The life of a surgical house officer – why isn’t IT helping us?  
Endless opportunities

Dr Manoj Patel
PGY3 House Officer, Scrubs Director (www.scrubs.co.nz)
Auckland

Abstract

House Officers are the junior members of clinical teams in public hospitals and hence bear a lot of administrative responsibility. This ranges from admitting patients, to requesting investigations, to discharging patients, and everything that may occur in between.

House Officers use information technology (IT) hardware and applications for managing investigation requests and results, accessing patient clinical records, and discharging patients. While such technology helps to support their work, many opportunities for extending IT solutions are not fulfilled. As a result, House Officers are often left wondering why IT is not utilised more fully to assist them.

There is significant room for improvement in current IT applications and even more scope for development of new applications to help improve the efficiency and efficacy of the various functions of a House Officer.

This paper takes the approach of “following” a House Officer through a typical day, to highlight such IT opportunities. It challenges vendors to consider the needs of House Officers in the development and enhancement of IT solutions.

1. Introduction

Many surgical House Officers (see note a) will tell you that they often feel like “glorified secretaries”. Contrary to general public perception, much of the work of a house officer is taking information from one source to another, with a smattering of clinical interaction mixed in.

This paper outlines a typical day in the life of a busy House Officer (HO), with an emphasis on opportunities for improvements in the hospital environment in which technology could play a role. As such, the paper represents one person’s experience and views.

The question that always arises for me as an HO of two years standing, is that it can’t be that hard, so why isn’t information technology being embraced to its full potential?

2. A Typical Day in the Life of a Surgical House Officer in a Large Public Hospital

Wake up at 0630, to be at work by 0715. HOs need to be at work before everyone else in order to prepare for the ward rounds, that is to say, before the Registrars and Consultants arrive.
2.1. Pre-ward-round preparation

The morning is the most essential part of the day as this is the time when each patient is seen and treatment plans are decided. It is also the main time for contact between HOs and the rest of the surgical team (Registrars and Consultants) who spend most of the day operating in theatre or at clinics.

Surgical teams typically have up to two HOs, depending on the hospital, specialty and patient load. However, doctor shortages, lack of sick cover, and conference leave can often leave teams understaffed.

The key for a successful day is planning, planning, planning – it involves prioritising each task and then getting to it. The HO administering a successful ward round will ensure all patient information is at their finger tips, by collecting and familiarising themselves with patient notes and investigation results. This can become challenging when there are 30 patients under the care of the HO’s team.

Patient Lists: This is the most important document for each clinical team. It outlines which patients are on your team, where they are, and what their medical issues are. It also allows for jotting down tasks and notes for each patient.

Blood Results: Check the blood results for all 30 patients on your team. The “boss” is bound to ask you what they are, so better print them all off just in case.

Patients’ Folders: The HO needs to ensure that all the patients’ folders are on a trolley so that the round can move quickly without hold ups. This is a logistical nightmare as clearly the doctors are not the only staff that require access to the folders. Morning ward rounds often coincide with nursing hand over, which can create a “fight” for the notes.

Adding to the challenge is the fact that patients can be spread over multiple wards, so a House Officer must attempt to set up the notes on each ward. However, the notes often don’t stay in the one place for long.

2.2. The ward round

The first challenge is the often unpredictable arrival time of the consultant. It is not unheard of for the team going on the round to be all lined up for half an hour, waiting for the consultant’s arrival onto the ward. Such uncertainty early in the day can be frustrating for HOs as it is critical time that could be used for completing other tasks for the day.

Essentially this is how a surgical ward round works:

- The consultant leads the team from patient to patient, closely followed by the Registrars.
- The Registrars “present” the patient, and the HOs struggle to find a vantage point around the bed where they can hear the conversation and document it.
- Whether the HOs have finished writing the notes or not, the round will continue.
- Hard copy notes are an HO’s “nightmare”. Every doctor, at some stage, will end up on the floor collecting a patient’s notes together after the folder clip has failed – the tricky part is putting it back together in the correct order. Some long term patients can have an enormous file of notes – managing these on a ward round, and trying to document a note, can be a physical challenge. As there is only one copy, they can only be accessed by one person at a time – this becomes a challenge when your Registrar wants to read the file at the same time as the HO is trying to document a note.
• Often the round will involve reviewing what other services have said about the patient. This can be a challenge – establishing who saw the patient, and from what service, and wrestling with the legibility of the notes. A major problem is that people who have made entries seldom leave their contact details in the notes in case further clarification is required. Of course you can hunt them down, but it all takes time.

• Often an HO will have to present investigation findings, which means trawling through the screeds of printed results.

• On average 2–3 minutes are spent with each patient.

• Ward rounds often stretch across wards. HOs have to run ahead in order to collect the notes and meet the team at the first room on each new ward.

2.3. Post ward round “breather”

Following a ward round, teams often take a short break over coffee. This gives HOs a chance to confirm the plan for each patient with the Registrars.

2.4. The rest of the day

Often the first tasks to sort out are those which are dependent on other people, services or departments, for example, radiology requests and reviews by other specialties or services.

Radiology:

Organising a radiological investigation is one of the most challenging tasks for a HO. It involves finding the relevant patient notes, reading the notes thoroughly (as the Radiologist is bound to ask questions), and writing the request (which often involves copying existing information) in respect of each patient. Next steps include heading to the Radiology Department to find the Radiologist required for the type of examination, waiting in line to refer to the Radiologist and then defending the request if the Radiologist has questions. Once the request is accepted, the slip needs to be taken to the booking clerk – this can be another challenge as there are different clerks for different procedures, and there is no guarantee they will always be at their desk when you need them.

However, it is often not so simple – sometimes the Radiologist cannot be found (they might be at lunch, in a meeting, doing a procedure, etc), or they may ask questions you simply don’t know the answer to (which necessitates you seeking clarification from your Registrar before trying again).

The next challenge associated with Radiology is finding out when the investigation will be performed, which involves calling the booking clerk, hoping they are available.

Once an investigation is completed, the Registrars expect the results quickly, as patient management decisions are often dependent on them. Different hospitals use systems that range from physically going to the radiology department to find a Radiologist to review the investigation, to discussing over the phone, to copies of handwritten preliminary results being faxed to the wards. Faxed results often print off in poor quality, which together with the challenge of poor legibility, makes them less than ideal.

Referrals to other specialties/services:

This involves writing a referral (most often copying existing information), then discussing it with the relevant on call Registrar from the service concerned (often it involves a bit of a “sales job” to convince a busy Registrar to see a patient additional to their current load) and then getting a copy of the referral through to the service (often via fax, which you hope ends up going through).
Discharging patients:

This can be one of the most stressful parts of a HO’s day. As soon as a patient is told they can go home, they usually want to leave as quickly as possible. However, they are often not the most immediate priority on a HO’s “to do” list, which often results in them spending unnecessary time in hospital as they wait for their Discharge Summary. Discharging a patient requires a Discharge Summary, which involves documenting why the patient was admitted to the hospital, what happened while they were in and their ongoing treatment plan post-discharge. Sounds simple enough, but summarising such information can be complex in certain cases. Essentially, it involves collecting and summarising all the information gathered during an admission. There is no standard way to produce a Discharge Summary – essentially, it comes down to the preferred approach of the HO writing it. There can be significant variation in the quality of documentation from HO to HO.

Many hospitals use electronic discharge approaches. These include various pre-defined fields, such as reason for admission, what happened during the admission, plan on discharge, and discharge medications. Electronic discharge procedures help to provide structure, although, as most fields are not compulsory, there is a tendency for all information to be entered into a single field, simply because it is easier. There have been attempts to integrate information such as laboratory results into discharges. However because of poor formatting and integration, they often make the documents bulky and hence are often not utilised. Key information such as operation notes and radiology summaries are currently not able to be automatically included into summaries. Hence, manual copy and paste has to be used. The medication functionality has clearly not been designed with the HO in mind – the automatic medication name completion function does not correspond with the everyday prescribing habits of HOs and, hence, is not often used. Options such as “favourite” medicines would be an excellent addition. Thus while, electronic discharge systems are a significant improvement from hand-written discharges, there is plenty of room for improvement.

Clinics:

Certain specialties require HOs to see patients at pre-admission clinics. This often involves spending a period of one to three hours away from the ward. This can cause problems managing ward patients, especially if you are the only HO on the team, and is further complicated by clinics sometimes being located on different sites.

The role of a HO at a surgical pre-admission clinic is to take a medical history, perform a general examination, and prepare documents such as a medication chart, for admission. Challenges encountered here include access to previous medical notes to accurately determine history (some hospitals have e-notes, others have hard copy notes, and on occasions a patient may be new to the area and hence have no accessible notes). Preparing a medication chart helps to streamline the process when the patient is actually admitted to hospital, however, if there are significant lag periods between the clinic and admission, there is opportunity for changes to medications.

At surgical preadmission clinics, patients will often also see an anaesthetist to determine suitability for an anaesthetic. The anaesthetist will often go through similar questions and examinations to the HO, which can mean repetition of tasks.

Emergency Department (ED):

On “Acute” days (days when your team admits all new patients that present under your service), HOs are required to help Registrars admit new patients that present to ED with health issues in the particular doctor’s specialty. When a patient comes into ED, they often come with a short referral letter from a GP. They are first triaged by a nurse when they come into ED, to determine how urgently they need to be seen. Another ED nurse will then take a brief history from the patient and take observations (eg, blood pressure, pulse rate, temperature, oxygen saturation). Patients that are not referred to a specialty will be seen by an ED doctor who will take a medical history, perform a thorough examination and request investigations (for example, blood tests, radiology).
Depending on the ED doctor’s findings, they will then decide whether the patient should be discharged or referred to a specialty (such as, orthopaedics, general surgery, cardiology) for further investigations or management while still in ED. The Registrars for each specialty see patients that have been referred by GPs or by ED doctors. The specialty Registrar will take a detailed history, do a through physical examination and request investigations as required. HOs can see new patients by themselves, or together with a Registrar or after the Registrar. Commonly, the HO’s role is to do the leg work in terms of examining and documenting a patient’s vital systems, taking a thorough medical history, documenting medications and writing a medication chart, requesting investigations and generally ensuring a patient is stable enough and has an adequate plan which will allow them to be managed on a ward.

**Ward Patients:**

Ward patients also need care during the day. If a patient on the ward is unwell, then the HOs will be called on to make an assessment. This can happen at any time of the day or night and, depending on the severity of the patient’s situation, can take hours out of an HO’s day.

**Theatre:**

HOs will often try and spend time in theatre to gain experience with the procedures and to demonstrate their interest to senior colleagues. As the primary responsibility of HOs is to the ward patients, it can often be difficult to spend time assisting in theatre as this often means you are not contactable.

**Meetings:**

Ward teams will have several meetings a week that range from teaching sessions to team meetings to radiology conferences and so on.

**Breaks:**

It is common for HOs to be on the go all day. Lunch and other breaks are squeezed in as time allows.

What I have presented is a generic summary of the tasks an HO will encounter. They vary for different specialties with emphasis on different areas. I have presented a bias towards surgical specialties here as this is what I am most familiar with.

### 3. Potential Information Technology Opportunities

As acknowledged in the introduction, a significant component of the role of a HO involves communicating patient information – such communication takes different forms from admission, through to ward rounds, investigations and discharges. I see significant opportunity for all of these processes to be made more efficient and robust through the effective use of information technology.

If each patient had an electronic health record, then admitting a patient via ED or clinics would be a lot more reliable in terms of determining past medical histories and current medications.

Electronic notes, that is the replacement of hand-written notes, would make the life of a HO much easier and more efficient. This would clearly require a suitable hardware platform. As a HO, I would envisage each doctor having their own personal device and would be looking for hardware that: was mobile, robust, and light in weight; supported easy data entry; and had a screen size of between 10 and 12 inches.
At admission, existing information about medical history and medications could easily be translated into admission documents (admission notes of nurses and doctors, medication charts). This would make the information more comprehensive and accurate, and save the tedious manual documentation of such information (often in multiple areas of patient’s notes).

With electronic notes, the struggles of a ward would be a thing of the past. All the information for each patient would be easily accessible, legible and organised. Referral, laboratory and investigation results will be readily accessible and legible.

Referrals to other services, laboratory and radiology requests could be made on the ward round electronically (encompassing e-ordering). This would save time, and allow for the tests to be performed in a timely fashion. Electronic notes would also allow for information about patients to be accessed by other services, meaning that referral processes wouldn’t be limited to a single referral note.

Discharging patients would also become more efficient. Rather then a HO trawling through patients’ notes to pull out key information, software could do the bulk of this automatically. Discharge summaries would become more comprehensive, detailed, standardised, and less of a burden on HO, as well as reducing unnecessary waiting times for patients.

I have focused on the broad interventions of electronic notes, and e-ordering. Clearly these are complex strategies which would require significant technology and integration at many levels. They have the potential to improve the role a HO plays in a public hospital. However, their effects would extend far beyond HOs and impact on every aspect of a hospital. The potential is mind boggling.

Hospitals and vendors recognise the significant potential of IT solutions. Significant investment, and many products have been developed, which impact directly and positively on the everyday work of HOs. However, such products often lack the finer detail and functionality that would make them excellent products. I believe part of this is a lack of direct consultation with actual HOs that are using the products. To me it seems like a logical place to start and would significantly improve products and their subsequent utilisation.

Editor’s note: This is an opinion piece. HCIRO welcomes submissions of opinions and responses to them including letters and practice notes. Note that some editing may take place for clarity and conciseness.

Notes

[a] In New Zealand, House Officer or House Surgeon refers to a Medical Practitioner from first to third years post qualification.