisation cap) faced delays in approval for over one year. This lead to patients having their surgery cancelled with all the inefficiencies and disappointment that this entails.

- Frequent movement of managerial staff, so that just as they were beginning to understand the complexities of the specialty they were moved on to another post.

All of the above lead to frustrations for the staff who feel that their concerns are not being suitably addressed.

- **Historic anomalies**

The restructuring of health services in Wales with the amalgamation of certain historic boards is confusing and has led to some unfortunate anomalous practice. A prime example would be the situation of Bridgend Hospital which was previously part of Swansea Bay Health Board and is now part of Cwm Taf Morgannwg but is staffed mainly by consultants who have their primary contract with Cardiff. (They provide services to Bridgend through a Service Level Agreement).

One does appreciate the difficulties of unpicking such historic contracts and that it can be considered almost too problematic to contemplate. However, it does lead to a lot of difficulty for staff on the ground and for patient flows.

It is a concern that the macula service seems to be extremely disjointed within the south east, with a diagnosis being made in Bridgend but all treatment being carried out in Cardiff. This is very poor for the patient journey and certainly does not allow the possibility of immediate same day treatment for patients presenting with urgent problems.

Similarly in North Wales where Betsi Cadwaladr has been formed out of three separate health boards, this has not resulted in cohesive service provision. Each individual department has its own particular strains and it is unfortunate that there is no unified plan regarding utilisation of manpower or in the provision of services to outlying clinics.

As regards the latter, it is noted that clinics in Mold, which is closer to Wrexham than Abergele, is provided with a visiting service from both base hospitals. Reportedly, sometimes even items of equipment are not readily shared between the two visiting departments. Some means of properly unifying the service across the whole of North Wales is essential.

- **Hospital Optometry**

With the exception of Cwm Taff Morgannwg, there would appear to be a relative paucity of hospital optometrists, despite there being such an excellent training coming out of the School of Optometry in Cardiff. Reportedly many Optometrists seeking to specialise within the hospital service tend to migrate to Bristol or further afield and are lost to the health service in Wales.

Whilst there were a few examples of visiting practitioners coming in to perform contact lens clinics once or twice a week, this does not appear to be universal. It is surprising that more use is not made of Optometrists to help with the management of glaucoma patients, patients coming through the macula service, and those in paediatrics requiring refraction. Having Optometrists working alongside doctors is a means of ensuring continuing education and increases the confidence of non-medical staff and their ability to make clinical decisions.

Ultimately the goal should be to enhance the level of training in the community and increase the numbers with Independent Prescribing (IP) qualifications. However, it must be recognised that training itself is a time-consuming endeavour and puts further pressure on an already stretched service. By increasing the number of competent and confident hospital Optometrists the further training of their colleagues, who are predominantly based in the community, is facilitated.

It must be remembered that every time the Welsh Government pays for a service in the community which requires either decision or treatment refinement in the hospital, they have effectively paid twice.

- **Vitreoretinal services**

For a population of over 3 million people, Wales is relatively understaffed by vitreoretinal (VR) surgeons. There are currently three in Cardiff, two in Swansea, one in Hywel Dda and one full time and two part-time in North Wales. There is much that is extremely impressive about the provision of VR services, in particular from those who are offering a single handed or near single handed practice. These individuals frequently go above and beyond what would normally be expected, providing flexible services to best accommodate emergency patients. Likewise in Cardiff, coming out of lockdown there has been a focus on working through their surgical backlog.

The surgeons in Swansea seem similarly dedicated to their specialty but frequently are frustrated by situations beyond their control. It was reported to me that a lack of appropriately trained nurses can result in patients not having their procedure carried out locally, even when the surgeon and anaesthetist were present and there was theatre capacity. In this circumstance the patient can end up being referred to the Southwest of England.

Overall it was very surprising to learn that extremely large numbers of patients are being sent to Bristol, particularly for out-of-hours surgical provision. Attempts were made a number of years ago to institute a South Wales rota but this did not happen, and one suggestion given was that the economic cost of providing a Saturday theatre was going to be too great. Whilst this might have been true in the past, it would seem very strange to be able to make that argument now.

It is estimated that from the Swansea area alone there may be one or two patients a week being sent to Bristol. It was suggested that from Cardiff and the other Southern Health Boards that there could be a further 5-6 patients a week being sent. If this is true, then at the cost of £2,500 per patient, as the most conservative estimate, it must be costing somewhere between £500,000 and £750,000 to have this service provided by Bristol. It was surprising that no-one was able to give an exact figure for the numbers of patients involved in such cross border transfers.

It is also surprising that between Cardiff and Swansea there is no programme of training vitreoretinal fellows. Elsewhere this tends to be the traditional way of providing emergency services given that young trainee surgeons will be keen to gain as much surgical experience as possible in a short time frame. Quite apart from the provision of emergency services, it is also imperative to look to the future and have some form of succession planning for those who will continue the service into the future. The age profile of the VR department in Cardiff would be perhaps the most fragile, with all of the surgeons now being over 50.

- **Uveitis**

It is similarly surprising to learn that there is no provision of biologic treatments for patients with uveitis. This is an essential service to prevent patients unnecessarily losing sight or suffering from the consequences of over-reliance on corticosteroid therapy. Again, it has been difficult to establish the number of patients who are being sent to Bristol for treatment, but similar to my comments about VR surgery, this is

money that is being lost to Wales when there is the expertise locally to provide the service.

In North Wales there is currently an Associate Specialist undergoing Article 14 training, who has an interest in uveitis. This individual could be well placed to provide a uveitis service for the north and avoid patients being sent to Liverpool for such management.

Currently the major block to this service would appear to be access to infusion suites and funding for therapy with biologic agents, rather than a lack of training or the enthusiasm of Medical Retina specialists.

- **Electrodiagnostics**

Currently there is a limited electrodiagnostic service provided, therefore the majority of patients who require this particular investigation are also being sent to Bristol or Liverpool. Again, this is not only inconvenient, but a further cost to the Welsh taxpayer.

Whilst the population in Scotland is larger than that of Wales at over 5 million, currently Scotland has three centres with electrodiagnostic departments.

- **Corneal cross linking**

The Welsh government approved the provision of corneal collagen cross linking earlier this year. This is a proven technology to prevent avoidable sight loss in young patients with keratoconus. When this disease progresses, the management options become much more complex, expensive and often have poorer outcomes.

Once it is advertised that this service is offered, the number of patients being referred up for possible treatment may be considerable. It is advised that careful pathways are established to ensure that the hospital eye service is not overwhelmed by inappropriate referrals being made from community optometry.

Most patients can be kept in the community with provision of contact lenses by their local Optometrist. For those of the age group and with the potential for progression, they are best managed by a hospital Optometrist who can ensure proper monitoring with keratometry. It should be the minority that require referral to a corneal specialist for advice as to when cross linking is required.

When such a service is established, it is advised that consideration be given to nurse-led procedures, as a surgeon's time in undertaking what is a relatively straightforward technical procedure can be prohibitively expensive.

Overall, there would appear to be a relative paucity of corneal specialists in the country. There is now no corneal surgeon in North Wales. The university department in Cardiff is unusual in not having a full time surgeon, but rather having a presence only one day per week. (Their surgeon is mainly based in Bridgend). There is an excellent service provided by Aneurin Bevin Health Board but now stretched to capacity.

- **Infrastructure**

Throughout the UK, part of the pressure on eye units has been the increase in footfall through individual departments. The demographic shifts that have led to more patients needing our care, is matched by the increase in complexity of treatment options. In the past, patients with macula disease had few therapeutic possibilities. As a result they had relatively few hospital visits with discharge back to the community for supportive rather than curative procedures.

We are now in the happy situation of having more treatment available, but with the enormous problem of more return patients. In general the ratio of new to return patients for eye departments is 1:4. Such statistics as were made available, confirmed that this situation pertains in Wales, with 80% of patients seen being returns.

In addition to the sheer number of patients being seen, there has been an increase in diagnostic and therapeutic equipment required in departments. In response to increasing workload, departments have quite rightly expanded the workforce across all the professions, and they require space to work.

With the exception of the newly built paediatric department in Cardiff (which was well designed with large rooms and good patient flow), all of the other units that I visited had inadequate space to fulfil the tasks demanded of them. Frequently rooms were double purposed, leading to inefficiencies in patient flow. In some cases there was not sufficient space for doctors to be able to safely work.

In Carmarthen one room in the eye clinic was permanently occupied by an anticoagulant clinic, which seems highly inappropriate given the constraints on their clinic availability.

The response in most cases is to have disjointed departments, with other clinic availability being made at a distance. Clearly this is hugely inefficient. In both Bridgend and in Cardiff they have partly solved the problem by having very compact clinic rooms in a semi open-plan fashion with minimal partitions not reaching the ceiling. This has the advantage of accommodating a lot of people within a very small area. It is also useful as a means of supervising junior staff as all conversations can be monitored. However, clearly patient confidentiality is highly compromised by such an approach, and would not be deemed acceptable in terms of safe practice in the modern era.

What is true for the outpatient facilities is also mirrored by many of the surgical departments. In some, particularly the Royal Glamorgan, the patient journey from the ward to the theatre is along a considerable corridor. Whilst achieving high volume surgery in such a setting is not impossible, it becomes more difficult. A further inefficiency in this particular hospital set up, is the insistence of a trained nurse accompanying the patient between the two treatment areas, supposedly in case of life-threatening compromise post-surgery. Given that most patients have surgery under local anaesthesia this would seem to be completely unnecessary.

Recovery Plans

The possibility of expanding capacity in some health boards has already been briefly discussed, but the available estate is limited.

In the short term it is advised that consideration be given to the possibility of using modular theatre accommodation. Modern designs are very acceptable and provide a good working environment. They can be rapidly deployed and the number of units supplied to meet demand and the space available.

If and when more permanent solutions are found they can be re-serviced by other departments.

In discussion with clinical colleagues there was some concern that such short term solutions evolve into more permanent solutions, and given the history of the use of estate in many Health Boards this disquiet is understandable.

Whilst the site at Abergele has space available, there are insurmountable constraints regarding access to the site. The only route to the hospital involves crossing an aged bridge which has a weight limit, thereby preventing modular units being brought in on flat-bed trucks. There may be no option but to site an efficient cataract centre off the current site at a location that best suits access for the majority of potential patients and at an acceptable distance for commuting staff.

Throughout the UK there is considerable interest in managing the growing demand for cataract services by developing Elective Care Centres (ECC) with high throughput pathways.

There are significant advantages in this approach, but it is important to be aware of potential problems that might arise.

- Any high volume surgical facility can de-stabilise the effective running of neighbouring units, not least when there are training responsibilities. As discussed in the RCO document on efficient cataract surgery, this is not insurmountable. More significant is the antagonism that can arise between clinicians when there are accusations of “cherry picking” straight forward cases for the ECC.

- Given the rush throughout the UK to develop such centres, there will be significant competition to fill these surgical posts, and there was concern raised from some clinicians that such ECCs might end up being staffed by private providers if it becomes impossible to fill NHS posts.

As discussed previously, there is no one department in Wales that has a properly integrated patient pathway for any of their eye services. Each Health Board would benefit from a complete re-design of all aspects of how they deliver care to cope with the over-whelming demand and the technological developments that are projected. It is therefore suggested that, rather than viewing ECCs as being a part solution to the

overall problem, they are integrated into the long term plan. This immediately avoids competition between different aspects of the service.

Given the difficulty of recruiting to particular Health Board areas/departments, it is suggested that there be a bold vision to establish three new ophthalmology hubs for Wales. Two could be centred in the south and one in the north. For the southwest, one could be sited to best serve the populations of Swansea Bay and Hywel Dda. In the east for Cardiff, Aneurin Bevan and Cwm Taf Morgannwg. The central hubs would be positioned to provide ease of access for the majority of the populations concerned. In the north, one hub should suffice, centred close to road/rail access for the majority population in the northeast.

In all situations a firm commitment to provide services in the regional spokes would have to be guaranteed. As mentioned previously, this is especially important for long term conditions that require more frequent interventions. With time, more of this can be supplied by integrated Community Optometry. There will be a continuing demand for some specialist visiting services and in the more remote geographical areas patients should be given the choice of local cataract provision.

The experience of Aneurin Bevan Health Board with split site working for paediatrics and complex anaesthesia has been acknowledged in this report. As a result, it is accepted that there will have to be a continuing presence of ophthalmology in some of the larger teaching hospitals for the delivery of care that is more complex or requires multi-disciplinary working. In addition to Paediatrics this will include major trauma. It may be necessary to centralise such models of care in just one or two centres.

Recruitment

Recruitment to conjoined departments will be more realistic. Some individuals may choose to spend more of their time in some more remote locations and this will only add to the efficiency of the service. The Royal College of Ophthalmologists has for many years refused to approve single handed practice, recognising the importance of a team of Consultants who can mentor and stimulate one another.

In the Scottish context, both Borders and Grampian Health Boards repeatedly failed to recruit to services in Melrose and Elgin respectively. Ultimately the only realistic option was for Melrose to be serviced through an SLA with Lothian, and for Elgin to be provided with a visiting service from Aberdeen. In the latter locality much of this has been through the development of rapid access appointments being made available through local optometrists (who are also involved in Glaucoma management) and more use of telemedicine to provide the Macula service.

In the Highlands and Islands of Scotland there has been particular difficulty providing a service to the more outlying regions. Recruitment to consultant positions was problematic when the job plan included being First on-call (at one time there were insufficient middle grade staff to enable a two tier rota), plus a significant number of nights away providing a service to the islands. Recently there was an innovative

appointment to the department of a Global Citizenship Consultant[7], which is seen as being part of Scotland's Global Citizenship programme

This individual is joint funded by NHS Western Isles, NHS Orkney and NHS Highland. As part of the Job Plan the incumbent is able to have ten weeks of paid leave to develop a project in Sub-Saharan Africa (Tanzania). The Job Plan, whilst she is in Scotland, is weighted with a large number of clinical sessions. The savings to the Island Health Boards are considerable, as they no longer need to meet the substantial locum/ waiting list initiative payments to try and meet Time to Treatment Guarantee targets.

In addition to the above post, there are two further positions fully funded by NHS Highland in Caithness. One is for a Consultant Physician, and the other a Consultant Anaesthetist.

Whilst it might be difficult to fully replicate such a scheme, it should be recognised that imaginative schemes are sometimes necessary to fill "hard to recruit" posts.

Planning

This vision of three ophthalmology hubs will require significant planning, and it is envisaged that the whole process from decision to opening would take at least five years.

NHS Highland has recently gone through just such a process, and in October 2022 plan to open a purpose built facility to patients. Whilst originally conceived as part of the National Treatment Centres, (which are planned to meet cataract and orthopaedic waiting list pressures), the Highland approach is for the fully integrated re-designed model, as suggested above.

There are a few important principles which we have found to be important:

- All stake-holders should be involved with the architect in the planning and design process
- A commitment to completely re-design patient pathways, rather than replicating old methods
- A rapid move to being fully electronic
- Integrated diagnostic hubs. Digital imaging is going to be central to the development of eye services, and in the future Artificial Intelligence will be involved in decision making rather than clinicians. The hubs will be a place which can handle an efficient throughput of patients, possibly over seven day working, but with some information being gathered from remote sites.
- Flexible staffing. Acceptance that competence to the task is the important determinant of who performs the role, not the route to which that was attained.
- Future proofing. Designs with the flexibility of changing room use or expansion, as needs change over the next 25 years.

[7] https://www.scottishglobalhealth.org/

Conclusions

There is much that is highly commendable regarding the Ophthalmology Services in Wales and all staff should be encouraged to continue building on these strengths as follows:

- Expansion and strengthening of the ODTCs, through Teach and Treat clinics (University of Cardiff), and increasing numbers of practitioners with Independent prescribing.
- An expansion of hospital optometry to manage Keratoconus referrals, but also to aid in the management of long term conditions.
- Continuation of the roll out of OpenEyes.
- Ensuring that all digital systems (including servers, networking and work-stations) are in place to enable Electronic Patient records and their interface with relevant data inputs.
- Sharing of best practice, especially in terms of glaucoma pathways and the macula services.
- Continue with the excellent training programmes for technicians to be involved in imaging, data capture and even some decision making.
- Increasing nurse training opportunities within Wales.

It is suggested that certain areas undergo some reform

- Consolidation of departments recognising the extreme difficulty in recruiting to some hospitals.
- A preparedness to re-organise traditional patient pathways that cross historic boundaries. These no longer provide a service that is in the best interests of patients or staff.
- The repatriation of patients, where appropriate, who currently have unnecessary journeys to English boards for treatment: Vitreo-retinal surgery, Uveitis, Electrophysiology, and to a lesser extent Cornea and some strabismus.
- The development of appropriate Clinical Fellowship programmes, especially in the Vitreo-retinal service. This should facilitate an emergency weekend/out of hours service for South Wales.
- The development of efficient cataract surgery facilities. This will involve the utilisation of some existing estate but may necessitate the deployment of new modular units. More important is an examination of current blockages to current patient flow and the adoption of the recommendations contained in the RCO advisory document.
- A discussion as to whether an anaesthetic presence is essential for every surgical list. The re-investment of savings made to the benefit of individual eye departments is advised.
- None of the existing estate is sufficient for current demands, let alone the project growth that is anticipated. Three purpose-built Centres of Excellence are advised. These should be sited to ensure equity of access for the populations that will be served.

- Alongside these central hubs, it is essential that a robust system of peripheral spokes is not only maintained but enhanced. This will involve community optometrists and specialist visiting services.
- Given the difficulty of recruitment to some locations, innovative job planning is suggested.

Annex

Annex 1: Detailed Recommendations

Recommendation 1: Data management

Access to reliable data did not seem to be straightforward. Control and justification of cancellations did not seem to be monitored. By contrast, in Scotland, cancellations are monitored on a weekly basis and there is considerable scrutiny on use of every list with encouragement to increase productivity.

Recommendation 2: Improved communication

It is evident that in some units there have been considerable communication issues within the consultant body, and in other areas between clinical staff and management. It is advised that where issues are developing that early recourse to mediation can prevent intractable situations arising. Once a unit has had gradual withdrawal of trainees, and a succession of new appointees move onto other posts, it can be extremely difficult to rectify the situation.

Overall it is advised that a system of regular update meetings between management and the various groups of clinicians is adopted. These can be kept brief and conducted via an online platform such as Teams.

A system of encouraging innovations to improve efficiencies/cost savings is to be encouraged with a fast track for financial approval where necessary.

Recommendation 3: Reduction of a reliance on Service Level Agreements with English Health Boards.

Whilst it is recognised that a long term reliance on cross border support for Eye Services in Powys is inevitable, the number of patients transferring to Bristol and Liverpool could be reduced. In the short term there should be some investigation into the costs involved. When combining VR, uveitis, Electrodiagnostics, Cornea (North Wales) and Strabismus and ROP screening (Bangor), this probably amounts to more than £1 million.

Some means of providing an Emergency VR service for South Wales should be explored, and this should include both a timetabled weekend emergency list and an amalgamated on-call rota. A fellowship programme to train up the next generation of surgeons is also advised. Post CCT trainees are extremely cost-effective. Whilst the early stages of training can be stressful for the trainer, ultimately they are an acceptable way of managing out of hours work.

For North Wales the situation may be more complex. The population would probably demand a greater number of VR surgeons, but it is more difficult to accurately project without knowing exact details of the numbers of surgeries currently being performed and the numbers being transferred to Liverpool. Certainly it must be recognised that without the extreme goodwill of the current surgeons, the service is understaffed.

Recommendation 4: Corneal Services

There is currently no specialised corneal surgeon for North Wales and patients needing this skilled input are supported through Liverpool. In the light of other difficulties facing services in Betsi Cadwaladr, recruiting may well be difficult, given that there is competition for alternative posts with more attractive facilities.

On the whole, corneal surgeons enjoy having the capability of having access to private facilities where the full range of refractive surgery using lasers is offered. Inevitably this means that they tend to want to work in areas with higher population densities where the economics of scale dictate that private companies are prepared to establish services which require considerable capital investment. Whilst there are corneal surgeons who are prepared to work in remote areas for life style reasons, it has to be recognised that this is unusual. For this reason, a new job plan to attract such an individual would probably best site the majority of their work in the Eastern part of the region. By this means they would have the potential of finding additional employment (in the private sector) in North England or the Wrexham area.

Recommendation 5: Cross-linking

As mentioned previously, it is commendable that the Welsh Government has given approval for Cross linking, although the roll out of this service needs to be handled carefully with appropriate education of community Optometrists to ensure that the service is not over-whelmed with referrals. The use of Hospital Optometrists to provide a contact lens service and managing low complexity Keratoconus is advised.

For North Wales the provision of this service is going to be complicated. By definition the majority of patients will be young and unable to take time off work or study in order to travel to Liverpool on a regular basis. In the short term, if recruitment of a corneal specialist is problematic, the possibility of establishing a visiting service from Liverpool should be considered.

Recommendation 6: Integration of services

As mentioned previously, historical practice has led to anomalous patient journeys. Unpicking this can be problematic and potentially threatening to staff who have become used to a particular pattern to their work. It is suggested that time is set aside to have a workshop where all the relevant stakeholders have a session where a new way of working is established. Where there is the risk of this being particularly sensitive it would be wise to involve some form of facilitation. The overarching principle should be “what is best for the patient”, whilst maintaining a sustainable working environment.

Areas where this will be particularly important are:

1. North Wales, where Betsi Cadwaladr is still functioning as three semi-autonomous units. Given the potential fragility of human resource provision, particularly in two of the departments, some degree of central planning and sharing of personnel would seem sensible.

2. Cwm Taf Morgannwg. There are particular recruitment difficulties to the main department at the Royal Glamorgan in Llantrisant, and the anomalous situation in Bridgend has already been discussed.
3. The amalgamation of services with recruitment across a combined department of Swansea Bay and Hywel Dda. Given the geography of the latter Health Board and the political sensitivity of appearing to withdraw health provision, it is essential that appropriate services are retained in the outlying clinics so that it will be apparent to the local population that they are actually receiving an enhanced service, with more “smart working”.

Recommendation 7: Appropriate use of Non-Medical staff

Overall there has been impressive use of Non-medical staff in most units, and it is important that everyone is encouraged to perform to the top of their licence.

There are anomalies where some practices are deemed acceptable in some units yet not in others. A unified approach with a scaling up rather than down is to be encouraged.

Elsewhere in the UK, hospital optometrists are trained to help with Glaucoma and Macula services. This seems to be relatively unusual in Wales and there has been a greater tendency to use nurses. Whilst it does not matter what the route is taken to achieve this common competency, it is often quicker and simpler to enable Optometrists to take up these roles, given their prior training. The Covid pandemic has been disruptive to many high street businesses and there may be some sessional Optometrists who are keen to develop their career in other ways. For some individuals the relatively lower remuneration of Health service employment is more than compensated by more interesting work, with the possibility of career advancement.

In-house provision of medical contact lenses within the hospital setting may be more economic, especially when combined with a keratoconus monitoring service.

Agored Cymru has now approved the curriculum for the development of non-nursing assistants for cataract surgery. The expansion of ophthalmic technicians to aid with image capture and even low level decision making is to be encouraged.

The system of ODTCs is impressive but the more that decision making takes place within the community rather than being reliant on data reading by Consultants in the hospital, the more cost effective it becomes. At the very least it is advised to train nurses or Optometrists to assist with virtual macula/glaucoma clinics.

Medical photographers are essential to giving oversight to the capture of digital images. This will become an increasing requirement for modern eye services. Whilst some tasks such as images for a virtual oculoplastic clinic require specialist Medical Photography skills, much of the other tasks involving fundus cameras and OCT can be performed by suitably trained technicians.

Recommendation 8: Cataract Services redesign

There does not appear to be any unit in the country that has been engaging in efficient high volume surgery on a regular basis. It is reported that when Out of Hours working has been carried out at weekends using in-sourcing teams, it has been possible to operate on up to 20 cases in a day. The reasons for the reversion to less efficient working during normal working conditions are not always entirely clear. However, part of the explanation does hinge around nursing levels and perverse incentives.

High volume lists are always attractive to managers who understandably want to see a reduction in long waiting lists. This can only be achieved with appropriate numbers of supporting staff, and in particular it is essential to have adequate numbers of trained staff to assist the surgeon.

Overall, when attempting to address issues of productivity it is advised that a collaborative approach exploring how throughput can be improved is adopted and this should involve all team members. It must be recognised that most units have training responsibilities, and this must be factored into calculations. However, trainees and high-volume lists are not necessarily mutually exclusive.

Agenda for Change can limit the capability of nurses taking on additional duties.

The Royal College document on high volume surgery gives clear descriptions as to how to organise efficient working, even when trainees are being assigned cases. The surgical time is usually the least important factor as the difference between a slick surgeon and a more average surgeon is usually no more than five minutes. The crucial factor is all the peripheral activity that goes on to get the patient from arrival to operating table ready for surgery. The surgeon is important in having the will to make the process happen. Hence the same person can operate with higher throughput at the weekend as opposed to the normal weekday list. However, he or she is not the only person in the team, and on “standard lists” there may be other factors that come into play, and without support from senior nurses who can ensure the theatre is staffed appropriately, it may become difficult to achieve streamlined working.

The Royal College of Ophthalmologists have, through the UK Ophthalmology Alliance, devised an App[8] that can be downloaded onto a mobile phone to help analyse where hold ups in the theatre process can be identified

Each unit should commit themselves to an analysis of current efficiency and aspire to improvements. The above App can be a useful aid in this process.

Recommendation 9: Anaesthetic cover in theatre

It has been suggested that the provision of an anaesthetist at all lists in an eye department should be universal. Whilst reportedly this may also be true in Northern

[8] *https://uk-oa.co.uk/workstreams/eyefficiency-how-to-benchmark-and-improve-theatre-and-injection-productivity/*

Ireland, it would certainly not be common practice throughout the rest of the UK. Indeed, there are even departments in Wales where this is not the usual practice.

The decision to perform cataract surgery under local anaesthesia using either a sub-tenons or intra-cameral anaesthetic agent alone, is clearly a matter of individual surgeon preference. It would be quite inappropriate to make any particular claims about the benefits of one procedure over another. What was surprising was to learn that in one health board retrobulbar or peribulbar anaesthesia was still being performed, and particularly the former carries with it the risk of potential complications to the globe and would not generally be considered a part of modern practice.

However, for those that perform sub-tenons anaesthesia, which seems to be the majority preference, it is not essential that an anaesthetist is present. In most units where this is the preferred procedure, the surgeon or their trainee assistant can perform this manoeuvre quite quickly either in the anaesthetic room or on the table immediately prior to the surgery commencing. It does not significantly add to the speed of the procedure having an anaesthetist perform this technique. If it was deemed essential to have an assistant administer the anaesthetic and a trainee is not present, it would be possible to train up a technician or nurse in this technique. A sub-tenon's anaesthetics relatively straightforward, and certainly easier and safer to perform than the retrobulbar or peribulbar routes

Importantly, the Royal College of Ophthalmologists, in their recent document on the suggestions for developing high volume cataract surgery, specifically state that "it is not imperative to have an anaesthetist present for cataract procedures, even if these are being carried out in remote locations". The one exception to the above suggestion would be for the particular situation as pertains in Abergele in North Wales. It should be recognised that the services provided by an effectively single-handed VR surgeon is quite exceptional. He is working in very dilapidated and isolated conditions. Anything which would conflict with his immediate access to being able to perform emergency surgery at very short notice would be highly regrettable. This particular service appears to be under extraordinary pressure. Regrettably, if the only provision of an anaesthetist was from the local General hospital it is likely that there could be a complete failure of the service. It is unlikely that the Anaesthetic Department would be able to respond to emergency cases in a timely fashion.

Recommendation 10: Independent Prescribing and Ophthalmic Diagnostic Treatment Centres (ODTCs)

Building on the recommendations of No 7, it is advised to encourage the upskilling of Optometrists both in the Community and Hospital setting to be capable of Independent prescribing.

The future management of long term conditions such as Macula disease and Glaucoma are going to be dependent on efficient imaging and information gathering.

Two models are possible, one where this takes place within the Community setting (either Optometrists working in the High street or in a peripheral Ophthalmic unit), the other with high volume patient processing in an Ophthalmic Diagnostic Treatment Centre. The latter could be a part of the Regional Centres of Excellence. In the short term Medical staff will be involved in the interpretation and decision making resulting from the information gathering. With appropriate training other professional groups can undertake these tasks.

Decisions regarding the most appropriate model will be dependent on Geography and should be centred on patient convenience. Elsewhere in the UK, models exist where ODTCs can provide evening and weekend clinics staffed largely by Ophthalmic technicians, and the decision making by Doctors or Optometrists can be deferred to normal working hours. This has high levels of patient acceptance

Annex 2: Review of individual health boards

1. Aneurin Bevan University Health Board

Site Visit to the main hospital in Newport only.

There are considerable strengths with the department in Newport, not least that compared to some other units they are relatively well staffed with consultants. They have 12 consultants covering most of the specialties but with no VR surgeon. They are particularly well staffed for medical retina, with four doctors having this sub-specialty interest, with plans to recruit a fifth. All the medical retinal consultants perform cataract surgery exclusively with no other sub-specialty surgical interest. There are plans to recruit a third glaucoma specialist and a third oculoplastic consultant. There are also plans to train a nurse in basic oculoplastics.

They currently have an associate specialist who runs the emergency care service, and this has been very successful. Itis well supported by experienced nurses who can provide not only effective triage but in some cases can initiate treatment. With the forthcoming retrial of the associate specialist, consideration is being given to replacement with a consultant with an interest in primary care ophthalmology and cataract.

Covid has created a significant problem for the glaucoma backlog, and whilst many of these patients are being seen in the community through the ODTC scheme, there is a

significant problem in that this is essentially a data gathering service provided in the community, with decision making still residing in the hospital. As such, there is currently a very large backlog of patients who need this data analysis to be carried out. In discussion with the glaucoma lead, arrangements are being made for her to review 1,400 such patients remotely. As expressed elsewhere, ultimately it would be better to have this decision making taking place within the community, but clearly there are training implications for this. The review of so many patients has to be conducted within a properly timetabled job plan and displaces other activity or results in additional payment.

The main issues for the health board remain a sensible plan to deal with the considerable cataract surgical backlog. The most realistic approach would be the establishment of a high volume efficient cataract centre at the Neville Hall Hospital in Abergavenny. It was not possible to visit this site, but from all I could gather the twin theatre here would lend itself to efficient patient throughput. The current block to this would appear to be the use of the second theatre by endoscopists. Currently within the main site in Newport they are able to use only one of the two theatres previously available to them. The theatre site has a large patient reception area which again is useful for efficient patient flow. Strangely they don't stagger patient arrival, which would be particularly important for maintaining reasonable numbers in the Covid recovery period. Consideration could be given to the use of Mydrane or Mydriasert, or even asking patients to self-administer dilating drops prior to arrival if patient spacing is going to be a significant issue.

- **Paediatrics and Emergency Surgery**

A considerable issue for the staff at Aneurin Bevan is the decision made for all paediatric cases to take place in the Grange Hospital and with the suggestion that all out-of-hours and emergency activity would take place here also. This decision highlights the problems of split site working, and there is considerable concern that this change in policy, whilst understandable from the point of view of ensuring safe anaesthesia for paediatric cases and those with complex medical needs, does bring with it considerable inefficiencies. To maintain safe surgery, experienced ophthalmic nursing staff will have to be taken from the main hospital in Newport to the Grange to support the surgeons. In this process all activity within the theatre would cease in the base hospital unless staff could be back filled from elsewhere. There is no straightforward solution to this conundrum.

- **In-Patient Facility**

Currently Newport only has provision for inpatients Monday to Friday. This can prove problematic when emergency cases, especially infectious keratitis, require admission at the weekends frequently beds in other units have to be sought. This is particularly disadvantageous for eye patients who will then be cared for by staff who have low understanding or interest in applying frequent eye drops. This is a clear inadequacy in the current service.

- **Out-Patient Facilities**

As elsewhere, there is a considerable issue with physical space in which to examine patients, and especially with the increasing consultant body this is going to become more of an issue. Currently there is no out-patient activity on Wednesday or Friday afternoons. Wednesday afternoons are reserved for “audit and case review” for the medical staff, and Friday afternoons for post-graduate teaching, jointly with Cardiff. The importance of such activity cannot be underestimated and must be protected. However, given the value of the precious physical resource it is advised that some way of using the out-patient space during this time is devised.

Virtual clinics with data gathering can be undertaken by nurses and technicians. Hospital optometrists or other staff can see patients, and in extremis consideration could be given to job planning so that the Wednesday and Friday afternoons are staffed on a rotational basis, so that whilst there is the compromise of losing some educational experience, this is something that is shared around the team.

Betsi Cadwaladr University Health Board

The main hospitals are based in Bangor in the west, Abergele in the centre and Wrexham in the east. The main eye-care unit is based in Abergele. However, whilst in theory the Head of Service has administrative responsibility across the whole region this does not seem to be the reality. Overall there is a lack of a unified approach to service planning and as a result there are the inevitable inefficiencies discussed earlier.

The estate of the main unit in Abergele is woefully inadequate, being an old TB sanatorium that was presumably only ever intended as a stopgap measure. There was evidence of mould in some of the store cupboards, thus rendering them unusable. The theatre has such a serious problem with condensation that on occasion lists have had to be cancelled. The unit has no overnight beds. In an absolute emergency they may be able to request a bed from one of the orthopaedic wards who co-share the facility. Otherwise the patient would have to be transferred to the General hospital several miles away. This is always a very unsafe situation for eye patients who end up being cared for by nurses who have no training, understanding or enthusiasm for managing conditions such as corneal infections. It is known that outcomes are poor in such circumstances.

There is no manager based on site, and this can have difficulties in terms of communication, and it was reported that management meetings do not always take place as regularly as would be desirable. Getting an ambulance to transfer patients to the general hospital in an emergency can also be extremely difficult. In this context, concerns about cataract surgery being carried out without an anaesthetist being present on site, is understandable. The facility is also not well provisioned for wheelchair users.

- **IT**

There is reasonable provision of new devices such as OCT and Zeiss visual field analysers which can be networked to an EPR. Unfortunately, many of the computers are very slow, and there can be considerable time lost in the clinics with systems not booting up appropriately.

- **Macula Services**

Abergele is well staffed with nurses able to inject, and one nurse is about to undergo training in implantation of Ozurdex implants. The macula service is busy, and they have only limited waiting room availability, as patients must share a waiting room with the small x-ray unit which is under the domain of Orthopaedics. Reportedly, the nurses will not perform IVT if a patient has had a previous retinal detachment, and medical staff must perform these injections. The reason behind this does not seem clear and certainly would not be in line with practice elsewhere in the UK. It is advised that attempts are made to rectify this practice. There has been the introduction of Brolucizumab as a new intravitreal, which is encouraging.

Reportedly many IVT patients are facing a seven week delay in treatment. This is a unacceptable situation, and efforts must be made urgently to address this. If patients do not receive their treatment in a timely fashion then the treatment is wasted and will not have the desired effect. Given the expense of intravitreal treatments, this is highly regrettable. In exploration as to why such delays occur, it was suggested that there is supposed to be a unified policy across the whole health board to ensure equity of access to care. Regrettably there seems to be a bit of misunderstanding that macula patients must always be seen as priorities and that it is essential that in every injecting facility there are sufficient patient slots to ensure that unnecessary delays are avoided.

There was also the suggestion that Abergele is becoming increasingly busy as optometrists in the west are tending to prefer to send patients to Abergele rather than Bangor. The system of ODTCs seems to be functioning well but is at the level of data gathering and with limited decision making in the community. As mentioned earlier, this puts additional strain on the hospital.

- **Diabetic Retinopathy Covid Recovery**

In Abergele, the Covid recovery of the DRS programme has been successfully managed by referral refinement taking place with community Optometry. About 250 patients have been seen in this manner in both Wrexham and Abergele. Reportedly the numbers seen in Bangor have been small.

Wrexham

The facilities in Wrexham Hospital for the eye department are extremely cramped. They only have space for seven patients in the waiting room, and this is for both patients attending Orthoptic and doctor's clinics. The clinic rooms were amongst the smallest that I have seen anywhere, and there was no possibility of doubling up clinic rooms with other equipment because there was barely enough space for a patient consultation. Most of the rooms could barely take a wheelchair and certainly not one designed for bariatric patients. Even in the toilets there were issues with poor access for patients with mobility issues. The waiting area for IVT was extremely cramped with only five seats.

- **Macula Service**

There are significant inefficiencies with the Macula Service. They have two OCT machines but no central database, so the data is stored on a hard drive. Only one of the computers is networked, so whilst the consultant running the macula clinic is able to look at the images, anybody working alongside him/her has to go to the OCT to look at the scan on the device. Clearly this will lead to delays in the whole process for macula patients, as only one patient can be dealt with at a time.

- **Staffing**

The medical team comprised an excellent team of consultants, although the youngest of these is 58. In addition, there are four middle grade staff, although only one of these is under the age of 50. They are joined by three trainees.

- **Theatre**

There is only one theatre and the prospects of high-volume surgery would be difficult in the space available. They do however practice a lot of the surgery under topical anaesthesia which can speed up the process.

- **Paediatrics**

There is a single-handed paediatric ophthalmologist who also provides a service in VR and medical retina. He recently had to deal with a crisis in the provision of ROP services for Bangor by making long journeys over to the West in order to examine premature babies. Thankfully this unsustainable practice has come to an end with the provision of a nurse-led service from Liverpool. A nurse examines the babies eyes using a RetCam imaging device, and the subsequent images can be read remotely by a paediatric ophthalmologist. For the future it may be worth exploring whether images could be captured by local staff which would obviate the necessity of travel of a nurse from Liverpool.

Bangor

Bangor is a unit that has extremely pressing problems. The loss of trainees is always significant and as mentioned previously, does not bode well for future staff recruitment. Very recently they lost a long term locum. In contrast to many non-permanent staff, he has given exceptional service. With a self-funded MBA he has a lot of understanding about management and eye service planning. He has been involved in considerable training of staff, especially nurses who he has enabled to be involved in Glaucoma management, not only in information capture but to the level of immediate examination and decision making. With a good understanding of IT systems, he championed ensuring that not only the correct equipment but also the appropriate networking and databases were in place to ensure smooth working. His work on review of patients in the glaucoma service also revealed that up to 30% of patients were being reviewed inappropriately by locum staff, and these have now been safely discharged back to the community. When he started working for the unit he found that there had been a considerable number of patients in the glaucoma clinic who had not been seen for up to four years, and he was aware of at least ten patients who had poor outcomes due to extensive delays.

- **Diabetic Service/Imaging**

It must be appreciated that there are limits to managing diabetic patients solely by the means of photography. Whilst digital retinal photographs and OCT are extremely valuable, it is also necessary for at risk patients to have live consultations to ensure that they are not developing neovascularisation (new vessel formation either at the front or the back of the eye). Currently there would seem to be an over-reliance on photography alone. Suitably trained community optometrists would be a means of overcoming this short fall.

Overall, the department is well supplied with equipment. They have sufficient OCTs and other imaging devices, and they have a multispot laser for delivering panretinal photocoagulation.

- **Theatre Provision**

There are two theatres, but only one of them is deemed appropriate for cataract surgery, and the second theatre is used for IVT. There still seems to be a reluctance to have IVT carried out by nurses, completely independent of any medical presence. Whilst it is understandable that nurses might feel exposed by having to work entirely unsupported, this is now becoming standard practice at least in some units elsewhere in the UK. It is important to have clear protocols as to what to do when events such as raised intra-ocular pressure occur, as well as lines of communication for support and advice as required.

The numbers of patients going through the cataract theatre would seem to be low, to the order of three or four being quoted per four hour session. There is no strabismus surgery provided, and all such patients must go to Liverpool. It was reported that there were two phaco machines, despite having only one theatre that was appropriate for cataract surgery, and this would seem to be a resource mismatch. During Covid one of the theatres was occupied by Maxillo-Facial surgery, and a return to status ante has not yet occurred.

- **Outreach Services**

Historically the service provided outreach clinics to five sites. All of this stopped some time ago, but prior to Covid two peripheral clinics were in operation. Many of these sites had slit lamps, and it would seem important to undertake a proper review of all the assets available for North Wales to make sure that they are being used appropriately.

- **Nursing Support**

The nurses are very ably led by an Ophthalmic Sister who is very experienced and has a good understanding of all the relevant issues. Most of the nursing staff are employed on a part-time basis, and succession planning may well be an issue. With so many part-time staff, achieving support for weekend working or waiting list initiatives can be a particular issue, given the regulations regarding Agenda for Change remuneration.

- **On-call arrangements**

Only Abergele in the centre provides 24 hour cover. In both Wrexham and Bangor on-call is up to 22:00, with a two-tier basis with middle grade staff taking the first call. There used to be six consultants in Wrexham, with current funding for 5.5. They now have three substantive consultants and two locums. The consultant tier of on-call is on a basis of 1:6, with internal cover for the unstaffed post. Clearly there are significant cost implications for this.

Suggestion: There would be considerable cost savings by implementing a unified on call arrangement across the whole of North Wales. In preparation for such a move it would be instructive to carry out an audit of the relative activity at all times of the working week. It may well transpire that very few referrals are made past 20:00. Such a review[9] in NHS Highland has led to the revolutionary principle of On-call referrals being made to the department only between the hours of 08:00 and 20:00. Out-with these times GPs, optometrists and staff working in Emergency referral units are directed to a protocol for management of acute eye conditions.

The system has worked well without significant incident for two years.

It is necessary to prepare for more activity during normal working hours, but this is more than compensated by the benefits of less stressful nights.

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9 http://intranet.nhsh.scot.nhs.uk/Org/DHS/SSU/MedicalDir/EmergencyDepartmentNEW/MASTER%20LIBRARY/08%20Eyes%20ENT%20MaxFax%20Dental%20Guidance/Ophthalmology/Ophthalmology%20-%20emergency%20protocols%20-%20USE%20THIS%20TO%20GUIDE%20MANAGEMENT.pdf#search=TAMS%20ophthalmology

Cardiff and Vale University Health Board

There are considerable strengths in the Department.

- **Research nurse**

There is a dedicated full-time research nurse who coordinates the various research projects that are being undertaken. This is highly commendable and in keeping with the department's teaching and research commitments.

- **Paediatric department**

As previously discussed, this is spacious and well equipped, with a good throughput, and staffed by an adequate number of orthoptists. They have a virtual photographic service for the increasing problem of referrals of patients with swollen optic nerve heads. This seems to function well.

There is a policy of having a medical Head of Service lead being supported by a deputy, so that there is succession planning. This is an excellent idea and ensures some degree of continuity.

The outpatient facility is reasonably spacious but will not be adequate to cope with the projected increase of medical staff from 17 to 20 consultants over the next few years. Previous mention has also been made about the semi open plan clinics which do not provide good patient confidentiality. There is a pager system in place which was purchased using endowment funds, and this has been an excellent way of getting around the problems of Covid and social distancing. By this means, patients can be given a pager if they have a delay in their appointment or are moving from one region of the clinic to another, and can be alerted when they should return.

- **Cataract Services**

There are currently about 4,000 patients awaiting cataract surgical operation including second eyes, with about 1,400 patients already on the in-patient waiting list. The current theatre setup would be inadequate to meet this demand, and some additional capacity is almost certainly required. There has been exploration of the possibility of having a modular theatre capacity provided. By this means, purpose built theatres could be very rapidly put in place at a suitable site to enable high throughput surgery. Exactly why this plan did not go ahead to fruition is not entirely clear, but it would seem to be a reasonable way of making good the backlog problems in the short term. Various approaches have been made to try and solve the cataract backlog by using insourcing and outsourcing.

- **EPR**

Cardiff is at the forefront of the rollout of the electronic patient record, and in addition to the cataract and glaucoma programmes its use is also being piloted in management of rapid access patients presenting to casualty clinics.

- **Rapid Access Clinics**

There was a feeling from some of the trainees that sometimes it was difficult to find appropriate support for patients who were seen in the emergency clinic. This has led to some inefficiencies in the system, whereby patients are brought back for review in the casualty clinic because it is impossible to get them seen in an appropriate speciality clinic. This may well be a particular problem with anterior segment disease, where the only corneal specialist has limited involvement in the Cardiff site, given that most of his practice takes places in Bridgend. One suggestion is for one of the new appointments to the consultant body being someone who has a particular interest in high volume cataract surgery and primary care, so that they would be in overall charge of the running of the casualty clinic and be best placed to supervise junior staff. An alternative proposal seems to be reform of the current review clinic appointments being safeguarded so that emergency slots are made available in the appropriate clinics.

Swansea Bay University Health Board

Comments have already been made about the excellent training of non-medical staff to help with services. By this means the medical retinal department is able to adequately deal with their volume of patients with half the number of consultants compared to similar units. They have been successful in training up other healthcare staff, (technicians, nurses, Optometrists or Orthoptists), to assist in much of this pathway.

- **Facilities**

The outpatient department has three well-appointed and equipped corridors with reasonable space in which to work. However, three corridors were fairly close to each other but widely separate from a further clinical area which was up on the first floor and closer to the diabetic ward and department. This is clearly inefficient in terms of patient journey time, although patient transfers between the two sites are kept to a minimum. Whilst on the first viewing there are a reasonable number of rooms, as they appoint more staff, (be they doctors or other healthcare professionals), it is inevitable that space will become an issue. Certainly it was evident that there is doubling up of lasers and other equipment in some of the rooms.

There is a twin theatre set in a complex a short distance from the main hospital. The unit seems to be well appointed and is amenable to high volume surgery. The building itself is a prefabricated construction which was put in place about 15 years ago with apparently a then stated lifespan of 15 years. There are reported concerns about the physical separation of the theatre from the main hospital and the need consequently of having constant anaesthetic presence. Earlier comments regarding the advice of the Royal College of Ophthalmologists regarding this situation pertain.

Cwm Taf Morgannwg University Health Board

Site visits were possible to the Royal Glamorgan at Llantrisant and also to the hospital in Bridgend. In the past successful outreach service has been provided to Merthyr Tydfil, where there is a twin theatre used for cataract surgery. There appear to be significant staffing issues regarding the resumption of this service.

There is also a macula service run in the Rhondda Valley. Overall, I was given the impression that the macula service works reasonably well, with good involvement of hospital optometrists in the running of this service and that there is adequate medical support.

However, there are considerable issues with the smooth running of ophthalmic services within this health board region that need to be addressed.

The immediate managers responsible for the eye services are based in Bridgend, and this creates a problem in that geographically they are separated from where most of the services are provided in Llantrisant. Dr Anthony Gibson, Chest Physician, has recently been appointed to have medical oversight to the provision of eye services, and I was extremely impressed at his understanding of the complexity of the service and the issues involved, despite having only recently been appointed to his position.

There seem to be significant issues with communication within both the medical team and all the others working within the department. There has been a considerable turnover of staff, with several consultants leaving to take up posts elsewhere, either within Wales or other parts of the UK. This is leading to a drop in morale. Consequently, there are difficulties in ensuring permanent recruitment of staff. There are significant gaps within the service, and in particular glaucoma is dependent on a locum consultant recently retired from practice elsewhere in Wales who is currently leading the service. A recent review of significant incidents revealed that at least 14 patients had had poor outcomes as a result of delayed appointments.

Medical training has been affected by the structures within the department, and recently two of their most junior positions have had training recognition withdrawn. The fact that the hospital ishaving to relinquish these posts will have serious implications for their current two-tier on-call rota system. The loss of training positions is always a very serious thing for an eye department, which reflects that there are unresolved issues. More significantly it also significantly impairs the prospect of future recruitment of former trainees to fulfil permanent positions.

- **Nursing support and out-patients**

The nursing support to the outpatient department would appear to be inadequate. There seems to be a lack of sufficient ophthalmic trained nurses to support the service, and it was very surprising to learn that there is a lack of permanent nursing staff to the eye department. Instead the nurses rotate around general clinics within the out-patient complex. This lack of ownership of the department leads to all manner of problems, not least a proper understanding of how materials should be stocked to enable smooth

running of the service. In most units in the UK, junior medical staff frequently have appropriate support given to them by experienced nurses. On occasions where there is a shortfall in supervision from elsewhere this can be critical to the encouragement of new and relatively inexperienced doctors. It is strongly advised that there is a reform of this arrangement of nursing support in the outpatient department.

- **Imaging**

The imaging equipment within the unit would appear to be adequate, and there is a well-trained medical photographer. Given the importance of imaging to the development of services, not least virtual appointments, having good quality photography is essential. Whilst having a medical photographer leading this, it would be advisable to provide most of the service with technicians rather than highly paid professional photographers.

- **Theatre flow and efficiency**

As previously mentioned, there are gross inefficiencies in theatre throughput, not least because of the distance between the eye day case reception area and where surgery is performed, and also the wasteful use of trained nursing staff to accompany the patient to and fro.

Bridgend

The unit in Bridgend appears to function extremely well and has adequate theatre space with twin theatres. It would be well placed to manage high volume cataract surgery. The complexities of the staffing arrangements have been discussed earlier. The eye department is staffed within a relatively new building, although with a lack of future proofing. Converting current office accommodation into clinic rooms would be extremely difficult due to a lack of appropriate pipework for plumbing, which would be essential for standard wash-basins in clinical areas. The deficiencies of semi open-plan clinics have been discussed earlier.

- **Recovery plans**

In the short term, there is an urgent need to establish a plan to recover from the enormous backlog of cataract patients waiting for surgery. The twin theatres in Bridgend are not used exclusively for ophthalmology at the present time, and attempts must be made to regain control of this excellent facility for sole use by the eye department. This would seem to be an excellent site for establishing high volume cataract surgery and potentially could be part of the solution not just for Cwm Taf Morgannwg but for the region. I was not able to see the facility in Merthyr Tydfil, but from my understanding, with appropriate nursing staff support, this could also be a unit that could provide a space for efficient cataract surgery.

There seems to be significant issues with low numbers of cataracts going through the main theatre in the Royal Glamorgan and reports of frequent cancellations. The set

up in this hospital does not lend itself to high volume surgery, but it is not completely impossible if there is the will to analyse the bottlenecks in the current patient flow.

Hywel Dda University Health Board

Overall, the consultant workforce is fragile. The glaucoma service is receiving some virtual support from an oculoplastic trained former colleague who is reviewing patients remotely from another part of the UK. He does not have specific glaucoma training.

Already there seems to be agreement between the clinicians and managers at both Swansea Bay and Hywel Dda for the two departments to be effectively amalgamated and for any future appointments to be made on a joint basis.

It was only possible to visit the Carmarthen site, although services are provided in other hospitals situated throughout the region, most specifically in the hospital in Aberystwyth.

The unit in Aberystwyth functions semi autonomously and also has a very fragile staffing complement. Reportedly, one of the two locums can perform a reasonable cataract list of about 12 patients in a day, whereas the other surgeon will not manage more than 8 in a similar time period. There are, in addition, two substantive middle grades in this facility. From their base hospital they also provide a clinic in the community called the North Road Clinic. This unit has been hit with significant problems during the Covid crisis, and the clean room that they had been using for IVT is no longer available. Access to other clinical areas has also been problematic on this site.

From Aberystwyth, staff provide some services to outlying clinics, one to the north in South Gwynedd and two other clinics within Powys (Llanidloes & Machynlleth). It was suggested that some patients who require surgery on an emergency basis travel from South Gwynedd north to Wrexham, rather than the much closer distance to Aberystwyth.

The main hospital for the region of Hywel Dda is based in Carmarthen. It is in an old building and the facilities are not fit for purpose. Clinic space being taken up by other specialties has also been mentioned. There has been the provision of new outpatient rooms, but these are remote from the main clinic.. Overall, the hospitals seem to have adequate provision of equipment, and in particular there are sufficient OCT devices to cover a wide range of the peripheral clinics. As a result of this, plans for community macula services should be possible. Likewise, there is good involvement of other professions being trained to assist in the smooth running of patient flows. The recent appointment of a highly experienced Nurse Practitioner to coordinate nurse training and technician training is very useful.

A new hospital is being built in Ammanford, and this would allow the possibility of doing cataract surgery for two full days. Recently they have been able to move the IVT out of theatre, and this will assist in greater throughput. There are also facilities in Llanelli

and Pembroke and Cardigan where outreach clinics including a macula service would be possible.

- **Suggested future plans**

The staffing situation for Hywel Dda is extremely serious, and there would seem to be a very limited prospect of future recruitment of more consultant or non-consultant grade staff to this region and its associated hospitals. Conjoined working and unified appointments with the neighbouring health board in Swansea would seem to be the only realistic option. It would be essential in any future job plans/interviews that an acceptance of remote working in peripheral sites would be confirmed. The geography of the region means that it is imperative that some means of providing follow-up for long term conditions such as glaucoma and macula is provided closer to the patients in these peripheral clinic sites.

One-off events such as cataract surgery becomes slightly more problematic. There will be some patients who are prepared to travel for a one-off or, if Immediate Sequential Bilateral Cataract Surgery [ISBCS] is not considered, a single repeat visit for the completion of cataract surgery. However, experience elsewhere would dictate that many elderly patients with co-morbidities are not prepared to undertake arduous journeys even if they are sight restoring. Politically it can be extremely difficult to persuade populations that there is contemplated the withdrawal of yet more services from their area. The importance of some provision of essential services cannot be underestimated. It would therefore seem sensible to maintain a visiting service to regions such as Aberystwyth on a regular basis. These should perform some specialist clinics, but more especially cataract surgery. Experience in the islands of Scotland would suggest that as long as surgery is carried out at least once a month, maintaining appropriate skills in a motivated nursing workforce is possible. In some cases remote sites can actually function more efficiently than the base hospital if cataract surgery is the only procedure that is being carried out. Frequently such staff often have a close working knowledge of the patients and the communities that they come from. There is thus a very strong desire to make sure that they are not inconvenienced in any way.

Whilst appointing a permanent doctor to a remote site such as Aberystwyth can be problematic, if there are sufficient incentives, a visiting service can be seen as being a positive employment benefit. In some parts of the UK, where regular visits from hospital personnel are required, the relevant Health Board makes block bookings to self-catering facilities so that there is the possibility of other family members joining an NHS employee whilst they are at work. Similarly, in NHS Highland where some clinicians must spend many nights away from home, it has recently been agreed that each night away is compensated by two hours in lieu as part of the job plan.

It is recognised that within Hywel Dda there is a significant number of peripheral clinics that will need to be staffed. Careful manpower planning will be required to work out the frequency of visits that would be necessary for each site. Obviously, there are inherent inefficiencies in expecting staff to travel longer distances especially if personnel are increasingly based in the Swansea Bay area rather than Carmarthen. However, this must be balanced against the costs of a failing service and the financial and additional burdens of locum cover. Currently there are extreme delays in many

patients' follow-up, with three months extending to a worst-case scenario of three years. The risk of expensive settlements if patients come to harm by not being treated in a timely fashion is not insignificant. There is currently a backlog of an estimated 8,000 patients who are beyond their dates.

Powys teaching Health Board

A visit to Mid-Wales was not possible and the following description is based on a conversation with the Manager responsible for Eye Services in Powys.

The services to mid-Wales is very different from that provided by other Health Boards in that Powys Teaching Health Board commissions all of their Eye provision from neighbouring authorities. This is mostly from England (Hereford and Shrewsbury) but with some activity provided by Hywel Dda in the North, and Swansea Bay in the South. Currently there are 424 annual session provided by Wye Valley NHS Trust and 24 sessions from Shrewsbury and Telford NHS Trust. Swansea Bay University Health Board provides 24 sessions to Ystradgynlais. From the centre at Aberystwyth, Hywel Dda University Health Board provides 120 sessions per annum to Llanidloes and Machynlleth.

Arrangements with the two English Boards broadly work well and the Service Level Agreement (SLA) is sufficiently beneficial to the non-Welsh players that commitments are adhered to even in the face of local adversity. It is commendable that Cataract surgery and that IVT continued virtually uninterrupted throughout the pandemic. There does not appear to be the long backlog of patients on waiting lists or instances of patients coming to harm that is a feature elsewhere in the country.

Locally there is a very enthusiastic Senior Nurse Manager for Out Patient Development who has been championing the new approaches. A recent innovation is the training of a nurse injector to deliver Intra-vitreal therapy (IVT). The reasons for this being such a late development is not clear, but could be due to the lack of incentive for an external provider to provide significant service re-design. Using Medical staff to inject in the Macula service is extremely expensive and wherever possible is a task that should be delegated to other suitably trained health care providers. The nurse injector is supported by a team of hospital optometrists in South Powys as part of the Powys Teaching Health Board Eye Care strategy. This MDT approach is being developed across Powys with recruitment of further hospital optometrists, eye care nurses and ophthalmic posts. Impressive though it is to have a new nurse injector, it is important that the service does not become dependent on a single injector with this skill. Training of other individuals to ensure that the service can continue uninterrupted should there be annual leave/sickness/redeployment is essential

It is impressive that there has been established a Powys Healthcare Academy. This has the aim of attracting local school leavers to consider a career within the Health Service, with all the associated advantages of recruiting and retaining local staff.
Similar to elsewhere in the country, the lack of sufficient Nursing staff to assist in theatre is a significant issue. If there is a means of interesting young people to gain

exposure to the work of an Eye Department (school leaver open days) and there was a choice of routes into appropriate Health care careers, this could be advantageous.

Clinic provision in North Wales is potentially problematic. Staffing in Aberystwyth is fragile, and has been dependent on long term locums. The equipment available in Macchynleth and Llandrindod may well be in need of significant upgrading to cope with modern health care. However, it appears that this is being addressed. Of concern is that until recently clinics have been run with insufficient equipment to ensure adequate and safe patient examination.

The only significant backlog for the region is for oculoplastics. Reassuringly, there is an adequate system of triage for patients who need urgent management of skin cancer. For the remainder, where treatment is not urgent, it is advised that some form of pathway development might be useful. A photographic clinic, as developed in Newport, is one possibility, and the training of nurse practitioners to perform low complexity surgery is another.

- **Future issues**

Reportedly there is quite a large turnover of staff through the Hereford unit. Whilst there is a degree of permanence within the consultant body, much of the service provision is dependent on short term clinical fellows. Such a lack of consistency inevitably gives a lack of “ownership” for the service with a lack of impetus to drive innovation.

In this regard, a particular problem is going to be the reported lack of enthusiasm regarding the roll out of the Welsh EPR through OpenEyes. This is potentially a serious issue, especially if referral into the service through community optometry is mandated by electronic means.

A further concern is the reported lack of enthusiasm for adopting tele-medicine. Whilst the pandemic has been a horrendous experience for the Health Service, the fact that it has enforced new ways of working is a rare benefit, and it is disappointing not to be able to build on this.

Powys is well catered for with more than adequate theatre facilities at Llandrindod. Overall about 550 cataracts are performed per annum and this is significantly below capacity. Potentially this unit could be used to provide extra capacity for neighbouring Health Boards such as Cwm Taf Morgannwg and Aneurin Bevan. Whilst additional theatres are being envisaged for Abergavenny and services in Merthyr Tydfil restarted, the scale of the backlog is such that all options should be considered. Whilst for some patients an hour’s journey may be beyond what they would be prepared to accept, for others who have had a significant wait, such a journey for a “one event intervention” may well be preferable to yet more delay.

- **Long term plans**

Whilst it is accepted that the geography of Powys is not conducive to the provision of an Eye Service provided by resident medical staff, once it is accepted that there must

be an appropriate SLA with an external resource, it does not matter how this is provided.

If Wales is to move towards the development of large regional centres providing a “Hub and Spoke” approach, then provision of services by neighbouring Welsh units is not impossible.

Annex 3: Acknowledgements

This report would not have been possible without the support of many individuals, in particular I would like to acknowledge the help given by:

Kathy Evans (CEO Royal College of Ophthalmologists) and Declan Flanagan (Vice President Royal College of Ophthalmologists) who gave invaluable advice in drawing up the Terms of Reference for the Review.

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I am totally indebted to all the clinicians and managers who gave so much of their time and energy to meet with me and help me understand the issues that face Ophthalmology in Wales.

Suggested Resources

The Royal College of Ophthalmologists has been pivotal in the advice given to Eye Departments throughout the UK in how to plan for the challenges ahead, and in addition to The Way Forward document (mentioned previously), there are additional documents that should be considered essential reading for any Health Services planners/managers/clinicians.

- Ophthalmic Common Competency Framework https://www.rcophth.ac.uk/professional-resources/new-common-clinical-competency-framework-to-standardise-competences-for-ophthalmic-non-medical-healthcare-professionals/

- Getting it Right First Time https://www.gettingitrightfirsttime.co.uk/surgical-specialty/ophthalmology/

- Cataract Services Workforce planning tool https://www.rcophth.ac.uwp-content/uploads/2021/03/Cataract-Services-Workforce-Guidance-March-2021-1.pdf

In the above, the Royal College of Ophthalmologists has been concentrating on four key areas which must be addressed given the huge number of patients involved. These are cataract, glaucoma, macula (which includes both age-related macular disease and diabetes) and emergency services. Other sub-specialties obviously also have their pressures, but given the immediate risk of sight loss and the demands and expectations that the public have for restoration of sight through operations (cataract surgery) and the reversal of sight loss through macula services, these areas are of particular importance.

Resources on Covid Recovery

The following article: Cataract service redesign in the post-COVID-19 era | British Journal of Ophthalmology (bmj.com) https://bjo.bmj.com/content/105/6/745 is also worthy of attention. This paper discusses the potential problems of rationing and has an analysis of the benefits of techniques such as Immediate Sequential Bilateral Cataract Surgery (ISBCS) as a means of addressing lengthening waiting lists.

Whilst some form of rationing might be tempting in an emergency, it must be remembered that Cataract Surgery is one of the most Cost effective interventions with a welfare gain of £1110 in the first year at a cost of £672 [A cost-benefit analysis of cataract surgery based on the English Longitudinal Survey of Ageing - ScienceDirect] https://www.sciencedirect.com/science/article/abs/pii/S0167629611000610?via%3Dihub

Cataract surgery reduces the risk of falls [impact of first- and second-eye cataract surgery on motor vehicle crashes and associated costs | Age and Ageing | Oxford Academic (oup.com)]
https://academic.oup.com/ageing/article/48/1/128/5108517although the full benefit may not be seen until the patient has had their second eye surgery

[Falls and health status in elderly women following second eye cataract surgery: a randomised controlled trial | Age and Ageing | Oxford Academic (oup.com)] https://academic.oup.com/ageing/article/35/1/66/33525