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## Audit

### How audit can help with career planning



#### What is an audit?

A clinical audit is an ongoing cycle of continuous improvement used in healthcare to compare current practice with guidelines of good practice.

The official definition written by NICE in 2002 is:

*'Clinical audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Aspects of the structure, processes, and outcomes of care are selected and systematically evaluated against explicit criteria. Where indicated, changes are implemented at an individual, team, or service level and further monitoring is used to confirm improvement in healthcare delivery.'*

#### Why are audits important?

Audits form part of the clinical governance, providing a tool for assessing whether patients are receiving the best quality of care.

We asked two foundation doctors, Dr Kyle Stewart and Dr Pippa Woothipoom, who work for the South Devon Healthcare NHS Foundation Trust, the question: Why do audits? Here is their response:

*'There are a number of good reasons to do audits. Performing an audit shows you are motivated to make change and are willing to work outside of your designated duties. This looks great on your CV. A complete audit cycle develops various skills such as brainstorming, planning, communication, data interpretation, data analysis and presenting, a selection which we use every day in our clinical work. If your audit actually does bring about positive change then you know it was your initial input which has caused this to happen, and this is very rewarding.'*

#### At what stage can you start thinking about them?

You can start to think about audits during the clinical years of medical school. Carrying out an audit at this stage will be beneficial for your application to the foundation programme, in that you will gain some points if you are able to publish the results. You should also have more time to take part in the audit compared to when you start work as a foundation doctor.

Audit is now one of the requirements for completing your foundation years. You are required to do at least one audit per year for end of year sign-off. At specialty interview you will often be asked a question about audit.

#### How carrying out an audit can relate to career planning

First you can look at the person specifications of the career pathways you are considering.

- Doing an audit will look good on your CV, it will show commitment to specialty if it is in area you want to apply for.
- It can be a way of networking and getting to know more senior clinicians in that specialty field.
- If you are still undecided on an area of medicine it could also be a way of exploring that specialty.
- You could also consider carrying out a more general audit e.g. on the on-call practices at your hospital (see our case-study of an audit below).
- At interviews into specialty training you may be asked questions such as:
  - Why do you think the clinical audit is important?

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- What is the difference between audit and research?
- What is clinical governance?

Therefore it is important that you have some examples to talk about and are clear about the various definitions of audit, research and clinical governance. By no means are you expected to learn the official definition off by heart, but you should be able to briefly explain what they mean in your own words.

### How do you start carrying one out?

Below is an indication of some of the ways you can start carrying out an audit:

- Many people take the initiative to find out for themselves what audits are being carried out and whether they can volunteer to work on them.

Dr Kyle Stewart and Dr Pippa Woothipoom, foundation doctors comment that:

*'It is often better not to think about which audits to do, but rather wait until you come across something which you think needs improving and that you have an interest in. This will often keep you motivated enough to see it through to the end and not cut corners. Quite often, people who just pick a topic out of the air don't have a good understanding of that topic or it is in an area which has been audited before.'*

- There is an audit committee in nearly every hospital, run by consultants. You can take an original idea to them to get it approved.
- Some hospital departments have an audit co-ordinator who has projects that need to be done and are delighted to give them to trainees (or students).
- Some Royal Colleges, for example the Royal College of Anaesthetists have a really useful [audit recipe book](#). Using it can make the task seem less daunting.
- There are also some national audit projects that are often organised by medical facilities and societies.
- You can find out about current guidelines (these could be NICE guidelines, or your those written by your local hospital or NHS Trust).

### Further Advice

Dr Kyle Stewart and Dr Pippa Woothipoom give some further advice on a couple more questions that we asked them:

#### What makes a good audit topic?

*'There are a number of factors to consider:*

- *You should ideally be interested in the audit topic*
- *Try and audit something that hasn't been done before, if it is original it is more likely to be noticed*
- *Always audit a worthwhile topic and one which you feel needs doing, ideally one which affects a lot of patients / staff*
- *Choose an audit topic which has a lot of data, your results will be more reliable and more robust the more you have.*
- *Do an audit which is quantifiable i.e. you can display results as figures to present and use as a standard for future audits*
- *Make sure you can actually make a difference, i.e. auditing the number of cars and car parking spaces may be interesting, but unless you can convince managers to build a new car park, it may not be particularly useful*
- *Always gain permission from the relevant governing bodies to access any information you might need.'*

#### What are the steps involved in doing an audit?

1. *'Identify a topic – use the pointers above to identify an appropriate audit topic*
2. *Set a standard – use statements to set limits on what you feel is acceptable within your audit i.e. 90% of patients admitted to EAU should have obs done within an hour*
3. *Data collection - This will vary greatly between audits and may involve conducting surveys through questionnaires or analysing archived information on previous patients for example.*
4. *Data analysis – collate your data and find trends. Try and present data graphically or in tables. Visual representations are always easier to interpret than raw data*
5. *Has your standard been achieved?*
  - *If it has then fantastic but it is possible that this audit may not have needed to be done.*
  - *If not, then why not? Try and find the system failure which has caused this*
6. *Implement change. Whatever the system failure was try and improve it, this may be for example by changing processes or educating specific group*

7. Re-audit. Allow your change to be integrated into everyday practice and re-audit. Again, the more numbers you have for the re-audit, the more likely it is that your changes made the difference.

8. Present your results to the relevant supervisors showing how you made change. It may be that your interventions can be incorporated into other areas of the hospital and can open the door for you or others to do future audits.

9. Feel satisfied that you have made an improvement and your CV is boosted!

### Potential pitfalls or considerations

What can become time-consuming is the fact that you often have to get permission from the NHS Trust and from patients in order for you to use their data.

- If you are only on a short placement, you may not be able to finish the audit or close the loop on it.
- If you are working on an audit with a group of people, you may be reliant on those others to finish it.
- You may feel that you are being treated as a 'data-collector' by more senior clinicians.

### Case-study

#### Introduction

This case-study was submitted to us by two foundation doctors, Dr Kyle Stewart and Dr Pippa Woothipoom, who work for the South Devon Healthcare NHS Foundation Trust:

Torbay Hospital in South Devon uses a computer program called Infoflex to display jobs for the on-call teams.

During out of hours, nurses can phone main reception with details of the patient, job and ward which is then displayed on Infoflex for the on-call teams to complete.

It was recognised by the current cohort of FY1 doctors that many of the jobs added to the on-call Infoflex job list could have been dealt with by the patient's team during the day. Leaving these tasks to the on-call team leaves less time for both acute and scheduled reviews out of hours. It is therefore not appropriate to leave a backlog of ward tasks for an on-call team to complete.

This audit is based on the job list for the FY1 doctors only. During a standard weekday there is one medical FY1 doctor who covers the ward from 5pm until 11.30pm and one surgical FY1 doctor who covers the ward between 5pm and 10.30pm. During a standard weekend day there are three medical doctors (9am-5pm, 10.30am-10.30pm and 11.30am-11.30pm). On the surgical side during a weekend day shift there are two doctors (9am-6pm and 3.30pm-10.30pm)

#### Audit description and setting the standard

This audit was designed to quantify the jobs FY1 doctors at Torbay Hospital are asked to complete out of hours, with particular focus on how many of these jobs were left over from the day team. As there will be occasions when patients deteriorate or there are unexpected events on the ward later in the day which run into out of hours, an allowance has been made. The standard set was:

Ward jobs left over from the day should take up no more than 10% of the F1s on-call job list.

#### Method

All 2844 jobs put on the FY1 Infoflex job list for the month of January 2011 were taken from the Infoflex archive. Each job was designated a code based on its description from the nursing staff. In total 20 different job description codes were needed. This coding system allowed all the jobs to be sorted and grouped for counting.

The data was separated into job totals for medical teams, surgical teams, weekdays and weekends. An example is shown below of how the coding system works. Hospital numbers have been anonymised throughout. The codes are as follows: AR = acute review, rv bloods = review bloods, px fluids = prescribe fluids, rv scan = review scan.

Hospital Number	Date & Time Task Requested	Ward #	Job Code	Further Task Information	Calculation of Who To Complete Task for Worklists
Xxxxx	1/14/11 21:26	Turner	AR	Temp up this pt is neutropenic	Ward F1 Medical
Xxxxx	01/06/2011 17:22	Midgley	rv bloods	Please review bloods	Ward F1 Medical

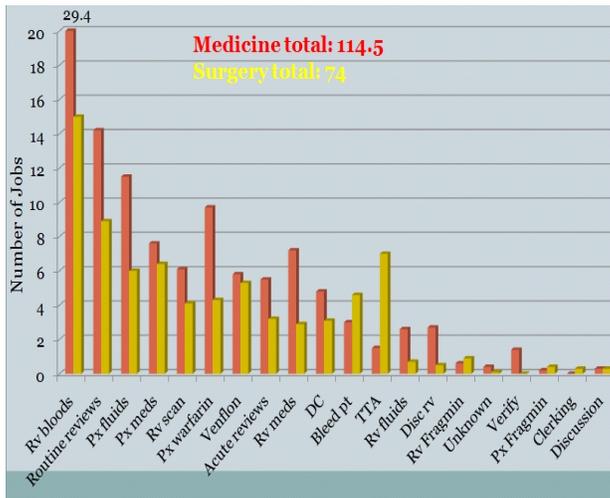
Xxxxx	1/21/11 23:11	Turner	px fluids	PX-IV Fluids	Ward F1 Medical
Xxxxx	1/25/11 7:18	Allerton	rv scan	please review chest x ray	Ward F1 Medical

**Results**

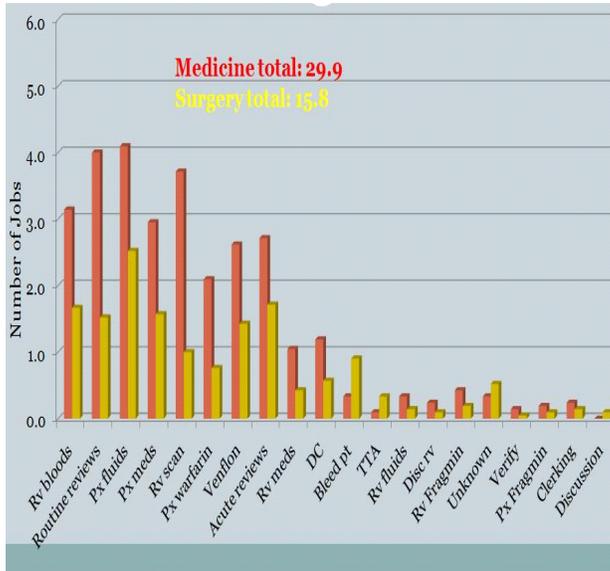
A breakdown of the total number of each job type added to Infoflex for FY1s during the month of January 2011 is shown below.

Breakdown of the 2844 jobs put on the FY1 Infoflex job list in January 2011							
Review bloods	545	Prescribe warfarin	200	Bleed pt	102	Unknown	23
Routine reviews	347	Venflon	196	TTA	94	Verify	18
Prescribe fluids	314	Acute reviews	180	Review fluids	43	Prescribe Fragmin	12
Prescribe meds	235	Review meds	132	Discharge review	39	Clerking	11
Review scan	201	Drug Chart	116	Review Fragmin	28	Discussion	8

**Graph 1 - Average Job Breakdown For Weekend Day On-call:**



**Graph 2: Average Job Breakdown For Weekday On-call:**



**Discussion**

It was found that a large proportion of the following jobs could have been completed

during the day:

1. Reviewing bloods
2. Prescribing fluids
3. Prescribing warfarin
4. Amending / re-writing drug charts
5. TTAs
6. Bleeding patients

As for the other jobs for FY1 doctors, they are either less avoidable or account for a very small proportion of the total workload.

It was calculated that these "preventable" jobs accounted for 40% of weekday total and 53% of weekend total, over four times higher than the standard set of 10%. Leaving this many jobs for an on-call team allows less time for acute patient reviews. It also takes longer for the on-call team to complete ward tasks as they are not familiar with the history of many of the patients.

With improved organisation on the wards these figures could be improved. For example, patients should be bled early on a morning allowing warfarin to be prescribed in a timely fashion. For those patients who the phlebotomists are unable to bleed, there should be a system to alert the doctors or nurses allowing it to be dealt with earlier in the day. Improving a process as simple as bleeding patients would greatly reduce the number of warfarin prescriptions and blood reviews that are left for the on-call team.

The issue of reviewing bloods is particularly pertinent in the weekend shifts where the surgical team have to check an average of 15 bloods and the medical team check almost 30 in one shift. Many of these are routine bloods in stable patients who could have been bled on a Friday and then a Monday to take the stress off the on-call team.

Naturally, some patients will require weekend bloods, for example patients who are warfarin loading requiring INRs and warfarin prescriptions on a daily basis. More commonly, out of hours bloods are needed for patients who deteriorate in the afternoon or sick patients requiring daily bloods over a weekend. In these situations it is completely acceptable to arrange further blood tests or investigations and ask the night team to chase them. This is the type of work the on-call team should be involved with and is the reason a 10% cushion has been allowed.

Prescribing fluids is one of the most common jobs for the FY1 doctors in this audit and during weekdays is almost totally avoidable. During a weekday, fluid should be prescribed during the day to last through the night or there should be a clear plan in the notes for giving or stopping fluids which nursing staff can follow. As an on-call doctor, prescribing fluids for a patient you do not know means checking renal function and electrolyte balance, cardiac function, hydration status and other co-morbidities. It also often involves cannulation, turning what would be a simple job for the day team into an in-depth patient assessment, costing valuable time.

The most inexcusable of all jobs left for on-call teams is by far writing discharge summaries and re-writing drug charts. Even on wards with a high turnover of patients discharge summaries should be prepped throughout the admission, allowing them to be amended, signed and printed at the end of the admission. Asking an on-call doctor to write a discharge summary for a patient they have never met can be dangerous. In a pressured environment, trawling through a patient's notes to write a summary of the admission is time-consuming and can lead to omissions from the discharge summary which could affect subsequent care.

As for drug charts, they should be looked at on every ward round as well as during drug rounds by the nursing staff. If a chart is due to expire over the weekend, it should be re-written by the day team in anticipation. Re-writing a drug chart is not an acceptable job for an on-call doctor. Amending drug charts often involves writing a start date or circling a time to give the medication on an incomplete prescription. Again, if the chart is being properly scrutinised on a ward round as well as numerous drug rounds this should be picked up almost immediately.

The issue of inserting venflons and bleeding patients is a contentious issue at Torbay Hospital. Often, there are dedicated HCAs to perform these procedures and take the pressure off the on-call team. When these HCAs are not working, some ward nurses and HCAs will perform them, asking for a doctor's help only if they fail after several attempts. Other nurses and HCAs on the ward are trained in phlebotomy and cannulation but do not routinely practice the skills, instead asking the doctors to do them as they feel "de-skilled". There are also some who feel that phlebotomy and cannulation should be the job of a doctor only. The number of cannulas and requests to bleed patients shows huge variation between wards depending on the nurses present. Inevitably there will always be cannulas to be inserted out of hours, either as first time cannulas or as replacements for others that have issued, fallen out, become infected or those that have been in for 72 hours. Similarly bloods will always need to be taken out of hours, either planned or during acute / routine reviews. The issue of whether venflons or bloods should be left to the doctors remains unresolved.

**Conclusions**

Good patient care involves completing all tasks during the day as well as forecasting potential issues overnight or through the weekend and acting on them if possible during the working day.

Half of the workload for FY1 doctors is taken up by jobs which could have been dealt with by the day team. These include reviewing bloods, prescribing fluids, prescribing warfarins, amending / re-writing drug charts, TTAs and bleeding patients. Although some of these may be left over in certain circumstances, the workload of an on-call doctor should be dominated by acute and planned patient reviews.

**Re-audit**

This first-cycle audit provided scope for identifying areas of change, creating interventions and re-auditing against the initial data to look for improvement.

At the start of April, the results of the first cycle were presented to the current cohort of Torbay Hospital FY1s, emphasising that almost half the on-call jobs were preventable as they could have been completed during the day. They were advised that improving organisation on the ward would reduce their on-call workload. A re-audit was undertaken during the last 2 weeks in April. A similar method of data collection and analysis were used.

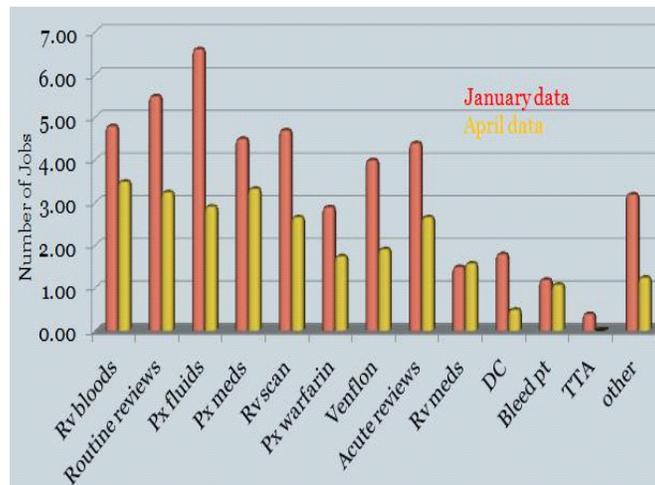
Total numbers of jobs were not compared due to the different length of time over which the data was collected in each instance.

The graphs for the re-audit data are shown below next to the original data. The least common jobs have been grouped into an "other" column.

**Graph 3 - Re-audit: Average job count per weekend day shift:**



**Graph 4 - Re-audit: Average job count per weekend day shift:**



There was no significant difference in weekend job counts however the weekday job count was greatly improved (as shown below). This may be due to improvements in practice by the ward teams but as there is a global reduction instead of a reduction in one field, it is more likely that this simply represents a seasonal difference in workload.

Another annoyance for the on-call team which was found when the data was analysed in both audits was the haphazard nature in which nurses call jobs down from the wards to be added to the on-call list. Doctors are constantly being called back to the same wards as new jobs are added, instead of the team being able to deal with jobs left over in one visit.

More definitive interventions have since been put in place on two trial wards. Further re-audits are in the process of being taken. Hopefully with the new cohort of foundation doctors these new interventions will be incorporated into every day practice, improving ward efficiency and the quality of patient care.

**Please note the content and opinions expressed in all case studies are those of the writer and do not necessarily reflect the views of NHS medical careers.**

### Resources

- [BMJ Careers article on Audits - How to publish an audit](#)
- The [Clinical Audit Support Centre](#) say in the resources section of their website: *'There is currently limited opportunity to publish clinical audit projects in the UK although journals appear increasingly interested in clinical audit work. If you have undertaken a clinical audit project and hope to get it published the two most recognised journals are CASC's quarterly Clinical Audit Today and The Online Journal of Clinical Audits via <http://www.clinicalaudits.com/>. Well known journals such as BMJ and speciality specific journals also publish clinical audit work from time-to-time.'*
- <http://www.clinicalaudits.com/index.php/ojca/index>



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