



## The 'CAMP' Model – A Surgeon Led Quality Improvement Project for Collaborative Action to Maximize Productivity

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### Abstract

**Background:** An ever growing and long surgical waiting list is a challenge within the NHS. Long waiting times can result in complications of the condition, more challenging operations and additional procedures. All of which implies reduced quality of life for patients and increased strain on NHS finances. On an average there are about 400 patients on the waiting list with more than half of them for groin hernia surgeries and Cholecystectomies. The median waiting time in our trust is 26 weeks and three patients every year breach the 52 weeks' timeline, flagging a never event, with negative implications for the trust.

**Methods:** The CAMP model proposed a dedicated pathway with enhanced patient involvement through patient information sessions and a team building with better staff involvement. The focused pathway helped improve productivity and enhance patient experience. It helped create a parallel work stream with experienced non-consultant surgeons, stepping-up to free up consultants to attend to the pressing cancer and complex cases.

**Results:** The CAMP resulted in a 40% improvement in efficiency. With better ratio per list/session, it made care more cost-effective. It also improved the work environment amongst staff and rapport with patients. The patient-peer support and greater involvement meant better overall experience too. This supportive environment also has the potential for theme based learning and training.

**Conclusion:** The 'CAMP' is a transferable and adaptable model. It impacts not just long waiting lists, but also improves productivity with definite cost benefits, team-building, patient experience and creates a great opportunity to train too.

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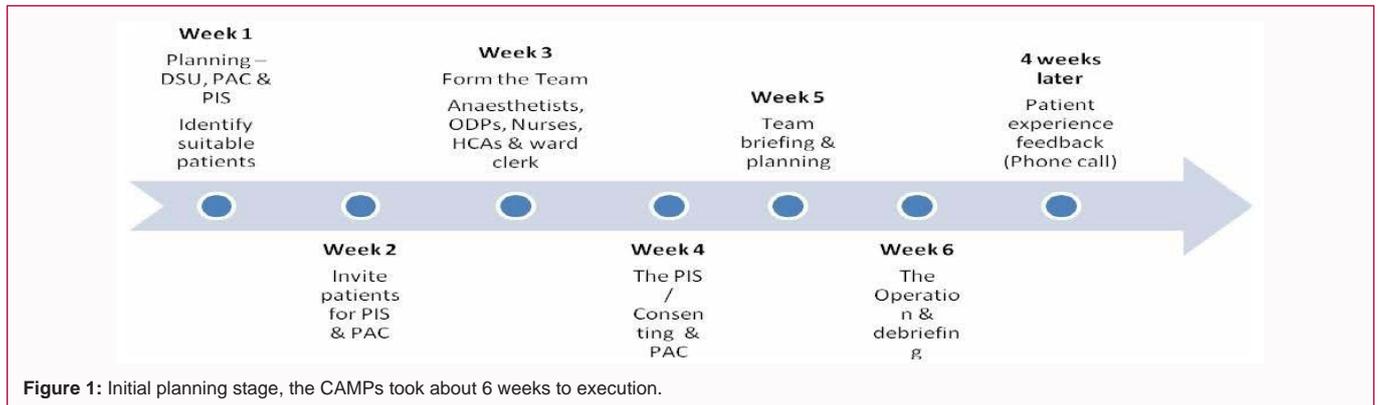
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### Introduction

The NHS is amongst the most utilized public services in the UK, with most surgery departments plagued by long waiting lists [1]. These lists are inundated with general surgical procedures with inguinal hernias and Cholecystectomies being the most common. With cancers getting priority and consultants required for complex cases, other benign cases just have to wait. The challenge and the pressure to keep with-in the Referral to Treatment (RTT) targets are immense and almost impossible, with a limited number of consultants available to address the ever growing waiting lists. This is especially the case in large tertiary centers, which are the regional referral centers. On an average there are more than 400 patients on the waiting list, in our trust, which is a university hospital and a regional referral centre. More than half of these consist of groin hernias and Cholecystectomies. With a RTT of 18 weeks which often gets breached the median waiting time for groin hernias and laparoscopic Cholecystectomies is around 26 weeks (6.5 months). There are usually about 3 patients that breach the 52 week target on an average every year [2].

However, within this problem lies the solution too. Appropriately chosen cases can be delegated to senior non-consultant surgeons, helping the consultants focus on the complex cases. This approach also helps the non-consultant colleagues to step up their responsibility and contribute significantly to the team to improve the overall productivity.

The CAMP or Collaborative Action to Maximize Productivity model is a team-effort aimed at tackling long waiting lists amongst surgical departments. It also creates a dedicated pathway to address common general surgical procedures, which don't get enough attention due the more serious and complex cases that they 'compete' with on the waiting list. The three CAMPS conducted over 5 months, have demonstrated a model for improvement and a pattern for change. Lessons learnt helped improve efficiency and productivity, in addition to improved patient involvement and experience; with improved team-spirit and morale amongst staff.



**Table 1:** The three CAMPs between December 18 and March 19.

CAMPs	Theatres	Theme	No. of Theatre sessions	No. of patients operated	Improvement in no. of cases	Grade of Surgeon
CAMP1 (Dec 18)	DSU	Open Inguinal Hernioplasties	4	11	3	Fellows/SAS
CAMP2 (Mar 19)	DSU	Laparoscopic Cholecystectomies	4	10	2	Fellows
CAMP3 (Apr19)	MOT	Open Inguinal Hernioplasties	3.5	11	4	Sr. Registrar

Thought the setting of the problem is from with-in the NHS, these issues are universal. Hence, the lessons learnt from this effort are transferable too.

**Methods**

The CAMP initiative modeled an improvement in the patient pathway and overall efficiency by interventions as listed (SPELL)-

1. Selection- Appropriate patients and the appropriate procedure was selected (Open inguinal hernia/laparoscopic Cholecystectomy) for the day surgery unit-DSU.
2. Preparation- Pre-operative patient information and consenting session (PIS) with the Pre-op Anesthetic Checks (PAC) were done at the same day, to minimize patient visits.
3. Execution- Team formation was led by non-consultant surgeons, supervised by consultant surgeon and supported by anesthetists and supporting staff (Nurses, Operating department practitioners, Health-care assistants and Administrative staff). The team was kept well-informed for the smooth execution of the CAMP.
4. Listen and Learn- Regular feedbacks at every stage, with a debriefing at the end of the day from the team, helped form a loop of learning from feedback and implementing improvements.

From the initial planning stage, the CAMPs took about 6 weeks to execution. This success of the process is in team-building, led by the surgeon. It offers a great opportunity to collaborate with different levels of staff, from administrative to HCAs. Getting other consultant surgeons on board is crucial, as they will have to take responsibility for the process, overseeing the execution and managing post-op issues if any (Figure 1).

The impact of the CAMPs was recorded by the fall in waiting times, ratio per list and patient/staff feedback surveys. The data from the feedback was analyzed to identify areas of improvement for the future CAMPs.

The concept and the processes were documented and reported in line with the Standards for Quality Improvement Reporting Excellence (SQUIRE) criteria.

**Results**

The impact of the CAMP was many fold, many intentional and some unintentional too.

1. **Waiting lists:** The three CAMPs between December 18 and March 19, operated upon 32 patients over 11 sessions (1 session = 4 h), viz. 3 patients per session. This brought about a 40% increase in the overall productivity (Table 1).
2. **Theatre work-flow:** A common theme was adopted for the day, either Cholecystectomies or hernias. All the similar sided hernias were put into a theatre. All these simple measures helped to improve work-flow with minimal errors and maximal efficiency.
3. **Patient involvement:** The patient information and consenting session, helped to build patient confidence and rapport. The peer support formed between them, was a huge added benefit. As they now came on the day of the CAMP to already familiar surgeons and fellow patients. Post-op feedback by phone 6 to 8 weeks post-op reinforced the rapport and improved levels of satisfaction and confidence in the model (100%) as documented by the feedback.
4. **Team building:** The engagement of surgeons (non-consultant grades) and anesthetists, with support staff (nurses, ODPs, HCAs, administrative staff), through the planning and execution of the CAMP developed a team-spirit. This gave the ‘team’ a sense of ownership and boosted their morale. The greater purpose and cause, made more than 95% of the staff report a greater level of job-satisfaction on the feedback.
5. **Cost-effectiveness:** The improved efficiency and reduced operating times between patients, improved the turn over which translated into more effective use of resources. The DSU was the most cost effective place to operate on inguinal hernias (Table 2).
6. **Training:** The single themed operating day with the right choice of patients also provided a great opportunity to train juniors, as was demonstrated by Hernia CAMP-2.
7. **Adaptability:** The model has demonstrated the ability to work as a system, rather than just for a particular procedure. Between

**Table 2:** The improved efficiency and reduced operating times between patients.

Category	Site	Cost (GBP-Average)	Income (GBP-Average)	Theatre time (Minutes-mean)	Length of Stay (Days- mean)
Elective	MOT (30%)	3222	1299	65	1
	DSU (50%)	2465	1399	65	0
Emergency	MOT (20%)	4004	2230	88	2

open inguinal hernias and laparoscopic Cholecystectomies, it has demonstrated a transferable set of principles to adapt.

**8. Morbidity and mortality:** The CAMPs demonstrated a safe model, with enhanced features of patient safety with the theme-base and appropriate patient selection. We also clubbed all the same sided hernia operations into one theatre, when possible to reduce errors. The only morbidity reported was a umbilical port-site collection post-laparoscopic Cholecystectomy, which was drained under GA (Clavien-Dindo grade IIIB). There was no mortality reported.

## Discussion

Every organization has its own system and workflow pattern. These workflow patterns evolve by interactions within the system. Every conflict and complexity that arises helps shape the future of the pattern. At the same time, there are also patterns that can be designed based on priorities and local needs. These evolve with integration and interaction with the pre-existing systems [3]. The CAMP model provides one such framework to improvise, evolve and improve. The impact is multi-fold on both the providers and receivers of care.

Though surgeon-led, coordination between a multidisciplinary team is crucial. The nurses and support staff are vital to the success of this model, as they hugely impact the execution and overall quality of care [4]. Irrespective of the size of the organization and the process involved, clear communication is crucial. ‘Team-building’ is at the crux of these processes. The cycle of surgical process modeling and analysis paves the way for further refinement of processes [5].

The hernia ‘CAMP’ demonstrated a model for improvement. The hernia CAMP model was later adapted to laparoscopic Cholecystectomies with success. With similar adaptations to local needs, organizations can create their own solutions for their local problems. Lessons learnt from them will guide future CAMPs. It needs a team of motivated people to lead and continually improvise based on the local circumstances.

The challenges in the success of the process are to get both consultants and the non-consultant surgeons to subscribe to it and cooperate through it. It can be a win-win on either side, depending on perspectives.

The concept of camps is common in Asia and Africa, where a team arrives to conduct one with hundreds of patients. This is made possible by the local system, which is able to support such episodes, with minimal red tape and documentation. Within the NHS however, due to the rigid framework and systems there seem to be a lot more

barriers to tackle such numbers and this approach. The adaptation of this approach within the NHS needs its own modifications. The CAMP model is an inspired adaptation of these camps. This structured productivity model is an effort to help the NHS cope with its ever-growing demand. Though set in a tertiary NHS teaching hospital, these lessons are transferable and adaptable into any organization, despite its limitations.

## Conclusion

The CAMP model offers a versatile pathway to tackle the ever-growing waiting lists for benign surgical procedures. It helps improve focus, morale and patient experience with a well concerted pathway.

Quality improvement initiatives like this are opportunities for non-consultant and consultant surgeons to collaborate beyond their own departments; and provide theme-based training.

The CAMP model is transferable between procedures and adaptable for DSU settings with the appropriate expertise; the DSU being most cost-effective and appropriate for logistical reasons too.

Regular need-based CAMPs with improvements made based on previous feedbacks, will lead to better processes of enhanced productivity. An environment of collaboration and ownership is the need of the hour within the NHS.

Recourses are limited universally and any model to improve efficiency, tailored to the local systems is the creative challenge posed to us in healthcare.

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