Service Case Study – external version

NHS Fife Queen Margaret Hospital Ophthalmology Department - Cataract Improvement Project

Background

Queen Margaret Hospital (QMH) is located in Dunfermline, a town of around 50,000 on the outskirts of Edinburgh. The health board, NHS Fife, covers a population of 370,000 over a large rural area with varied geography and several population centres and delivers 120,000 outpatient visits per year. The main acute hospital is the Victoria Hospital in Kirkcaldy, and QMH provides the area's ophthalmology services as well as multiple other clinical services (other outpatient and diagnostic clinics, mental health services and minor injuries, some children's services, ante-natal and post-natal care, sexual health and rehabilitation services). The hospital has had a development programme for upgrading facilities since 2013.

The eye unit sees around 32,000 outpatients per year and performs around 2,700 cataract operations and has 8 consultants (5 FTE), 4 specialty registrars (mainly ST 1-2, and one ST 3-5) and 1 GP registrar. Patients are referred via the national optometry referral scheme, attend a one stop cataract clinic where all pre-operative eye and anaesthetic assessments are conducted and leave with a surgical date. The community optometry referral scheme has run for 15 years with an e-referral form which can be adapted by the local regions from local learning. This is used now by the whole of Scotland and optometrists work under an enhanced GOS service, with some training and an agreed national fee.

There are 2 meetings per year with the optometrists to refine referral criteria and discuss and learn from issues. Optometrists attend theatre lists. There is a 90% conversion rate and an early cataract standardised letter to give advice to those who do not yet need surgery.

Paper health records are used.

How did the development occur?

In 1993, the department had a main outpatient area on the ground floor and a separate ward area for in patients. In 2002 a located cataract suite was added on the first floor, with rooms for cataract pre- and post-operative clinics, pre-operative assessment and biometry, a laser room, and one local anaesthetic theatre with related waiting and recovery areas. General anaesthetic work, which was related to other subspecialty areas and only very occasionally to cataract, was available in main theatres for 2.5 sessions per week.

This was the model until 2016 but, as time passed, the waiting times for the unit gradually increased from 6-8 weeks to 20-22 weeks and there was concern that the national treatment time target of 12 weeks was being breached. For some time, this was addressed through weekend waiting list initiatives and efforts to fill lists empty due to leave but this was not enough. Arrangements were then made to transfer patients for cataract surgery to the Golden Jubilee Hospital (GJH) in Glasgow and this was offered to patients as a choice. For transferred patients, a virtual assessment was arranged at QMH, where patients attending the one stop clinic were worked up by an ophthalmic nurse practitioner and then a virtual video consultation was undertaken in which the patient and nurse could interact via live

video link with a GJH consultant to undertake the final decision making and consenting. However, many patients offered the choice actually preferred to wait and have surgery locally, although the uptake did increased somewhat when transport to and from Glasgow was laid on.

The ophthalmology team morale was adversely affected by these changes, they very much wished to be able to provide a comprehensive service locally and they also had concerns that if clinical work was leaving the department then the unit might continue to contract or be adversely affected more broadly. Perceived risks included:

- Trainees could be removed with loss of local training delivery
- Trainee removal might result in inability to run an on-call rota
- Staff could be lost to other units
- Lack of care available locally for patients
- Loss of status and reputation compared with GJH
- Loss of pride and morale in service.

After approximately two years of concerns building up, and informal conversations, the consultants decided to undertake a facilitated team-building exercise together. It was challenging even to find a date when all could be on site together but eventually it went ahead with most of the consultants present. They agreed about their pride in the service, the risks (as above) and their desire to regain control of their service and be able to deliver the full cataract service on site. They also had prepared by investigating options including exploring international models of ophthalmic theatre delivery which they discussed. They realised that the floor space in their one existing theatre was unusually large and this, together with the surrounding theatre suite area, was big enough to reconfigure for more capacity if they adapted a different model of theatre use. They made the decision to pursue a *Jack and Jill* theatre design (see below) within the existing floor space.

They arranged another meeting, this time including the management team and senior multidisciplinary ophthalmic staff, to discuss this ambition. As part of the hospital development project, some money was available for suitable projects; the management were impressed by the united front of the consultant body and their preparatory work, and agreed this was worth exploring. The continuous improvement team and the full ophthalmology multidisciplinary team were brought on board and project work was undertaken: assessing current and possible pathways; time and motion studies across the whole cataract patient pathway; productivity assessments; filming staff movements and activity during lists with an I-pad (stop motion recording). A further 3 meetings, using time in existing in-service training meetings, ensued to discuss findings, demonstrate evidence for innovative facilities in other units including international units, watch videos of their own and international theatre flows, and discuss plans. Some key findings from this work were:

- Non training consultant-only lists delivered 7 cataract cases
- Trainee lists delivered 6 cases
- Complex patients (e.g. glaucoma co-morbidity) lists delivered 5 cases
- The main delays were around the turnaround times, with an average of 8 mins of empty theatre time between patients, amounting to a potential for 2-3 extra cases per list.

- The surgeon (the most expensive asset) was spending significant time doing little whilst the rest of the staff were generally busy with lots of tasks.

As the meetings developed, “blue sky thinking” and looking to have a vision for the 5 to 10 year future were encouraged to plan the proposed changes. Great efforts were made to keep all the team on board and enthused.

The work was mainly driven by one of the consultant team (not the clinical lead at the time).A proposal was drawn up and the Head of Planned Care (General manager) and team assessed the proposal and agreed this should be supported and taken forward to a more detailed building planning and costing process.

The ophthalmologist lead felt that there was not enough engagement with the ophthalmology team at the start of the process. At the first joint meeting, there was representation from estates, architects and operational planning, but the plan being looked at, which cost around £300K, was not what the ophthalmology team had proposed. It seemed to the ophthalmologists like an option which was cheaper but not the best option.

To plan properly, ensuring all necessary representation was present, 6-weekly meetings commenced with the representatives from the initial meeting and also the ophthalmologist, Senior Charge Nurse for ophthalmology, ophthalmic theatre nurse, head of nursing, (who had previously overseen a theatre transformation elsewhere), and representatives from the infection control team. A plan costing £750K emerged, which was judged not affordable. After further work, accepting some compromises and space constraints, agreement to recycle some existing fittings such as the scrub sink, thinking through noise and confidentiality issues, ensuring airflow was appropriate, and having to agree that the ceiling which was not solid (i.e. particulate) was acceptable and safe, a detailed plan costing £500K was approved. The ceiling issue was very difficult to work through, and the hospital had to agree to call the space “treatment rooms” not “theatres” to gain agreement to proceed. Further work was then needed to plan down to the last detail, in terms of aspects like number of sockets, storage units, sink placement etc. The project team kept the wider ophthalmology team informed of progress and ensured they agreed with key decisions. This process took approximately 1 year and then the build started. Whilst this was happening, space was found in general theatres to maintain productivity, and a private company was used (staffed by NHS consultants) at weekends.

The new Jack and Jill theatres opened and ran their first list in January 2019, 7 months before the UKOA visit.

What is a Jack and Jill theatre?

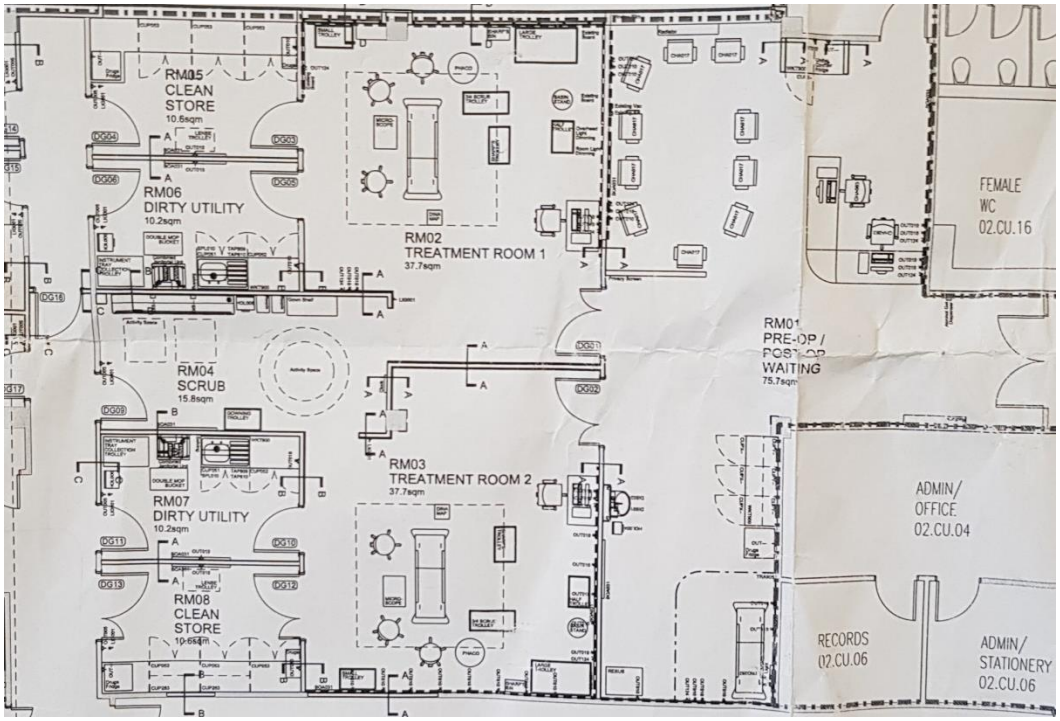
The more common architectural usage of this term is for Jack and Jill bathrooms. A Jack and Jill bathroom is a bathroom shared between two bedrooms, where both bedrooms have a door opening into the same bathroom.

A Jack and Jill theatre is where the scrub or other facilities are shared between two theatres and the theatres have an open connection through the scrub area so that one surgeon can operate within two theatres in a single list. The surgeon can walk without hindrance between the two theatres, each with its own theatre scrub and prep team, to an already prepared patient, minimising surgeon wasted time.

How is the new layout at Fife?

An outline of the floor plan is shown below. There is a waiting area with a reception/nursing desk, and on the right hand side as one enters there are 8-10 chairs for pre-op patients, another chair by the entrance to the theatres for the next patient to go in, and another couple of chairs on the left near the entrance/exit door labelled discharge chairs. The chairs are colour coded to distinguish pre- and post-op. On the left is a small area, with a curtain which can be pulled across to divide it off, containing a couch and resus equipment, and with room to get patients onto and off a surgical trolley. On the right is a combined nursing office/area for confidential discussions/slit lamp room.

Opposite the nursing station are the two theatre (“treatment room”) doors which open directly into the two operating rooms. Each operating room is large and fully equipped for cataract surgery with a Stryker surgical trolley, appropriate desk space and IT equipment. The theatres are divided, but not completely at one end, by a partition wall which has a gap at the far end to allow direct movement between the two theatres through the scrub area with no door or obstruction. The theatre space is open to a large shared scrub space. Each theatre has its own separate clean store room and dirty utility room. There is no separate clean room big enough for trolleys to be laid out; although this was desired there was not enough space. Trolleys are laid out in the theatre room, with no advance preparation of more than 1 trolley.



How is the space used?

Currently most lists are run in the traditional way, in which only one of the two theatres is used. These are staffed by 3-4 staff, usually 3 (2 scrub nurses, 1 non registered Health Care Support Work [HCSW] or Nursing Auxiliary [NA] as runner, occasionally 2 runners) and there are 2 ophthalmic trained nurses who admit, prepare and administer drops and discharge. There is a consultant surgeon and usually a trainee. Numbers are as they were before the changed facilities.

There are 4 Jack and Jill (J&J) sessions which run during the week. Usually the space is used for one surgeon to move between the two theatres, but sometimes can be used for a two surgeon list working in parallel, if there is a senior trainee. Some consultants are willing to have more junior trainees on these lists.

For J&J lists, there are 7 theatre staff ideally but most often 6. For each theatre there are usually 2 scrub nurses and 1 runner. There are usually 10 patients on the list and patients are screened to be low risk and suitable for high volume pathways; in some cases where 1-2 complex patients were on the list, the list was reduced to 9 patients. The one stop clinic uses an agreed risk stratification tool to grade patients into one of 4 categories of complexity and suitability for high volume to identify the straightforward patients for the lists. Routine hand holding by theatre staff has been abandoned to allow staff to undertake other tasks, but is still offered to all patients.

Patients' arrival is staggered to an extent, with 7-8 patients arriving at 8am and 2-3 patients at 10am. Surgeons will view the notes early in the morning or even the night before. They will then walk around the patients seated in the pre-op chairs and mark the eye and briefly reconfirm consent or they may take consent in some second eye cases where this has not been done before the day of surgery. Some

consultants do undertake consent for both eyes, where both eyes clearly require surgery, at the first one stop clinic but this is variable between consultants. The surgeon does not routinely examine the eye on the day of surgery to ensure optimum time efficiency and early start times, and the surgeons do trust each other's preop assessment which is supported by a useful clearly laid out cataract outpatient assessment proforma. It would be possible to have a handheld slit lamp available for an examination of some or all of the eyes as the surgeon go around.

The booking system generates one long theatre list. Issues which affect the list order will have been highlighted at the one stop clinic on the waiting list card e.g. MRSA status, mobility, dementia, but this is not yet reliably determining the list order accurately and not separating the lists into two theatre allocations, so that there is a lot of activity to organise list order the night before or on the morning of the list. This may be partly due to limitations of the scheduling system for an unusual theatre usage and partly because secretaries undertake the list bookings. A trained theatre co-ordinator could allow more accurate scheduling before the day. In practice, the night before the list, the ophthalmic trained ward nurses assess the patient notes, recheck the IT system for infection status which might have changed since listing, and record issues on the SBAR (Situation Background, Assessment, Recommendations) form. They provisionally plan the next day's list order. When the patients arrive, the outpatient clinic staff come over and join the ward staff in order to process all the patients rapidly, and they reassess the notes and the status of the patient in terms of their mobility, how they look, how they feel, to identify two *golden patients*, that is a suitable straightforward first patient for each of the two theatres to get started on time. The theatre system is updated at 8.30am to create the two theatre lists. Some surgeons like to maintain their one list printout in order, so they can see the overall flow, and highlight in colours which theatre for each and annotate the list with issues.

Patients are admitted and local anaesthetic and iodine drops are instilled in the waiting area. As with most ophthalmic pre-op areas, most checks are undertaken in a shared area.

Checks and their documentation.

The WHO checklist culture is excellent, with full attention of the whole team to the process, careful checking and recording of checks. In particular, the sign out, which often receives less than full attention in cataract surgery, was undertaken very well indeed.

The biometry output is currently on 4 separate yellow paper sheets for checking – one for the IOL, one for the keratometry, AC depth etc, and two for the B scans. This makes things difficult for the surgeon preoperatively and makes the timeout check very difficult indeed. As staff change quite a lot and are not dedicated to ophthalmology, there is limited understanding of biometry and IOLs.

At the moment, there is a plethora of paper forms and documents being used with multiple checks, some of which are not relevant to ophthalmology or are repeated unnecessarily too often. Timeout (the "pause") is excellent in terms of staff commitment but is currently very difficult with multiple pieces of paper having to be checked at once whilst also holding and ticking the checklist form. There are papers strewn on top of the patient whilst attempting this. There is a good awareness of this issue and work is ongoing to create a whole pathway booklet and there are plans to work with managers and nursing leads to address the staffing consistency and training.

Another aspect noted was that, similar to Sunderland, eye shields are not used routinely.

How are things going?

There has been general acceptance and good reception of this innovation by ophthalmic staff, patients and managers, and there has been positive media attention from the local media (television, radio, and press), the BBC and even some European media. Patients are now all receiving their cataract surgery locally.

Consultants have all tried the new J&J system and 5 (out of 8) are doing this regularly. The feedback was that they do have to be more careful to keep an eye on the clock and ensure they are keeping to time, but they and their trainees like it. It was felt that it was crucial to start on time; therefore mornings were better, as afternoon list starts could be impacted by late running morning clinics. In addition, the preparation of the patients where the outpatient staff comes across to help is not possible for afternoon sessions.

Although there are usually 10 patients on the list, some of the surgeons felt 12 low risk cases would be comfortably achievable. It is quite intensive for the ward staff before the list starts to ensure all are ready to go but, once started, the lists did not feel rushed in any way and there was a feeling of calm control.

The theatre staff seem comfortable working in the new model and have plenty of time to undertake their tasks for one surgeon lists. They find that two surgeon training lists, with a senior trainee operating simultaneously with the consultant, can feel more pressured. Some consultants feel more junior trainees can be incorporated onto the high volume Jack and Jill lists, by getting numbers through rapidly and creating time for the trainee to then undertake surgery, but not everyone is comfortable with training on J&J lists.

Both theatre rooms are still generously sized and nothing felt cramped or undersized. There was no feeling of a lack of confidentiality or privacy, noise issues or disturbance from one theatre to the other.

What next?

The team are keen to increase their usage of the innovative theatre lists but also to use the work so far as a basis to continue to innovate and improve quality and efficiency of the service and have many ideas and plans for how this can happen.

They are keen to pursue:

Joined up flexible trained nursing team – theatre nurses are now part of the theatre structure, not the ophthalmology team. This creates issues. There are some theatre staff who mainly do ophthalmology but for many there is a 6 monthly rotation, meaning that skills are not retained and there is no consistent team. There is good evidence that, for cataracts and similar repetitive high volume surgery, much greater efficiency and safety can be achieved by a consistent well trained and experienced theatre team. The College recommends this.

The desire is to have a flexible nursing staff all line managed under the ophthalmology team, able to work in cataract clinics, theatre and the "ward" for full understanding of the pathway, a cohesive team focused on improvement, and flexibility for staff utilisation. This underpins the Sunderland model, widely regarded as one of the best in the UK.

More advanced nurse practice and non-medical consenting. There is an advanced cataract nurse practitioner who has for many years been providing care both in medically led clinics and in independent clinics. This nurse was also for many years a successful nurse consenter but the hospital have now introduced a requirement for non-medical consenters to have a masters level qualification and she has had to stop. The team would like to be able to restore nonmedical consenting for ophthalmic procedures and to ensure patients are consented before the day of surgery for all cases. They would also like to expand their non-medical advanced practice across the ophthalmology service for staff recruitment and retention, efficiency and a better patient experience. These are well established in many eye units across the UK, are particularly important to expand as the demand for ophthalmology soars beyond existing capacity, and most units do not require masters level training to undertake this.

Cataract pathway surgical booklet. The team are currently revising all the paperwork and trying to incorporate into an efficient booklet document which brings all the necessary documentation together, removes unnecessary or overly repeated or non ophthalmic checks, and supports improved ability to undertake checks by making the relevant forms all visible at once by using biometry papers that fold out and into the booklet. This is quite a big task but the prototype template is developing well. In addition, they are keen to purse a supportive patient information video on the process and on risks and benefits/decisions in cataract surgery for example available on a tablet screen in clinic or on the ward area.

What underlies their success?

The unit provides an example of how, faced with adversity and a difficult situation, a joined up approach involving all the ophthalmology team and led by a committed consultant body speaking with one voice, could obtain support from the hospital leaders to deliver a major improvement for patients.

The consultants were able to see the wider risks of a situation where they were losing work, see that it needed to be taken seriously, band together and agree a consistent vision for the sort of service they wanted in the longer term. They involved the whole ophthalmology team and made good links with senior hospital leaders, looked externally at both UK and international examples of innovative practice for options and possibilities, and encouraged everyone to be creative in their thinking. Representatives of the multidisciplinary ophthalmic team were also prepared to do the regular hard and detailed work to obtain the evidence and data they needed to understand the current service and its difficulties/opportunities to improve, and then to plan, design and build the new facility and the underlying processes to use it. They worked hard to ensure the wider ophthalmic staff were kept up to date and consulted about key decisions. When major impediments arose, they were determined in their approach to work with the relevant teams (e.g. infection control) until they found a solution.

Key to making good use of their new facilities in high volume lists has been:

- Flexibility of surgeons
- Ability of consultant surgeons to compromise individualism and agree consistent approaches to assessment and treatment
- Willingness of all staff to work differently
- Gradual introduction of new pathway/lists
- Continuous learning and changes to adapt and improve e.g. plans for new paperwork
- Undertaking risk stratification of patients (with an agreed methodology and recording form) and directing only suitable low risk patients to high volume lists
- Standardised clear preoperative assessment paperwork
- Limited training initially on the high volume lists
- Major efforts to start on time
- Golden patient first on the list
- Preparation by surgeon and nurses on the day before the list

The ophthalmology team are now using this morale boosting success to create a basis for further service transformation and are determined to become the “Sunderland of Scotland”.

Mrs Melanie Hingorani FRCOphth

Consultant Ophthalmologist, Moorfields Eye Hospital

Chair UK Ophthalmology Alliance (UKOA)

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