



ATSP Re:

... The **ultimate guide** to
being a **confident FY1**
out of hours

ATSP Team 2019

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Introduction

A note from the authors

Dear all new FY1s!

We know how daunting starting life as a newly qualified junior doctor can be, particularly if you start your first shift on-call or working nights. During our foundation experience in medicine we found that medical school had prepared us well for emergency situations with numerous courses like ILS, AIMS and similar with the main emphasis being on ABCDE and managing acute presentations.

When you are asked to see patients on hospital wards this sort of training only gets you so far, it's a great structure to start with but often the presentations are not that acute and a basic ABCDE assessment just isn't enough!

The aim of this teaching material is NOT TO TEACH you medicine you already know. It is there as a guide and a prompt to help you out in situations you may not have covered as a student and to make sure you are a safe practitioner. It is also not a substitute for senior advice.

The individual case scenarios have been presented to you in a layout which should help with your documentation as well as assessment and management plan for the patient. The presentation on blood in the catheter bag is set out as an example of good documentation, whereas the other examples are shortened versions with emphasis on the most important aspects of each presenting complaint. Make sure you don't just read them mindlessly, you still always need to think about your course of action regarding ABCDE initially! You should also be able to come up with differentials and take an appropriate history for most scenarios which is why we have not included detailed prompts for this. We have focused on the areas which ourselves and our colleagues struggled with initially.

Whenever you have an encounter with a patient it really is important that you document what you have done in a systematic way. This is to firstly protect yourself from a legal perspective should any harm come to the patient and secondly to help your colleagues who are in charge of their care. You will understand this soon enough for yourself!

We hope you find this booklet useful and that it provides you with the majority of information you'll need when you are ATSP'd! Please always check for local trust guidelines before following the guidance in this booklet. Also, the guidance in this book applies only to adult patients. Seek specialist advice when managing children.

If you have any further feedback for us on the material or anything you would like to add please feel free to contact us with your suggestions.

ATSP Team

ATSP Re: ABDOMINAL PAIN

Initial Assessment



A V P U

ABCDE

Is this patient acutely unwell?

Are they post-op?



If ACUTE ABDO i.e. perforation or bleed

- BP + feel the pulse
- IV Access & bloods
- Erect CXR+AXR
- Senior HELP

Examination



• ABDO EXAM

• **PR EXAM** if appropriate (i.e. if there is history of haematemesis/meleana, if you suspect obstruction, or if you think the patient may be faecally loaded)

• **VASCULAR EXAM** – feel the pulses!

History



1. SOCRATES - CHECK BOWELS

Associated symptoms should include urinary and gynae

2. PMHx including

- alcohol consumption
- constipation/diarrhoea
- Previous abdo/pelvic surgery
- BPH

3. REASON FOR ADMISSION

and most recent procedures/operations

For a non-acute situation think about **common causes** for in-hospital abdominal pain

- **Constipation** - remember this may present as overflow incontinence
- **Urinary retention**
- **Pre-existing pathology** e.g partial obstruction, Cholecystitis, Pancreatitis, Gastritis (ulcer, GORD, infective causes),
- **UTI** (catheterised?)
- **Infection** e.g C.diff

Investigations



Consider:

- Bloods - FBC, U&E inc Ca²⁺, LFT, amylase, coag, **X-match** if signs of bleed
- AXR/ erect CXR
- ECG
- Dipstick urine, MSU or CSU
- Stool sample (C.diff if on abx)

Discuss need for abdo USS/CT abdo/pelvis with senior



Medication Review

Unless this is an ACUTE situation you should focus on symptom control when out of hours.

Consider holding:

- NSAIDS if suspect gastritis/GOR
- OPIATES if constipated

Consider starting:

- OMEPRAZOLE/PRN GAVISCON
- Analgesia – Pain ladder (not NSAIDS!) Try BUSCOPAN (see BNF) for any cramp like colicky sounding pain
- Laxatives or enema if constipated. Only use an **enema** if patient is **faecally loaded**.
- Antibiotics if suspect UTI- check previous MSUs

Plan



Depends on working diagnosis/impression

- Keep NBM until diagnosis made
- IV access +/- FLUIDS
- Analgesia
- Monitor BP & urine O/P ?Catheterise
- Consider NGT if vomiting
- Keep details and check on them later

Hint

Most in-hospital abdo pain is not an emergency and this plan will be a bit excessive for the majority of cases. Constipation and/or pre-existing chronic pathology is the leading cause of abdo pain in this group of patients unless they are post-op. Symptomatic treatment is most often sufficient.

ATSP Re: AGITATION/CONFUSION

Initial Assessment



ABCDE
BM



Is patient in PAIN?
Fluid balance
TEMP, AMT, GCS
?SEPTIC/LRTI/UTI

Examination



- Chest and Abdo Exam
- **NEUROLOGICAL EXAM** - Likely to be limited
- Exposure for **source of sepsis**, including venous access, catheters, wounds/sores.
- Signs of **head trauma or fractured neck of femur**, especially if patient has fallen
- ?Smelly Urine

History



Is this person normally like this?
Any history of dementia?
How/When have they changed?
Any precipitants e.g meds/alcohol withdrawal?
Liaise with family/carers for collateral history to establish the patients baseline

THINK ABOUT RISK FACTORS for:

- Sepsis - Lungs, skin, UTI, recent surgery
- Hypoxia - PE, pneumonia, respiratory depression
- Pain (including constipation / urinary retention)
- CVA/TIA
- Hypoglycaemia
- Head injury or #NOF (?recent fall)

Treat the reversible causes **before** prescribing any sedatives

Investigations



- Consider (according to clinical picture)
- **Bloods:** FBC, U&Es inc Ca²⁺, LFTs
 - **Dipstick / MSU**- check previous MSUs and check catheter for signs of infection
 - **Cultures & Lactate** (remember the sepsis six) if temperature has spiked
 - **CXR**
 - **ABG** if patient unwell
 - **?CT** head (senior decision)

Medication Review



Notorious drugs that cause confusion:

- **OPIATES** especially **TRAMADOL**
- **BENZODIAZEPINES**
- **INSULIN** (too much!)
- **ZOPICLONE**

Plan



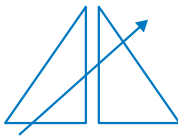


Only use sedation if you think the patient is putting themselves or others at **risk of harm** NOT if they are just being disruptive. **ALWAYS** discuss with senior first before prescribing sedatives.

DO NOT SEDATE PATIENTS WHO HAVE FALLEN AND MAY HAVE SUFFERED A HEAD INJURY

- Regular (2-4hrly) nursing obs, in well lit room
 - Treat suspected cause +/- analgesia if necessary
 - **Regular ward staff** must review bloods/ try and **elicit cause** for change in mood/AMT
 - Once **serious** cause excluded:
 - For **sleeplessness**: - Zopiclone 3.75-7.5mg PO
 - For **agitation**: - Lorazepam 500mcg PO or Diazepam 1-2mg PO (discuss with senior if you are unsure)
 - **Haloperidol** check BNF for indications and doses
- N.B. NICE Guidelines recommend Haloperidol to treat delirium check BNF for indications and doses

Check your trust guidelines for the reducing regimen prescription for alcohol withdrawal. A separate prescription chart may be required.

EXAMPLE OF DOCUMENTATION: ATSP Re: **BLOOD IN CATHETER BAG**

Name of Dr: Melanie Crowther, FY1 Bleep 1234		Patient Details: NAME, DOB, Hosp No	
<p>A A V P U Speaking full sentences RR 17</p> <p>B Sats 98% on air</p>	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Description:</p> <p>Chest clear</p> <p>Good bilat A/E</p> </div> </div>		
<p>C HR 86 reg BP - lying: 139/72 - standing: 132/74</p> <div style="border: 1px solid red; padding: 5px; margin-top: 10px;"> <p>Fluid balance IN: 1500 ml/12hr OUT: 1200 ml/12hr</p> </div>	<div style="display: flex; align-items: center;"> <p>HS</p>  <p style="margin-left: 20px;">+ 0</p> </div> <p>JVP Not raised</p> <p>Calves Soft and non tender. No oedema</p> <p>CRT < 2 secs</p> <p>Mucus membranes Moist, well hydrated</p>		
<p>D Temp 37.2 AMT 10/10</p> <p>E BM N/A Agitation/mood no change</p>	<p>Further relevant examinations</p> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <p>Inspection of catheter site</p> <ul style="list-style-type: none"> No evidence of trauma <p>Appearance of urine</p> <ul style="list-style-type: none"> 520ml in bag. Blood stained but translucent. No clots. </div> </div> <p>BS: normal, Soft and non-tender, No organomegaly No ascites Bladder not palpable</p>		

Investigations

Bloods

	prev	now		prev	now
Hb	11.1		Na	138	
WC	8.9		K	4.2	
Plt	435		Cr	198	
MCV	89		Ur	9.8	
INR	1.1		CRP	57	

History

Any relevant PMHx? e.g. TURP No

Past Hx of same thing? None previously

When was catheter put in? Catheter inserted 3/7 ago

Any record of difficulties? Doctor was called to perform as several nurses struggled to pass tube

Why was pt catheterised? Urinary retention

Any immediate distress or raised EWS? No

Medication Review

Consider holding:

Clexane and PO anticoags

MUST CHECK WITH SENIOR FIRST

Patients may be on anticoagulants
e.g for AVR

Plan

- 1.) Ensure IV access
- 2.) Send bloods FBC, U&E, CROSS MATCH, CLOTTING
- 3.) Regular obs (2-4 hourly)
- 4.) Strict fluid balance recording (maintain urine o/p >30mls/hr)
- 5.) Change catheter bag (to re-measure with time)
- 6.) Dipstick urine and send for CSU
- 7.) Consider urology review for 3-way catheter if clots present

SIGNED M. Crowther GMC 7895432

ATSP Re: DECREASED GCS

Initial Assessment



ABCDE
GCS
PUPILS
BM +/- Ketones

AIRWAY & OXYGEN!!
=====
=====
=====
Consider anaesthetic support



?COLLAPSE/SEIZURE - ?TRAUMA
?DRUG TOXICITY
?HYPOGLYCAEMIA

Examination



Chest and Abdo Exam (Quick full assessment)

NEUROLOGICAL EXAM

- Reflexes inc plantars
- PUPILS

History



Look at medical notes yourself.

Commonly hypoglycaemia or opiate toxicity
but must rule out any serious acute events

Think about RISK FACTORS for:

- Sepsis
- Stroke or MI
- Low or high BM
- Drug toxicity (opiates/sedatives)
- Renal Failure

Investigations



Consider (according to clinical picture)

- Bloods
- Dipstick Urine
- CXR
- ECG
- ABG

Medication Review



Notorious drugs that cause sedation:

- OPIATES (OD)
- BENZODIAZEPINES

Plan



Treat suspected cause +/- analgesia if necessary

- **Opiate OD:** Naloxone/"Narcan" 400mcg IV and repeat until responsive
In opioid toxicity reversal with naloxone produces instantaneous results once it has reached therapeutic levels. Remember it is very short acting and the patient may require a naloxone IVI depending on the amount and nature of the opiate OD. Refer to the BNF or local trust policy for this and discuss with a senior first.
- **Low blood sugars:** **get senior help** if causing significantly reduced GCS. Need to consider 10-25% dextrose IVIs. If GCS 14+ give lucozade and check BM in 30mins. Nurses should already have given something called HYPOSTOP if patient is known diabetic before calling you as it does not require a prescription.
- **Benzodiazepines:** unlikely with in-hospital patients but the reversing agent is FLUMAZENIL. You should never be using this on your own and most wards do not stock it anyway. Regular (2-4hrly) nursing obs, in well lit room

If you are in ANY DOUBT or suspect an acute event has occurred you MUST seek SENIOR HELP IMMEDIATELY!

ATSP Re: DYING PATIENT

Initial Assessment and Examination

A V P U

- A** - is this obstructed? Are there excess secretions?
- B** - is respiration regular or agonal?
- C** - is patient tachycardic? **This may be only sign of pain**
- D** - is the patient agitated or uncomfortable?
 - is patient vomiting or c/o nausea?
 - is the patient having seizures?
- E** - is the patient itchy?

History

- Are the patient and family aware of the situation?
- What are their instructions about being contacted if patient deteriorates e.g. in middle of the night?

Medications for symptom control

- **Pain/shortness of breath:** Morphine
- **Nausea/vomiting:** Levomepromazine
- **Secretions:** Glycopyrronium
- **Restlessness/agitation:** Midazolam
- **Itchiness:** Chlorpheniramine (Piriton)

See your local Trust guidelines on end of life prescribing, if available, which should advise on the conversion of opioids. Don't forget that doses may need to be adjusted for patients with a reduced eGFR.

Aim for a senior review as soon as possible to enable an end of life care plan to be made, taking into consideration the patient's wishes.

Remember: Tailor your prescription according to your assessment and listen to the nurse caring for them. Each patient will have different requirements, depending on their symptoms. Prescribe the medications PRN (or via a syringe pump if necessary – e.g. if the patient has required two or more doses in the last 24 hours). **Do NOT withdraw life-prolonging medications e.g. antibiotics – this is a consultant's/MDT decision**

Further info available in the NICE Guideline: Care of dying adults in the last days of life.

After Death

Go and see the body.

Document: Your **name and bleep number**

- "Called to confirm death. No vital signs."
- Assess for cardiopulmonary arrest for 5 minutes (document combination of no central pulse on palpation, no heart sounds on auscultation and no respiratory effort).
- Note absence of pupillary light reflexes (Fixed dilated pupils).
- Note absence of corneal reflexes.
- Note absence of pain response to supra-orbital pressure.
- Document time of death (this is the time the above criteria are fulfilled).
- Document whether or not patient is fitted with pacemaker / radioactive implant if you have access to this information
- You DO NOT need to put a cause of death if you don't know the patient, unless already clearly documented in notes
- You DO NOT need to write a death certificate
- Whether or not NoK informed
- RIP

ATSP Re: FALLS/COLLAPSE

Initial Assessment and Examination



ABCDE
GCS
BM

For **Head Trauma** ensure you document the following

1. Mechanism of injury
2. Any LOC/Reduced GCS/Confusion / Amnesia
3. Any vomiting or seizures
4. Head examination eg. Bruising/ Laceration/Boggy swellings.
5. Full neurological examination
6. Medication Hx (e.g. warfarin)
7. Always plan for neuro obs
NB. Inform senior if any red flags.



Signs of trauma:

- Head and neck
- HIPS

Neuro exam
Lying-Standing BP

History



- Always take a **FALLS HISTORY** but remember you are focussing on making the patient **SAFE** rather than diagnosing a cause for their fall.



RISK FACTORS for:

- Mechanical Falls
- Stroke
- Low BM
- Drug toxicity (opiates/sedatives)
- Arrhythmias
- Seizure
- Infection



Investigations



Depends on history and exam findings. Consider:

- Xray imaging
- Lying/Standing BP (if safe to stand)
- ECG
- Bloods
- Urine Dipstick
- CT head – refer to NICE guidelines criteria (and discuss with senior first)

Medication Review



Consider withholding the following:

- **Antihypertensives**
- **Sedatives**, until head trauma ruled out
- **Warfarin /anticoagulants** if patient is at risk of falling again or if head injury sustained. Discuss with senior first, patient may have artificial valve replacement.
- **Inform nursing staff of any changes**

Plan



- Regular obs
- Always consider neuro obs if possibility of head injury
- Consider adaptations to bed space or nursing supervision to reduce chance of further falls
- Address underlying cause if appropriate

Further info available in the NICE Guideline: Head Injury assessment and early management

ATSP for: FLUID REVIEW

Assessment for repeat prescription



1. The **REASON** for their fluids: (NBM/sliding scale/unwell/septic/ unsafe swallow) and the **PURPOSE** (e.g. resus vs. maintenance)
2. Check **FLUID** status – check for overload/dehydration. Input -Output chart
3. **CHECK U&E** paying attention to K+ requirements. Don't just rewrite fluids without checking most recent U&Es. If no bloods for >24-48hrs and on regular fluids, **repeat U&E before re-prescribing**. Write a blood card for next appropriate monitoring so it doesn't get missed.
4. Consider the patient's Na/K/total fluid/glucose requirements, taking into account their weight.
5. Check drug chart for PO electrolyte supplements and diuretics. If patient is receiving diuretics and fluids simultaneously, discuss with senior.

More info: [NICE guidelines for IV fluid therapy for adults in hospital](#)

History



Ensure patient is not fluid restricted for any reason. i.e. heart failure, oedema and ascites.

Variable Rate IV insulin Infusion (VRIII) re-prescription

Most hospitals have their own guidance – use this if available. Re-prescribe the VRIII on the fluid chart, if your trust does not have a standard prescribing proforma. Some patients will have an individualised VRIII. BMs are monitored every hour by nursing staff and infusion rate is altered accordingly.

In the infusion pump:

- 49.5mls 0.9% NaCl + 50 Units Actrapid insulin (this provides concentration 1 unit/1ml)
- KCl may also be added depending on the patient's levels. If <3 add 20mmol if 3-5 add 10mmol.

Blood Glucose Level mmol/L	Standard scale Units of insulin/hour	Augmented scale Units of insulin/hour
<4	0*	0*
4-8	1	2
8.1-12	2	4
12.1-16	4	6
16.1-20	5	7
20.1-24	6	8
>24	8	10

* Treat hypoglycaemia and stop infusion for 20 minutes. Re-check BM again before restarting. Prompt restarting minimises risk of ketosis.

More info: diabetes.org.uk

High BM

A high BM is rarely an emergency in hospitalised patients. However, make sure you:

1. **Check BM charts for previous readings. Is this a new problem?**
2. **Check urine or blood for ketones.**
3. **Check ABG if patient looks unwell. If this is the case they are likely to have a high EWS so manage appropriately. Consider whether this could be DKA or HHS (hyperosmolar hyperglycaemic state)/ HONK.**
4. **Document your findings and action taken (if any)**

Actrapid is sometimes prescribed if patients are not on a VRIII, but seek senior advice before doing so.

ATSP Re: HAEMATEMESIS/COFFEE GROUND VOMIT/MALAENA

True Haematemesis or Malaena is a medical emergency and will often be accompanied with a high EWS. Treat accordingly if this is the case. In-hospital patients often suffer simple coffee ground vomits without any systemic disruption but must still be considered as a potential emergency

Initial Assessment



A V P U
ABCDE



IV Access and bloods
Work out EWS

Examination



Chest Exam

ABDO EXAM

- Any signs of perforation? Tender?
- **PR EXAM** – ALWAYS check for evidence YOURSELF even Haematemesis/coffee ground vomit

History



If pt has had significant upper GI bleed:

1. Assess for tachycardia. A significant **postural drop (>20mmHg)** in BP may be noted
2. The urea will usually become proportionally higher than creatinine, often with little other evidence of renal failure

- Remember Hb won't drop immediately after a GI bleed - therefore normal Hb isn't reassuring.

RISK FACTORS for GI Bleed:

- Gastric irritant medications (NSAIDs)
- Alcohol/Alcohol-related liver disease
- Lack of gastro-protective medication
- Ulcers
- Reflux/GORD
- Persistent vomiting
- Endoscopy/stenting procedures
- Post abdo surgery

Investigations



Mandatory:

- Bloods - FBC, U&E including Ca2+, LFT, INR and clotting, **X-match** send as URGENT

Consider:

- AXR/ erect CXR
- Urgent endoscopy if Hb has taken massive drop from previous or is very low i.e. <7 Seniors definitely need to be informed before considering this!
- Check BP lying and standing if patient stable enough to do so
- VBG

Medication Review



WITHOLD:

- Any anti-coagulants
- NSAIDS

CONSIDER:

- Antiemetic
- PPI (lansoprazole is indicated for patients on aspirin and clopidogrel, omeprazole if not)

Plan



- Consider activating massive haemorrhage protocol if large bleed (each trust has a local trust haemorrhage protocol)
- Keep NBM until ward team assessment / until you are satisfied the patient is stable
- IV access +/- FLUIDS
- Regular nursing obs - recheck one hour later and 2 hourly thereafter
- Fluid balance. Monitor urine O/P and maintain to >30ml/hr.
- Keep details and check on them later

NB Patients are not normally transfused blood products over night unless it is an emergency. IV fluids will prevent hypovolaemia and its consequences. If you think your patient looks a bit dry or is slightly tachycardic etc then stay on the safe side and run through some saline (unless otherwise contraindicated!)

ATSP Re: HIGH EWS (General Assessment)

NB always ask nurses for VALUES OF PARAMETERS and what they are COMPARED TO NORMAL

Familiarise yourself with your trust guidelines on response to EWS



Initial Assessment



Examination



Possible CAUSES to consider

A	Patients own or compromised RR, sats	CHEST- THOROUGH clinical respiratory exam is vital to guide further management	Respiratory - Pneumonia - PE - Pneumothorax	- Asthma - COPD - Respiratory failure
C	HR, BP, CRT, fluid balance	HS JVP Calves Mucus membranes CRT	Cardiovascular: - MI - Heart failure - Pulmonary oedema	- Renal failure - Dehydration - Fluid overload
D	Temp, BM, GCS or AVPU		Abdominal/other - AAA - Bowel perforation - Peritonitis	- DVT - Sepsis
E	Exposure			

Investigations- depend on scoring parameters



Consider

- ECG
- Urine dip
- ABG
- Bloods, blood cultures, lactate
- G&S and X-match if bleeding suspected
- CXR

SEPTIC SCREEN

- **CXR**
- Urine **Dipstick**
- **Cultures:** Blood, Urine (MSU), Sputum, Stool
- **Swabs** from likely sources e.g wound, bed sore, throat, eye, cannula, catheter/drain site.

Medication Review



Review Kardex for any **IATROGENIC** causes of above e.g NSAIDS/warfarin, bleed.
Is the patient over sedated?

SYMPTOM control

- Is the patient in **pain?**- analgesia
- Is the patient **vomiting?**- antiemetic (IV/IM)
- Is the patient **dehydrated?** - PO/IV fluids
- Is the patient **septic?** - What is the source?
- **Antibiotics** (see trust guidance)
Should the patient have been on prophylactic LMWH? - PE

History - ALWAYS look in the notes!



Has the patient suffered an acute event?
Has anything **CHANGED** and **HOW/ WHY** has this happened?

working diagnosis

Plan



A high EWS can often resolve with **SYMPTOM control**. E.g bring the BP up and tachy/high RR may resolve.

1. Regular nursing obs
2. Treat suspected cause
3. Strict fluid balance +/- catheterisation if patient is unwell enough
4. Analgesia and general symptom control
5. Review your treatment/action- has it had an effect?
Senior review if worried

ATSP Re: HYPERKALAEMIA (stable patient)

If patient is symptomatic/unstable this is a medical EMERGENCY and needs a senior doctor involved

Initial Assessment



A V P U
ABCDE

ECG



Unwell or stable?
Fluid balance

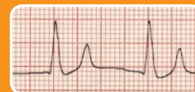
Examination



CHEST and CVS
Hydration



ECG



ECG changes in hyperkalaemia:

- Arrhythmias
- Prolonged PR interval with flattened P waves
- Wide QRS with slurred ST segment
- Tall, peaked T waves

History



- Is this acute?
- Is it a chronic accumulation?
- Does the patient have CRF?
- CARDIAC history
- LOOK at FLUID Px charts
- Is patient diabetic?
- Is the patient septic?
- Symptoms e.g palpitations/dizziness

Medication Review



- Diuretics- K+ sparing or losing?
- ACE/A2RB inhibitors e.g. ramipril/ losartan.
- NSAIDS
- IV Fluids
- Potassium supplements IV/PO
- Nutritional drinks

Investigations



- ECG
- ABG - helpful if you suspect a spurious result. If pH <7.2 consult senior advice urgently.
- Bloods – Repeat sample if unsure of accuracy of hyperkalaemia e.g. haemolysis.

Plan



Hyperkalaemia treatment - always follow any local guidelines if available. As a general rule:

- If <6.5 AND WITHOUT ECG changes:
Insulin and dextrose IV- refer to local trust policy for exact instructions. If unable to find then 10 units of soluble insulin in 250ml of 10% dextrose IV over 30-60 mins. (50% dextrose no longer advised)
- If >6.5 OR WITH ECG changes:
Calcium gluconate 10ml of 10% IV over 5 min for cardiac protection (more slowly if patient takes Digoxin). Ensure patient is on cardiac monitoring.
Insulin and dextrose IV then INFORM A SENIOR as patient may well need:
Calcium resonium PO 15mg QDS. Causes constipation so write up a laxative PRN.
Salbutamol 5-10mg neb

Hold medications as appropriate (see above)

REPEAT BLOODS post treatment, - Haemodialysis may be required in persistent hyperkalaemia (>7mmol/L), metabolic acidosis (pH <7.2), encephalopathy. Consult senior advice.

ATSP Re: **LOW URINE OUTPUT** (catheterised patient)

Initial Assessment



ABCDE
CATHETER - IS IT BLOCKED?



?SEPTIC

Assessment of fluid balance



1. Check the fluid chart and work out total input and output (usually over 24hrs but patient is commonly post-op so calculate from the time since they returned from theatre if this is the case).
2. Remember the urine output should be 0.5ml/kg/hr minimum.
Don't forget to account for parenteral feeds, stoma output and insensible losses.

Fluid balance over 4 hours e.g post op

Input	500ml	Output	Urine: 100 ml
			Insensible losses: 200 ml
			Stoma: 500 ml
TOTAL	500ml	TOTAL	800 ml
FLUID BALANCE = - 300ml i.e patient is DRY!!			

Examination



CHEST - is the patient fluid overloaded?
ABDO EXAM

- Tender? Urinary retention? Note post-op ileus can cause urinary retention
- Stoma site – is it infected?

Look for acute serious pathologies and try to correct these

History



- Always remember to look at the notes. This problem is commonly seen in post op surgical patients.
- Check which operation they've had and any important details on the op notes before you speak to senior doc.
- Ensure that the patient is not fluid restricted e.g. CCF, ascites.



Think about RISK FACTORS for:

- Dehydration. Look for potential fluid losses e.g. vomiting, diarrhoea, poor oral intake, high stoma output
- Urinary obstruction e.g nature of op/co-morbidities
- Infection/Sepsis
- Drugs e.g. anticholinergics

Investigations



Consider:

- Bloods - FBC and U&Es to monitor renal function
- AXR
- Dipstick urine, MSU or CSU
- Stool sample (stool sample if diarrhoea present)
- Septic screen

Discuss the need for imaging with senior if suspecting intra-abdominal sepsis

Plan



- Often all that's needed is a fluid challenge of crystalloid e.g. 0.9% NaCl, (check local guidelines for first line fluid choice) Get nurses to run it through stat and check o/p no more than 1hr later. If patient is simply dehydrated their urine o/p should have picked up from this. CAUTION IN CCF/CRF patients!!!
- Correct underlying cause once diagnosed
- Monitor BP & urine O/P (maintain urine o/p to 0.5mg/kg/hr and document this instruction.)
- Consider diuretics (stat dose 40mg furosemide IV) if you think the patient is fluid overloaded (usually with positive fluid balance), however use with caution and always check previous U+E's. Consult with senior doc before doing this, you could easily exacerbate the problem!

ATSP Re: SHORTNESS OF BREATH

Make a very quick decision as to whether or not you are confident in treating this patient on your own. Patients who are short of breath can deteriorate very quickly indeed. Call for a Senior immediately if you are unsure



A V P U

ABCDE

OXYGEN!! (If oxygen saturations <94% give high flow oxygen via non rebreathable mask initially, then reassess following further investigations.)

ABG



**Anaphylaxis??
Pneumothorax??**

Compare sats to normal or target sats, if documented

Cardiac or respiratory cause?

Examination



- **THOROUGH exam** is vital to guide management
- Hydration assessment



JVP and ankles
Calves / Thighs

History



- **Onset**
- **Duration**
- **Exacerbating or relieving factors**
- **Check clerking proforma for co-morbidities**

Ask about **ASSOCIATED FEATURES** and **RISK FACTORS** for:

- DVT/PE
- Overload, e.g. recent transfusion/fluid therapy
- MI
- Infection (hospital acquired??)
- Anxiety
- Asthma/COPD exacerbation
- Recent surgery (atelectasis)

Investigations- depending on scoring parameters



- ABG – immediately, then repeat after treatment?
- CXR: Check most recent one. **Don't be afraid to repeat CXR if things have changed clinically. Order a portable film if you feel the patient is too unstable to be transported - discuss this with the nurses.**
- ECG
- Cultures: Blood and sputum if appropriate and/or check previous for sensitivities
- Bloods

Medication Review



**Is patient on thromboprophylaxis?
What can I give?**

- Think about your choices for Oxygen Therapy depending on patient's chronic disease status and ABG result!
- **Wheeze:** Salbutamol 5mg neb+/- atrovent 500mcg neb (can be given with O2)
- **LRTI/CAP/HAP:** Antibiotics (check local guidelines)
- **Pulm Oedema:** Furosemide 40mg IV

Plan



- Stay with patient until you are happy they are stable
- Regular observations (such as 1-2 hourly)
- Keep a watchful eye on their bloods/CXR etc

**CALL FOR SENIOR HELP IF YOU ARE UNSURE:
THESE PATIENTS CAN DETERIORATE VERY QUICKLY INDEED**

In patients with shortness of breath in the last days of life/end stage respiratory failure, an opioid can be considered for symptomatic relief. Always consult a senior doctor before prescribing, as per nice guideline on care of dying adults in the last days of life.

ATSP Re: TACHYCARDIA/PALPITATIONS

TACHYARRHYTHMIAS ARE A MEDICAL EMERGENCY if patient has developed a new tachyarrhythmia on ECG (SVT/Fast AF), a senior needs to be involved. Make sure you perform the following:

Initial Assessment



A V P U
ABCDE **BP**



EXPOSE for sources of sepsis
PULSE: REGULAR OR IRREGULAR?

Examination



- Chest and Abdo Exam
- Fluid balance - is patient dehydrated?

History



- Is the patient symptomatic?
- **CARDIAC HISTORY**
- Previous cardiac history and **RISK FACTORS** for MI, AF, Arrhythmias
- Previous ECGs
- **For arrhythmias: IS THIS NEW? Assume it is unless proven otherwise**
- Look at Kardex for any anti-arrhythmic medications for clues
- How much tea and coffee has the patient had?



Possible reasons for simple tachycardia

- Pain
 - Anxiety
 - Sepsis
 - Hypovolaemia – bleed/dehydration
 - PE
 - MI
 - Medication side FX
- Has patient been on any drugs which put them at increased risk of the above? E.g Warfarin/ NSAIDs- bleed. Should the patient have been on prophylactic LMWH?-?PE

Investigations - depending on scoring parameters and clinical judgement



Mandatory:

- ECG

Consider:

- Routine bloods +/- CULTURES + lactate for septic screen (remember the sepsis six) if temp spiked
- X-match if suspect patient is bleeding
- Urine Dipstick
- Troponin
- D Dimer



Medication Review

IATROGENIC causes of tachycardia

- SALBUTAMOL overuse
- EYEDROPS e.g PHENYLEPHRINE
- THEOPHYLLINE toxicity
- DIPYRIDAMOLE

MEDICAL MANAGEMENT (check the BNF for interactions)

Consider **Digoxin** or **Bisoprolol** (unless contraindicated e.g. low BP / Asthma) once cause has been identified, but discuss with senior first.

Plan - very different for acutely unwell patients and those who are stable



1. IV access +/- fluids and bloods
2. Follow Tachyarrhythmia algorithm if appropriate- senior should really be involved in this!
3. Regular nursing obs (can do temp only every 30mins/half hour if you think have RFs for sepsis)
4. Treat suspected cause, often this is actually SYMPTOM CONTROL and you may find that simple, stable tachycardias resolve once you have the following under control:

- PAIN
- AGITATION
- ANXIETY
- DEHYDRATION
- SEPSIS
- VOMITING

COMMONLY PRESCRIBED DRUGS AND DOSES

Below is a list of commonly prescribed drugs to aid your memory. Please always check in the latest BNF if you are prescribing for the first time or if you haven't prescribed a drug for a while, as doses, cautions and contraindications can change. Many Trusts have prescribing guidelines for the groups of medications below and these should be adhered to.

Always eye-ball a patient before doing so- the nurses may have the diagnosis wrong!

Don't forget to check for ALLERGIES, PMH and RENAL FUNCTION (if indicated). Look at KARDEX for any obvious interactions.

Most drugs you will prescribe on-call should be written in the PRN or 'once only' section if you do not know the patient.

ANALGESIA

Cautions NSAIDs in asthma/PU/CRF/IHD

Diclofenac is contraindicated in IHD, PAD, cerebrovascular disease and CHF

Buscopan is an anti-spasmodic and works on smooth muscle. Great for cramping abdo pain.

MEDICATION

PARACETAMOL
IBUPROFEN
DICLOFENAC/'Voltarol'

ROUTE

PO or IV
PO
PO / IM / PR

DOSAGE

500mg – 1g
200-400mg
75mg-150mg daily in divided doses

MAX/DAY

QDS
TDS

Pts with renal colic respond well to PR diclofenac

CO-CODAMOL (8/500 OR 30/500)
CO-DYDRAMOL (10/500)
CODEINE PHOSPHATE
BUSCOPAN

PO
PO
PO or IM
PO or IV

1-2 TABLETS
1-2 TABLETS
30-60mg
10-20mg

QDS
QDS
QDS
QDS

TRAMADOL
MORPHINE

PO
IV or PO

50-100mg
5-10mg

QDS
STAT

NB Opiates can cause nausea/vomiting and constipation. Always prescribe a PRN antiemetic and simple laxative

ANTI-EMETICS

You can try most of these in various combinations if previous attempts to control symptoms have failed.

Domperidone can cause ventricular arrhythmias. It is contraindicated in patients with cardiac conditions, severe hepatic impairment or those taking other medication which can prolong QT interval or potent CYP3A4 inhibitors

Ondansetron is very expensive! It's often reserved for chemo patients, don't use it as first-line.

METOCLOPRAMIDE/'Maxalon' PO or IM or IV 10mg
(dopamine antagonist- works directly on GIT) 10mg dose only if weight >60kg
CYCLIZINE PO or IV 50mg
(antihistamine – works centrally)

PROCHLORPERAZINE/'Stemetil' PO 5 - 10mg
'Buccastem' BUCCAL 3 - 6mg

DOMPERIDONE PO max 10mg TDS
(acts centrally on chemo receptor trigger zone)

ONDANSETRON PO or IM or IV 4 - 8mg
(5HT3 antagonist) BD-max 5 days

Metoclopramide should not be used post GI surgery for 3 days. It can also cause extra-pyramidal reactions and oculogyric crises. Beware of this though, the antidote is procyclidine 5-10mg IV/IM.

GASTIC REFLUX

GAVISCON
RANITIDINE
OMEPRAZOLE

PO
PO
PO

5-10ml
150mg
20mg

TDS
BD
OD

Key:

PU = peptic ulceration; CRF = chronic renal failure; IHD = ischaemic heart disease; PAD = peripheral vascular disease; CHF = congestive heart failure; GIT = gastrointestinal tract

SOB

Salbutamol causes tachycardia!

SALBUTAMOL	NEB	5mg	STAT/PRN	
IPRATROPIUM BROMIDE (Atrovent)	NEB	500mcg	STAT/PRN	(Max 2mg/day)
PREDNISOLONE	PO	30-40mg	STAT/OD	(5-7 days max)
HYDROCORTISONE (if acute SOB or angiodema)	IV	100mg	QDS	
FUROSEMIDE	PO/IV	40-80mg	STAT	

LAXATIVES

Stimulants:	SODIUM DOCUSATE	PO	50-200mg	TDS	(Max 500mg/day)
	BISACODYL	PO	5-10mg	ON,	
		PR	10mg	OD	
Osmotic:	SENNA	PO	7.5-15mg	ON	(Max 30mg/day)
	MOVICOL	PO	1-2 sachets	BD/TDS	
	LACTULOSE	PO	15ml	BD	
If faecal loading:	GLYCERINE SUPPOSITORY	PR	4g	STAT	
	PHOSPHATE ENEMA	PR	128ml	STAT	

In-hospital patients are often constipated often due to decreased activity and medications. Try tackling constipation using different pharmacological approaches i.e. don't Px movicol if already on lactulose.

ITCH/RASH

CHLORPHENAMINE	PO	4mg	TDS
(also known as "Piriton". Note side effects include drowsiness)			

AGITATION

DIAZEPAM	PO/SLOW IV	5-10mg
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SLEEPLESSNESS

ZOPICLONE	PO	3.75-7.5mg
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AGGRESSION

HALOPERIDOL	Check BNF for indications and doses	
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Do not prescribe sedatives without first seeking senior advice

ALCOHOL**WITHDRAWAL**

Guidance differs between trusts, so refer to local guidelines if available.

CHLORDIAZEPOXIDE (reducing regimen)

Day 1 and 2: 20-30mg QDS

Day 3 and 4: 15mg QDS

Day 5: 10mg QDS

Day 6: 10mg BD

Day 7 10mg Nocte

For antibiotic prescribing advice refer to your Trust policy. Remember to check for any available microbiology results which may guide you on antibiotic sensitivities.

PRESCRIBING OUT OF HOURS

Warfarin

You will often get bleeped to prescribe warfarin for patients you don't know especially over the weekend/evenings if your colleagues haven't done them. If your local Trust has guidelines on Warfarin prescribing, use them. **CHECK PATIENT IS NOT BLEEDING!**

Are you prescribing maintenance or loading dose?

LOADING: this is the regimen prescribed initially until INR stable and in target range. If rapid anticoagulation is required, NICE guidelines suggest 5-10 mg once a day for 2 days then check INR on day 3. (Instant anticoagulation requires heparin therapy – discuss with senior). For AF, less rapid anticoagulation is acceptable over a few weeks and doses can start at 1 or 2 mg each day.

MAINTENANCE: usual dose once INR established to keep within target range. Check yellow book for regular prescriptions.

• Once an INR has been obtained for one of your patients make sure you prescribe the warfarin for about 3-4 days then re-check. Mark open brackets on warfarin charts to indicate when you want the next INR to be checked (usually between 3-4 days in the initial period, or more frequently if there are difficulties establishing a maintenance dose.)

• **INR high** (but <5) - reduce the dose and/or 1-2 doses may need omitting.

• **INR <6** but >0.5 units above target – reduce dose or stop. Restart when INR <5

• **If INR is 6-8 and patient not actively bleeding** Stop Warfarin. Restart when INR <5. Discuss with senior to lower maintenance dose. Recheck INR at least 48hrs after as it takes between 48-72hrs for your change to have an effect.

Reason for LT warfarin Tx?

AF	2-3
Recurrent DVT	2-3
PE	2-3
Recurrent PE	3-4
Prosthetic heart valve	3-4



Check drug chart for **INTERACTIONS** which may affect INR. Discuss with senior/ day team/ pharmacy before stopping any drugs.

Common interactions:

- Inducers reduce effect of Warfarin. **REDUCES INR (PCBRAS)**
 - Phenytoin, Carbamazepine, Barbiturates, Rifampicin, Alcohol (chronic excess), Sulphonylureas.
- Inhibitors increase effect of Warfarin. **INCREASES INR (ODEVICES)**
 - Omeprazole, Disulfiram, Erythromycin/Clarithromycin, Valproate, Isoniazid, Cimetidine/Ciprofloxacin, Ethanol intoxication, Sulphonamides.

If actively bleeding and/or INR >8 discuss urgently with Senior for advice

Digoxin

You will occasionally get bleeped to review digoxin levels:

Toxicity is very worrying and would normally require the use of 'Digibind' which is basically an antidote for digoxin OD. You will need to get an ECG and assess the patient clinically before proceeding/getting senior help.

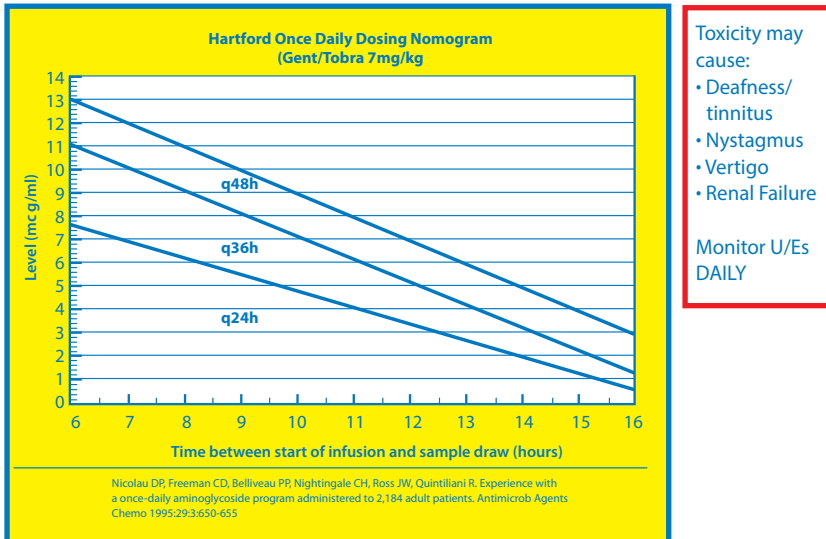
Sub-therapeutic levels are common! They are not so worrying but you should clinically assess the patient in particular their CVS paying particular attention to their pulse as you will definitely get asked about this if you ask for senior help.

If digoxin levels are out of range make sure you **check their K+** and keep a regular eye on it as this needs to be stable for digoxin to be a safe and effective choice of therapy.

Gentamicin

You may get bleeped to check the gentamicin levels of ward patients and subsequently prescribe the next dose. You may have Trust guidelines on this. If in doubt, discuss with your ward or on call pharmacist.

For once daily doses: The blood level needs to be taken 6-14 hours after the start of the **first** IVI. You are basically looking for the levels to be within therapeutic range. If they are not you need to refer to the **Hartford Normogram**. This is a chart which indicates WHEN the next dose should be according to how out of range the levels are. You **DO NOT change the DOSE**, just the **TIMING** of the next one (either 24, 36 or 48hrs later). Make sure, if you have been asked to take the blood yourself you note exactly how many hours post IVI the blood has been taken on the blood card, it may be another of your peers who has to review the level!



For TDS doses: The first level that needs to be recorded is after the 3rd/4th dose ensuring at least 24 hours of treatment is given. It should be taken 1 hour post IVI i.e. the PEAK or POST level and be between 3-5mg/L. A trough or PRE Dose level is taken approx 1 hour before any administered dose and should be <1mg/L. The reason for this is that they are on a TDS regimen so renal function needs to be closely monitored. It is important that gentamicin levels do not rise to toxic amounts, which is more common in patients with renal impairment.

General Hints and Tips for seeing patients out of hours

When answering your bleep find out:

1. Reason for bleep
2. Quick background info
3. Further relevant clinical info e.g. **OBSERVATIONS** and compare these to how they normally run.
If it's a patient with high EWS just inform a senior to make them aware and ready for action!
4. What they want you to DO (**PURPOSE** of call)
5. Ask for the following things to be ready when you arrive:
 - Notes
 - Kardex
 - Obs chart/nursing file
 - Equipment e.g cannulas/bloods/catheter etc
6. Give appropriate **instructions** if they need to do anything acutely before you arrive. For example if reason for bleep is Haematemesis ask for IV access and bloods to be taken or if a patient has spiked a temp of $>38^{\circ}\text{C}$ get the nurses or night practitioner to do cultures/bloods/lactate (remember sepsis six) before you arrive. It saves a lot of time and faffing around once you are on the ward.
7. Decide where this lies in your list of priorities or whether it is a job nurse practitioners can do to help you.

NB: Try not to have arguments with nurses on the phone, some of them are just starting out like you and may also be petrified, sometimes they need reassurance too!

When you get there:

Find the nurse who bleeped you (or requested the bleep!) and get a more detailed account of what's going on.

Eye-ball the patient before delving into notes or looking on the computer following the standard ABCDE assessment. It won't take you long to figure out if they are acutely unwell/ unstable or not!

Once you have done your initial assessment and any immediate management, document what you have done using a logical and systematic approach. This way you won't forget anything. You will also look really slick and competent, plus, you might find you paint yourself a picture of what's going on, even if you were clueless initially!

Sit down at a computer with the nursing file and medical notes and go straight for the clerking. It should give you a succinct list of P/C and other co-morbidities to create a more complete clinical picture. Flick through the ward notes and find anything you can read, it may be of some use. Look at the last entry in particular as there may be a plan of what to do should the situation you have been bleeped for arise!

Check PACS and the lab system for any recent imaging or tests. NB ALWAYS compare recent results to previous ones! Just go down the lists looking for cultures, unusual blood tests, INRs etc and document what you find. Sometimes the best summaries of a patient are created when someone manages them on-call! Be thorough at the beginning but if you are hard pushed for time refer back to the help sheets- they are designed to make you **SAFE**, not to make you a brilliant diagnostician who can cowboy their way through FY1 'House' style!

Have a good browse through the KARDEX looking at which meds may have contributed to the situation, which may have prevented it if they had been given and which ones you might need to initiate to make sure the patient is SAFE.

Once you have all this information create a PROBLEM list and from this document your IMPRESSION of the situation. Write a PLAN and document whether you involved a senior and their name and grade. Also document the amount of time you were there, sometimes you need to stay with a patient to see if your treatment works e.g fluids for low BP meanwhile you can scribble down everything you've done to save time!

Whenever you are assessing a patient think to yourself:

'What do I need to DO to make sure this patient is SAFE?' If this patient deteriorates or dies unexpectedly and you were the last doctor to see them you need to make sure your documentation is adequate. Your management, appropriate or not, will mean nothing if it has not been written down in the eyes of the law!

In summary:

- Answer your bleep in a systematic way- it will help you prioritise and become more efficient.
- Delegate certain tasks to nurses, don't be afraid of asking them, you are part of a TEAM!
- Prioritise your jobs and don't be afraid to off-load some onto your ward SHO, YOU are the one who gets bleeped first so you will be asked to do EVERYTHING!
- When you get to a patient:
 1. ABCDE approach ALWAYS!
 2. Document your initial assessment and management
 3. Review the nursing file for obs chart, fluid balance, warfarin charts, fluid prescriptions
 4. Review medical notes and clerking then summarise
 5. Review KARDEX
 6. Problem list
 7. Working diagnosis
 8. ACTION PLAN (use tick boxes for investigations you have ordered)
 9. **Keep their details (sticker on handover sheet) and make sure you check on them later or handover to day team.**

ALWAYS MAKE SURE YOU ARE SAFE, IF IN ANY DOUBT WHATSOEVER YOU MUST INFORM A SENIOR.

Disclaimer

The findings and conclusions in this document are those of the authors, who are responsible for its content. All information is to be interpreted on an individual basis in context with the clinical situation to which it refers. The information is not a replacement for local guidelines and protocols, nor is it a document with any legal standing. No statement in this document can be construed as an official position of Health Education England.

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