# Welcome to ICU

An Introductory guide to FVRH ICU

For trainees, by a trainee

*Updated June 2022*

**What?**
The Forth Valley Intensive Care Unit is actually a mixed HDU/ICU. There were 19 beds over two bases. *However, during the COVID-19 pandemic, ICU was expanded to create a third base and 10 additional beds, in what was the surgical assessment unit (now located on Ward B12) .*

We describe patients as Level 1, 2 or 3.

- Level 1 is enhanced ward level care (basic observations, no invasive lines).
- Level 2 describes a "high dependency patient"; single organ failure, some invasive monitoring, non-invasive ventilation, agitation/delirium etc.
- Level 3 describes an "ICU patient" who requires invasive mechanical ventilation, renal replacement therapy, or support for multiple organ failures

In normal times base 2 will generally have most of the ICU patients and base 1 most of the HDU patients. However all bed spaces and ICU nurses can do both and for a variety of reasons (most commonly infection control during the COVID pandemic) this pattern may have to change.

The COVID-19 pandemic has made it necessary to change how the ICU is run. As well as clinical challenges of a new disease, it presents daily logistical challenges as we try to safely care for COVID-positive and COVID-negative patients, the number of which are constantly changing, in a relatively fixed area. If we exceed our isolation rooms with COVID patients we will have to cohort them in a "red zone" with multiple COVID patients nursed in a single area with nominated donning and doffing points for PPE. Its important to make sure you are FFP3 face fit tested as all staff may have to work in an area where AGPs are occurring.

*It is important to be aware of, and ask if you are not sure, where the boundaries of the red zone are at any time, especially if you have been away on leave, as it may have changed when you come back.*

**Who?**
There are over one hundred nurses and nursing assistants who work in ICU; make friends, they are your best allies! Level 3 patients are nursed at a 1:1 ratio, level 2 at a 2:1. There is a nurse in charge for each side on the unit; they will come to the morning handover and help identify any concerns. Allied health professionals including physiotherapists, dieticians, SLT, OT and pharmacists visit our patients daily. The ICU patients are a mix of medical and surgical and their parent teams will (usually) visit regularly. Try to speak to them if you spot them as we work together to manage the patient; we usually don't make any big changes they may suggest without first running it by one of the intensive care consultants however (for example changing antibiotics).

Monday to Friday there are at least two consultant intensivists on the unit. Normally one consultant will be in charge on base 1 and the other on base 2. There is a consultant on site in the evenings until at least the end of evening handover. Overnight the unit is looked after by the night shift anaesthetic trainee and their resident consultant, with a non-resident Anaesthetic and ICU Consultant available on-call.

There are FY1s, FY2s, anaesthesia, emergency medicine and medical core trainees, anaesthetic registrars and ICM registrars who rotate through ICU. Everyone from FY2 up to the most senior registrar is on the same rota so there is a very variable skill mix on the unit on any given day. The consultants are accordingly very approachable and happy to be asked about anything, they are very used to people with little or no ICU experience! There are two/three trainees on a long day; they usually take the ICU page. The purpose of this is so the nurses and consultants can contact you - you should not get referrals through it, if you do divert them to the consultant wifi (it's helpfully written on your page).

## A day in ICU

Barring emergencies, your day should follow a broadly similar pattern...

**08:30**

**Handover** from the night team in the MDT seminar room. *Unfortunately there is a limit on the number of people who can attend due to COVID social distancing rules – please don't be offended if you are asked to just start seeing patients.*

We try and keep this as brief as possible to let the night team away and enable us to start seeing patients. Then it's time to make your way out into the unit and see some patients! Decide between you and the consultants how is best to divide yourselves between the bases.

You will develop your own preferred way of doing your daily reviews; your aim is to do a thorough, systematic evaluation. Introduce yourself to the nurse looking after the patient and ask them what they think, they have a wealth of experience. The daily review aims to identify any problems that have occurred since the last review and plan how to investigate/treat them. Try to have the overall goal at the back your mind when you are seeing them; namely to get the patient better and out of intensive care. What can we do to bring them closer to normality? Document your assessment and the problems identified in the medical continuation sheets. This will be discussed, and a plan made on the ward round. Remember the time – there is no point in spending an hour on one patient if you have 1 hour and twenty minutes to see 4 patients…. If you are on the unit for multiple days it is helpful to see the same patients as it is much easier to complete an efficient review if you have seen the patient the day before.

On the back of the observation chart there is a list of 'housekeeping' questions. Amidst all the excitement it is easy to forget to do the simple things for our patients; this is designed as a prompt to remind us to do things like prescribe thromboprophylaxis, think about fluid prescriptions etc. Have a look at this and complete the bits you can, but you will also go through it on the ward round.

**Approx 09:30**

**Daily consultant ward round**. There are normally simultaneous ward rounds with the consultants taking a base each. This will start between 09:00 and 10:00 depending on team preference. On the ward round you will present your patients and discuss your findings. A plan will be documented in the continuation sheets, and physiological targets written on the observation chart under 'daily goals'. Take a Computer-On-Wheels so you can access Clinical Portal for results and HePMA for medications as you go.

There are two stickers you need to hand for the ward round; the yellow 'consultant ward round' sticker which highlights their entry in the notes. And a 'ward fit' sticker which is placed in the notes when they are identified as such by a consultant. These are kept in a white ward round folder labelled 'Doctor's stickers' in Base 1.

**11:10**

Daily MDT meeting with physiotherapy, dieticians, OT, +/- SLT +- pharmacy.

*This currently happens in the ICU Seminar Room (between Bases 1 and 2) but this may change depending on COVID patients and social distancing rules*

This is followed by a meeting with the charge nurses during which we go through a safety dashboard; identifying patients causing concern, highlighting infectious risks, patients with ceilings of care in place and capturing any adverse incidents from the previous 24 hours. One of the trainees, though this may be done by a consultant, should log into the computer under the generic login (login: ccu, password: ccu) and open wardwatcher and the morbidity dashboard. This can then be amended as necessary during handover.

**Approx 15:30 (but can happen at any time)**

**Daily consultant microbiology round** where we hear about any new results for our patients and discuss changes to antibiotic therapy with a consultant Microbiologist. Generally, this is a 'board round' in the seminar room. It is important to make the consultants from each base aware that the microbiology ward round has started as they will likely wish to be present to discuss their patients or may have specific questions they want to ask. Information about the patients including inflammatory markers, pyrexia and other clinical signs of infection, what antibiotics/antifungals they have been on and for how long should be collected on the ward round.

What is discussed for each patient is collated on a microbiology including current trends in markers of infection, clinical status, new results and microbiology advice. It is useful to have someone writing on stickers and someone on HePMA to help answer any questions regarding antibiotics or make any necessary changes. Changes should not be made before running them by the consultant responsible for looking after the patient first.

At the end of the meeting it is crucial to identify who is going to be responsible for discussing with the responsible consultant (if they were not present), prescribing any remaining changes decided by the team and placing the sticker in the appropriate notes.

**16:00**

**Handover prior to day shift leaving**. Review all jobs for the day and check they are done and handover outstanding issues.

**16:30**

**Short (normal) day shift leave**. Usually 2 trainees on late shift to cover the evening.

**20:30**

**Handover to night team**. Meet in the ICU seminar room again to handover with the consultant to the night team.

# Trainee duties in ICU

This will vary enormously according to experience. Depending on level of experience it will hopefully be possible to get some experience with practical procedures including arterial and central lines. Please be reassured you will never be expected to do anything you are not trained to do and there are consultants on site at all hours. If you are unsure about anything, whether it's a deteriorating patient, infusions or equipment settings you aren't familiar with or a practical procedure you feel you need support with please do ask. Much like any ward, the most junior trainees will spend a large amount of time on paperwork.

## Admitting patients

During the day, a consultant will take the referrals and usually go and see them. More senior trainees will sometimes hold the Wi-Fi phone or go and review patients ahead of the consultant. If you are not busy it's a good idea to go with them if you can, to gain experience of managing sick patients and learn exactly what ICU can (and can't) offer patients. It is also a good experience to sit in on the difficult conversations with family/patients when we do not take patients.

Regardless of whether you are there for the ward / A&E assessment, you will be expected to see and clerk patients when they arrive in ICU. The consultant will let you know what the management plan is.

- Ensure a yellow admission proforma is completed - with exception of those from theatre where the anaesthetists will usually have done this for you. A stash of these yellow forms is kept down in A&E but if you remember, it is good to take once with you just in case.
- Regular and new medications should be prescribed on HePMA, promptly - There is a specific ICU bundle on HePMA; this has various ICU specific infusions pre-written to help you out. This must be used for all patients receiving sedation infusions or inotropes / vasopressors (make sure no patient is discharged from the unit with one of these however).
- Ensure consultant's management plan is enacted.

## Discharging patients

**Discharge to ward**:

Transfer letter

If a patient is identified as (or approaching being) ward fit they should have a transfer letter prepared in good time. Patients may be moved at any time to make room for sicker people needing to come in – it is neither safe nor appropriate to leave this task to the night trainee, therefore the guts of the work should be done by the team looking after the patient during the day.

This letter needs completing in full with details such as microbiology results and key events in the ICU stay (eg tracheostomy, return to theatre ..). It is also vital that any important communications

with the patient and family regarding limitations to treatment and decisions such as DNACPR are accurately passed on.

As soon as the letter has been completed, or a ward bed becomes available for the patient, the transfer letter needs to be printed and goes in the paper notes to the ward with them. This is important so the team taking over the patient's care has written details of the ICU stay and the plan for ongoing management. You should ask a consultant to review and countersign the transfer letter electronically before it is printed – only once a consultant has authorised a transfer letter on g2 does it become visible electronically on Clinical Portal under 'Clinical Communications' for the ward teams to view. However, this is not always possible before the patient leaves. Therefore, it is more important, for communication and continuity of care, that patients leave with a hard copy of their transfer letter.

Verbal handover

Patients should also be handed over verbally from the ICU medical team to the ward medical team via telephone. This ensures a doctor on the receiving team is aware of the transfer, any issues and they have the opportunity to ask us any questions about ongoing management.

The easiest way to do this is to call the ward and ask if there is a member of the medical team around to receive a verbal handover, or for their contact details if there is no doctor on the ward (e.g. evenings and weekends).

Who gave, and received, the handover should be documented at the bottom of the transfer letter. Remember – if it wasn't documented it didn't happen!

If patients are transferred to the ward out-of-hours/overnight or there are other issues providing physical copies of transfer letters or verbal handover, this should be chased up at the earliest opportunity e.g. before ward rounds in the morning for patients transferred overnight/not receiving verbal handovers the day before.

G2 transfer letters

Transfer letters for patients stepping down to the wards are completed on g2. The IT team will provide you with a username and password.

Find it on Staffnet → Clinical Applications → g2, though most computers have it on the desktop.

Training will be provided at induction

**Discharge to home:**

TrakCare IDLs

Patients who are being discharged home from ICU or who have died require Immediate Discharge Letters and HePMA discharges similarly to patients who are discharged home on the wards. These

letters need to be authorised by a Concultant once the patient has been discharged from TrakCare to enable to letters to be sent, and any follow-up communicated, to the GP. Please mark it on the board in the seminar room and remind consultants to authorise.

**Deaths:**

When a patient dies they require the following:

- Death confirmation and documentation using Forth Valley Death Confirmation pro-forma which goes in patients notes. Record the time of death reported to you (or witnessed) as well as the time you are seeing the body.
- Mortuary cards filled in x2 – check with consultant if unsure whether patient's body can be removed from the mortuary. It may not be if procurator fiscal will be involved or post-mortem planned.
- GP needs to be informed – this is often done by the ward clerk but please check.
- Death certificate completed – this is most often done by the consultant who was looking after the patient. At the very minimum cause of death must be discussed with a consultant. Issue of death certificate may be delayed if procurator fiscal involvement required.
    - Copy retained in notes
    - Copy emailed to appropriate registry office along with patient's NOK contact details including email address
    - Patient's NOK usually contacted when death certificate ready and informed of process i.e. now register death online
    - Content of death certificate should be put on WardWatcher under 'notes' in the ICU Discharge section
- Immediate discharge letter – completed and authorised on TrakCare
- Mortality&Morbidity database (MoSES) form completed – for discussion at next M&M meeting
    - APACHE scores and predicted mortality can be found on WardWatcher under '24hr physiology' □ 'Scores'.

A checklist like this is put on the front of the deceased patients' notes which are kept on a trolley in the seminar room. Each task should be signed and dated by whoever completes it. In addition to this checklist, patients should be added to the transfer board as a more visual reminder of tasks to be completed.

<u>Transfer board</u>

Located at the back of the seminar room. Aimed at facilitating identification of administration which needs completed for all patients who are ward-fit, being discharged home or have died. Trainees should update this daily – adding new patients after ward rounds, ticking boxes as jobs completed and removing patients once all relevant tasks are completed.

| Patient | Destination | G2 letter or TrakCare IDL | Authorised | Verbal handover given | Death certificate completed | M&M updated | Requires follow-up |
|---|---|---|---|---|---|---|---|
| X | **Ward** | G2 letter | By consultant on g2 | By trainees | - | - | Yes/No |
| Y | **Home** | TrakCare letter | By Consultants on TrakCare | - | - | - | - |
| Z | **Mortuary** | TrakCare IDL | By Consultants on TrakCare | - | Usually by consultant | By trainees | ?procurator fiscal |

**Wardwatcher**

All ICU patients in Scottish ICUs are put into a programme called wardwatcher (on all the desktops in ICU). Log in as "user" and no password is required. Whilst it is possible to print handover sheets this is strongly discouraged as if these are misplaced outwith ICU they contain confidential information about multiple patients and disciplinary action can result.

- The first page (admission) of each patient 'file' is important - make sure the blurb matches an up-to-date description of the patient and what we are doing for them. Short and sweet, pertinent information.
- You also need to familiarise yourself with the APACHE II physiology score; we help input the data for this (a range of blood tests and observations from the first 24 hours of their admission). This generates a predicted hospital mortality score and serves to ensure that our outcomes are as expected. This and other information is reported on in the Scottish Intensive Care Society Audit Group Annual Report. Anyone who stays for over eight hours generates an APACHE II score and predicted mortality.
- ICU discharge page should be used to record the death certificate content in the event of a patient death.

**Mortality and Morbidity**

There is a weekly **M&M meeting held in the ICU seminar room at approx. 15:00 on Friday**. At this meeting we review all the weeks deaths, as recorded in MoSES reporting sysem. We also review the Morbidity Dashboard and ensure learning points are disseminated and changes made as needed.

MoSES is found on Staffnet → Clinical applications → MoSES. For deceased patients complete the form under the Intensive Care heading. Deaths should be entered ahead of the meeting where possible, and are then discussed to ensure the best care possible was delivered and highlight any learning points. Any Morbidity events resulting in harm or with a clear 'near miss' should also be entered here (+/- an IR1).

The Morbidity Dashboard (on the desktop under the generic 'ccu' login) is updated daily at handover to capture any adverse events in the preceding 24 hours. Themes tend to emerge from this and are then discussed at M&M to look for solutions and risk reduction.

**Incapacity**

ICU patients frequently suffer delirium and altered cognition, or are sedated as part of their treatment. These patients will all lack capacity to consent to their ongoing treatment. If an incapacity certificate is required this should be completed filed at the front of the patient's notes. Any doctor, FY2 or above can complete this form.

**DNACPR**

DNACPR forms will usually be completed by a Consultant, if not, they should be made aware BEFORe it is signed. All DNACPR forms must include the details of who it was discussed with, and be countersigned by the responsible Consultant ASAP. These should then be filed at the front of the medical notes and staff made aware.

**End of Life**

Unfortunately a significant proportion of ICU patients will not survive. The management of this is the same as elsewhere in the hospital, with a focus on the patient and families wishes and needs, and ensuring dignity and symptom control. The practicalities, due to the complexity of treatments sometimes being withdrawn, may be slightly different however. If a patient is believed to be entering the last days of their life the End of Life Management Plan should be completed with the MDT involved in their care to guide this process. This is a lilac coloured form kept with the DNACPR forms in the paperwork stack.

*Relatives of patients who are end-of-life are exempt from visiting restrictions whilst they stand during the pandemic. If the decision that treatment is futile has been made, relatives will usually be contacted and offered the opportunity to visit, sometimes before some care or organ support e.g. ventilators, have been withdraw to maximise this opportunity as long as the patient does not appear to be suffering. If the patient is COVID-positive, relatives may be required and must be prepared if this is the case to self-isolate for 10 days following the visit.*

***Procedures:***

From lines to lumbar punctures to intubations. There are lots to do! Put yourself forward if you are interested and people will try to teach you but, depending on your grade, it may or may not be appropriate for you to be doing these. All these interventions carry small but serious risks, particularly in the ICU, so don't be offended if the consultant does them themselves! Good to watch a few first, read up on and learn the theory first (indications, anatomy, equipment required, steps involved etc) to prepare yourself.

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## Covid-19 pandemic changes

*This is only directly relevant if we are cohorting COVID-19 patients as we have exceeded capacity to look after them in single rooms*

The PPE donning station is outside the seminar room. Always put your full PPE on here (FFP3 mask/gown/goggles or visor) and check yourself and others ('buddy up') before entering a 'red zone'. Anyone entering a red zone without the necessary PPE will most likely have to self-isolate as per government advice. Speak to the nurse in charge if you require mask-fit tested or there are any issues with any of the PPE.

There are signs and barriers clearly marking entry points to the red zone which will be moved as the boundaries change. However, these are still sometimes missed – full PPE is not required to enter other 'red zones' in the hospital e.g. AAU, ED, therefore staff who do not routinely work in ICU e.g. specialist teams who come to review patients in ICU may be confused, may not be aware of the local protocols, and may make mistakes. Remain vigilant, and if someone looks unsure ask if they need any help, especially if the red zone has occasionally been extended into Base 2.

For the same reasons, when answering the intercom system for the buzzer at reception check who it is and clarify whether they know where they are going – the old ICU reception where the buzzer is located is a red entrance due to its proximity to a door into base 3 – relatives and staff who do not usually work in ICU should be collected from main reception and escorted around through the main yellow ICU reception (next to theatre lifts).

<u>Preventing HAIs in Base 3</u>

Gloves and an apron should still be worn over full PPE gowns at the bedside in Base 3 and changed between patients. Hand hygiene rules should still be followed. Gloves should not be worn at the nurses station, when answering phones or using computers etc to limit spread of HAIs. Gown sleeves should be rolled up to the elbow. Ensure to wash forearms up to the elbow thoroughly when doffing.

Keeping everyone else safe

You must leave the red zone regardless of its boundaries via the doffing room (behind bed space 26; not via the double doors next to bed space 25). If you do not know where it is then ask. Max two people in the doffing room at any time. Ensure you become familiar with the correct doffing technique – gown, mask, goggles, wash/dry hands, put on fresh face mask, wipe goggles and shoes, wash/dry hands again. Return any goggles/hoods to the donning area once clean – there is no such thing as the goggle fairy!

Seminar room

For social distancing, no more than 10 people should be in the seminar room at any one time. If you arrive to handover and the room is already full you should begin reviewing patients until handover has finished. Keep the room clean and tidy. Bags should not be stored in the seminar room – there are lockers in the theatre changing rooms and ICU staff break room.

Relatives

Visiting rules within the hospitalchange frequently – please ask if unsure. Video calls on ipads using NearMe can be facilitated. If discussing with relatives, all we need is their email address to send them the link and to arrange a mutually good time for them to enter the virtual waiting room. Otherwise, most communication is via telephone. Ensure you know who you are talking to, their relation to the patient and that you give information about the correct patient. If unsure whether you should be speaking to the caller it is best to ask the patient who they are happy for you to communicate with, or the patient's nurse. Be mindful of the information you are communicating, especially patients without capacity. Focus on current care. Avoid disclosing information about past medical history which the patient may not wish communicated. Document any conversations with family on the blue continuation sheets.

Documentation

- When covid-positive patients are admitted to Base 3, their paper notes from earlier in the admission go with them into Base 3 to facilitate clerking. Once this is completed the paper notes are double-bagged and quarantined for 72 hours before they can be filed in the Base 3 trolley in the seminar room and referred to as necessary.
- Clinical notes for covid-positive patients during their stay in Base 3 are entered on TrakCare ('Clinical Notes' 'New') – as does all family communication, escalation plans, microbiology ward round notes, and allied health professional reviews

- Nursing notes and 24hr observation charts are on the shared drive department folders → ICU → COVID-19 → Electronic Charts → Bed x → Charts by date.
    - When viewing electronic obs charts, ensure you close them down on the computer you are using before leaving otherwise the nurse will not be able to access them until you do.
    - There are no daily goals sheets in Base 3 but it is still important to remember to think about these factors.

- Some documents are still paper charts e.g. blood glucose monitoring charts – any paper chart can be taken in to Base 3 but cannot leave.
- AWIs and DNACPRs should be filled in and filed with the paper notes in the seminar room. However, these decisions should be communicated to nursing staff looking after the patient.
- Note if a specialty is asked to review a patient in Base 3 they may not be aware that medical and nursing notes are electronic so make them aware.
- If discharging covid-positive patients to the ward make sure you inform the receiving team that notes are electronic.

Other

- New covid-negative admissions should be re-tested for covid at day 5. This can be prescribed on Hepma as a reminder as it is often missed
- Covid-positive admissions are re-tested at day 14 and every 48 hours after that. If they have two consecutive negative covid tests they can be transferred out of the red zone (to prevent re-infection). Their notes usually remain electronic.

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## Helpful courses/resources

SICS (Scottish Intensive Care Society) website is a great resource. There are learning modules in the education section that you can complete for free and these will give you a basic knowledge on which to then add the real life experience.

PICT (Principles of Intensive Care Training) run in the Sim Centre is a good course for a basic introduction to managing common ICU emergencies; aimed at CT1 level.

**Have fun!**