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Medicines Safety and Management

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Clinical Education June 2020

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Housekeeping

- Fire procedure
- Facilities
- Refreshments
- Mobile phones
- Non smoking
- Clean environment
- Neighbouring courses

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Principles of safe handling and administration

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Learning Aims

- To reinforce the essential principals of safe medication administration
- To focus on the importance of medicines safety and provide some background
- Provide some information about what impact you can have on patient safety.
- Be aware of your responsibilities and accountability towards medicine management
- Prompt you to use appropriate reference sources and the Medicines Policy

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The Six Rights

ALWAYS take the Prescription to the patient and perform checks against it.

- **RIGHT PERSON**
- **RIGHT MEDICATION**
- **RIGHT DOSE**
- **RIGHT TIME**
- **RIGHT ROUTE**
- **RIGHT DOCUMENTATION**

If you are unfamiliar with the medication, what it is used for and/or the normal dose then look it up in the BNF, patient information leaflet

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Professional Knowledge and Understanding

Be Aware of:

- Therapeutic use
- Side effects
- Usual dose
- Precautions
- Contra-indications
- Local trust policies

If in doubt:

- Do not administer the medication
- Seek further advice from;
  - Senior colleague
  - Medical team
  - Pharmacist
  - EPMA/BNF/Medusa
  - Other resources such as SOPs and trust policies

Responsibilities of the Registered Nurse/ODP

- Administering prescribed medications as regular or as required (PRN)
- Ordering and receiving medicines
- Transferring medicines
- Safe storage and disposal of medicine
- Recognising accountability around verbal orders - emergency drugs not to be actioned unless life-threatening
  - IM (Intramuscular) adrenaline 0.5mg for anaphylaxis, Glucagon, Glucose, Naloxone, Atropine

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Accountability

- When you are administering a medication you are responsible and accountable
- YOU SIGN to say you have administered the medication which means you have witnessed the patient take the medication. NEVER leave medications on a patients bedside table.
- If the patient has opted to self medicate, you remain accountable for the supervision of patient administration and must sign to confirm as witnessed
- When you are the person performing the second check you are BOTH responsible and accountable for ensuring it is administered safely

Independent Checking of Medicines

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1st PERSON

1. CHECK:

Patient
Medication
Route
Dose
Time
Documentation

2. PREPARE dose

Do not influence each other

2nd PERSON

1. CHECK:

Patient
Medication
Route
Dose
Time
Documentation

2. CHECK prepared dose

Do you agree?

If you agree BOTH GO TO PATIENT WITH THE PRESCRIPTION

- Check ID
- Check Allergies – Check pump
- Administer dose
- Document dose

If you do not agree STOP and have a safety conversation

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Medicine round interruptions

- **It has been identified that nearly half of all medication errors reported nationally happen whilst nurses are preparing or administering medicines.**
  - Estimated 237 million medication errors per annum reported in UK (NHS England June 2018)
- The NPSA (2010) has recommended the wearing of coloured aprons when preparing and administering medication, to minimise interruptions.

Reduce the risk

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- Job roles
- Collect all supplement prescription chart e.g. warfarin
- Inform team
- Consider using a message board
- Ensure nutritional supplements are to hand
- Consumable equipment e.g. syringes, tablet cutter/crusher, medicine pots
- Stock supply of common drugs

Summary

- You should now understand the essential principals of safe medication administration
- Be able to focus on the importance of medicines safety and provide some background
- Be able to provide some information about what impact you can have on patient safety
- Be aware of your responsibilities and accountability towards medicine management
- Know how to access appropriate reference sources and the Medicines Policy

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Human Factors in Medication Administration

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Learning aims

- Awareness of Human Factors
  - Differentiate between System / Organisation and Individual Human Factors
- How medication errors occur
- Review case studies involving the intrathecal administration of vincristine
- Reducing the risk of medication errors

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Health

Drug errors cause appalling harm and deaths, says Hunt

By Nick Triggle
Health correspondent

19 minutes ago

Drug errors in England cause appalling levels of harm and deaths, Health Secretary Jeremy Hunt says, as data suggests mistakes are being made.

GPs, pharmacists, hospitals and care homes may be making 237 million errors a year - the equivalent of one mistake made for every five drugs handed out.

The study said most caused no problems, but in more than a quarter of cases the mistakes could have caused harm.

Drug errors could be a factor in more than 22,000 deaths a year.

The mistakes include:

- wrong medications being given
- incorrect doses dispensed
- delays in medication being administered

The researchers - drawn from Manchester, Sheffield and York universities - acknowledge that there is limited data in this area so the figures are very much best estimates based on previous research, some of it going back years.

But they believe the data is robust enough to warrant action.

A study in 2018 (funded by DOH) has revealed an estimated 237 million medication errors occur in the NHS in England every year

Why Consider Human Factors?

"It is estimated that at least 80% of errors are attributable to human factors at individual level, organisational level, or more commonly both"

National Patient Safety Agency

- > 80% of Healthcare Errors
- 50-70% of Aviation disasters
- 70% of Shipping incidents
- 60-85% of Shuttle incidents at NASA

What is Human Factors?

"Enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture, organisation on human behaviour and abilities, and application of the knowledge in clinical settings"

Dr ken Catchpole

- **Organisational design**
  The process by which organisational structure is created with systems and culture so that a company can operate in the most efficient and effective way

- **Systems Design**
  Looking at systems that have been put into place to assist the organisation.

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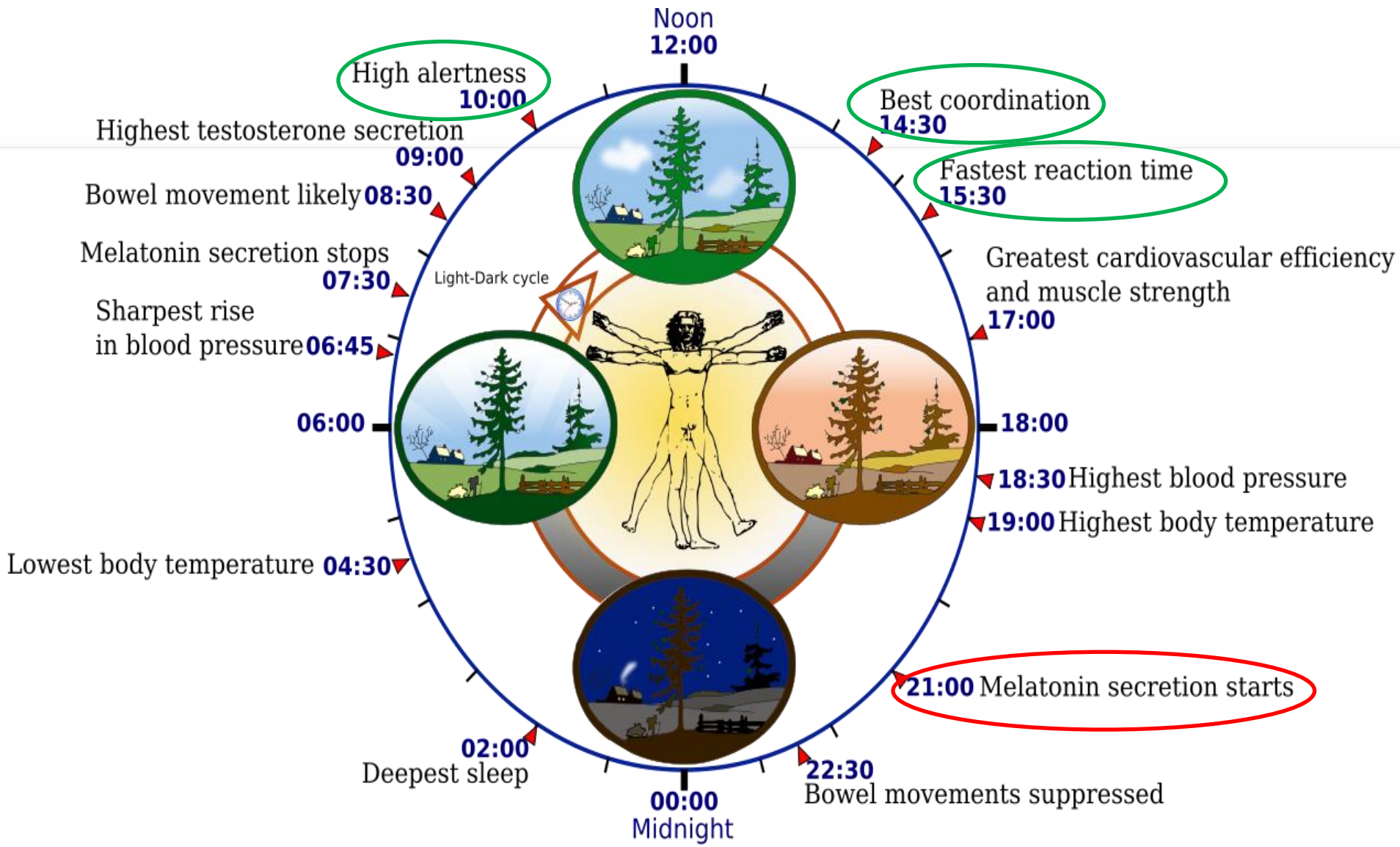

Elements of Human Factors?

- Situational awareness
- Communication
- Team working
- Leadership
- Stress management
- Decision making
- Prioritisation
- Assertiveness
- Personality and behaviour

Individual Human Factors?

- Fatigue
- Stress
- Emotional climate
- Mirrored poor practice
- Complacency
- Interruptions
- Two nurse-check adherence to policy
- Poor multi-tasking

Organisational Factors Influencing Performance

- Workload and time pressures
- Distractions / interruptions
- The environment – temperature; lighting; workspace; noise
- Insufficient resources/equipment shortages / failures
- Inadequate or absence of Standard Operating Procedures (SOPs)
- Organisational failure to understand error causation
- Failure to learn from error
- Poor or lack of training / education

Individual Causes of Medication Error

- Poor prescribing (prescription errors)
  - Route / dose / drug / concentration / time
  - Missed doses of critical drugs
- Poor administration practice
- Dispensing errors
- Unfamiliar drugs
- Mis-identification of patient
- Duplication of documentation
- Interruptions and distractions
- Communication breakdown

Ergonomics in Medicine

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nearly identical once t

Case Study – Intrathecal Vincristine

Equal Safe Health Care 2010;19:323-326 doi:10.1136/qshc.2008.030874

Error management

The quest to eliminate intrathecal vincristine errors:

a 40-year journey

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Case Study – Identified contributing factors

Organisation	Both / External	Individual
• Policy not followed regarding same-day procedures • Campbell not familiar with staff or environment – on his first day • Despite needing supervision Campbell's workload/responsibility actually increased • An assumption that the patient knew what the procedure was, rather than 'tell me what we are doing for you today' • Was consent informed? • No verbal checks with patient regarding identity	• Although the pharmacist disagreed with the procedures taking place, is he still accountable? • For the benefit of the patient both procedures on the same day (who actually benefits?) • External factors caused patient to be late – both procedures at the same time • Intrathecal register list didn't match online database • Problems with continuity of care due to illness, staff nurse called away, etc, leading to a potential breakdown in communication • Patient allowed to have her headphones in – was this accepted behavior? • Distractions during the administration of the drug • Junior doctor fatigued – he had just finished a run of nights?	• Knowingly deviated from policy regarding same-day procedures • Hierarchy, conflict between nurse/consultant – nurse challenged consultant • Hierarchy, conflict between pharmacist/consultant • Distractions throughout: phone calls I.T. register Bleep x 4 cardiac arrest • Increased stress levels – Campbell visibly flustered • Jnr Doctor went to fridge to collect methotrexate – it is stored at room temperature • Vincristine was collected instead – confirmation bias? It was the only drug there and it was for the patient • Staff nurse had methotrexate in her pocket • No verbal checks with patient – she was allowed to have her headphones • The vincristine clearly displayed 'For intravenous injection only'

Reducing the Risk of Error

Cefotaxime = cefoTAXime (antibiotic)
Cefuroxime = cefuROXime (antibiotic)

Epinephrine = EPINEPHrine (adrenaline)
Ephedrine = ePHEDrine (vasoconstrictor reversal of hypotension from spinal or epidural anaesthesia)

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Stay Safe 1: Acknowledge everyone makes mistakes

- Accepts that humans are fallible
- At some point even in the best organisation failure will occur
- Errors are consequences rather than causes
- Failures at the sharp end are often shaped by upstream factors

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Stay safe 2: follow policies

- Policies mean all staff work in same way- less chance of mistakes
- Staying within policies brings vicarious liability protection- like staying on the Yellow Brick Road

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Stay safe 3: administer with care

- Follow the six rights of medication administration
- Record all administrations
- Avoid distractions
- Wait if unsure
- Ask for help
- Inform immediately if an error occurs

Stay safe 4: Seek help

If in doubt, don't do it!

There is always help and advice available:

- Ward pharmacist
- Pharmacy Med Information line
- Pharmacy Dispensary
- Other nurses / nurse in charge
- Medical team /ANP'S
- On-call medical team /NP'S / Duty manager
- BNF, EPMA info, medusa

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Stay Safe 5:Report incidents

Why?

- So that action can be taken
- So that we can all learn
- Near-misses are equally important
- Change culture and/or operating procedures
- Prevent reoccurrence

Summary

- Awareness of Human Factors
  - Differentiate between System / Organisation and Individual Human Factors
- How medication errors occur
- Review case studies involving the intrathecal administration of vincristine
- Reducing the risk of medication errors

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Management of Medication-Relation Error

Learning aims

- Know what to do if you make an error
- Understand what happens when an error is made
- How to learn from it and share the learning to reduce the risk of it happening again
- Understand what impacts your judgement in safe administration and makes you more likely to make an error

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Some statistics

In 3 months on one site in Liverpool Trust we administered 1.2 million medications

We made 71 medication administration errors

That's less than 0.001% however any one of those mistakes could have been fatal for a patient

Our job is to reduce risk of making mistakes by performing the necessary checks to keep patients safe

How to reduce the risk?

- Always use the 6 RIGHTs
- Perform the second check as if you were the primary person checking and administering medication
- Wear your red tabard to reduce interruptions and distractions
- Communicate with the team you are about to start medication round and ask if anything is needed before you start
- When interrupted clearly communicate that you are administering medication and that you need to concentrate; give them a timeframe or a plan for what to do

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What action should you take if you have made a medication administration error?

Assess the patient's condition, perform all observations and take necessary action to ensure patient safety is maintained.

Ensure appropriate medical assessment and treatment is provided where necessary.

Report the incident to the Ward/Department Manager or person in charge immediately

Report the incident to the doctor responsible for the patient's care and seek advice about next steps, possible indications/complications and mechanism for monitoring

Report the incident to the ward pharmacist and seek advice about next steps, possible indications/complications and mechanism for monitoring. If error involved a Controlled drug Accountable Officer should be informed

Report the incident to the patient and their requested contact (this may be carer, relative who has been determined on admission) be open and honest and apologise.

Record the error and actions taken in the person's notes

Complete DATIX

Incident follow up

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- Informal counselling with Ward Manager or Matron
- You may be asked for a piece of reflective writing
- Competencies will be re-assessed
- You may be asked for a statement
- The learning from your error may be used to change practice, make improvements and be shared with the team anonymously
- You might be offered further support

Summary

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- Know what to do if you make an error
- Understand what happens when an error is made
- How to learn from it and share the learning to reduce the risk of it happening again
- Understand what impacts your judgement in safe administration and makes you more likely to make an error

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Critical medicines and Missed doses

Learning Aims

- Identify a critical medication
- Understand the time frame for administration of a critical medication
- Understand the difference between an omission and delayed dose
- Have oversight of the process of investigation of missed doses of critical medicines

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Critical medicines

There are 2 main categories of ‘Critical Medicines’

- Life Threatening Medicines are to be given within ONE hour of intended prescription time

- Critical medicines that must be administered at the prescribed time and for most this can be considered as plus or minus two hours of the time prescribed on the inpatient prescription.

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Drug omissions

Delayed or omitted dose of medicines can lead to patient harm (NPSA 2010)

- An omitted dose is a failure to administer a dose before the next scheduled dose is due

- A delayed dose is administration of a life threatening medicine 1 hour or more after the time the dose is prescribed or for a critical medicine 2 hours or more after the time it's prescribed.

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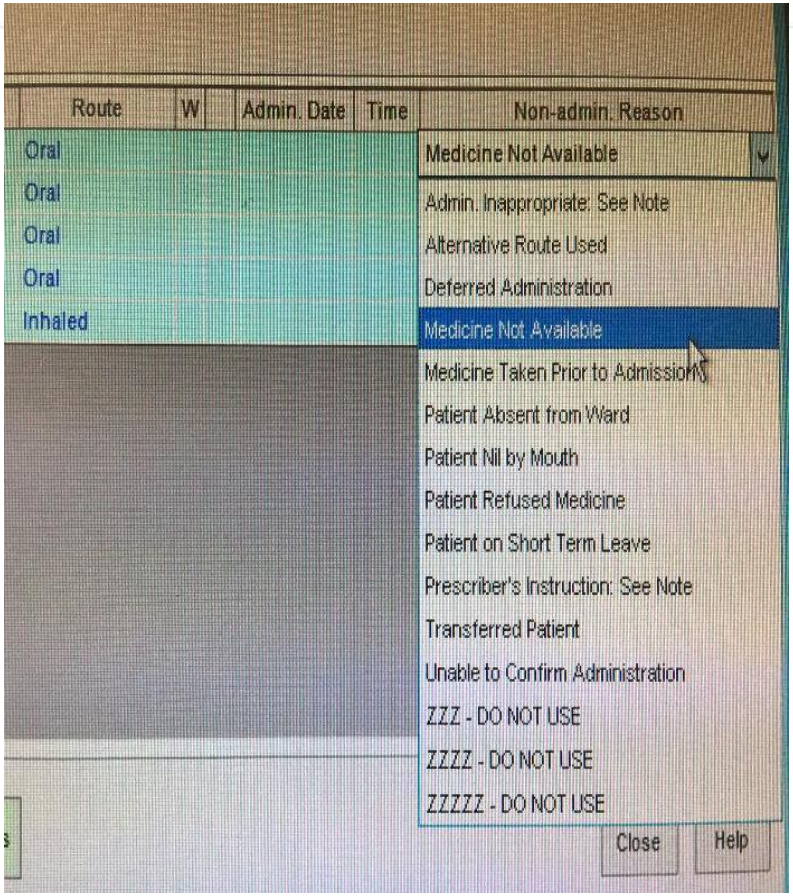
Documenting

- It is unacceptable to miss/omit a critical medication if the patient is asleep; to chart that the medicine is not available, or that the prescription is unclear.

- There are occasions when it is appropriate not to give a critical medicine but this MUST be clearly documented and communicated to the patient and within the multi-disciplinary team.



Scenario

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Night nurse taking over care, noted at 22:00 medicines round, an omission of daltaparin from 18:00.

- What should this nurse do in this circumstance?
- Would you go ahead and give as prescribed?

Scenario - outcome

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- Night Nurse contacted colleague from previous shift, at home, to confirm whether they gave the dose earlier. The nurse advised that she had not given – hence why not signed.
- Night Nurse administered the medication. A short time later the nurse rang back to say she had given it, and had been interrupted before signing as given.
- This resulted in patient receiving double the dose – this could risk bleeding, and possibly further medication to reverse the effects.

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Escalation

In the event of an omission or delay of administration:

- Inform medical team
- Escalate to nurse in charge
- Follow medical direction on medication plan for decision on omission or to give stat dose.

Summary

- Identify a critical medication
- Understand the time frame for administration of a critical medication
- Understand the difference between an omission and delayed dose
- Have oversight of the process of investigation of missed doses of critical medicines

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Controlled Drugs

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Learning Aims

- Have an oversight of the legal framework that govern controlled drugs
- Understand there are different schedules and these are treated differently but are still CDs
- Gain understanding of why 2 person check in the whole process is imperative to safety of the patients and your own professional accountability
- Understand the balance check frequency
- Know what to do if controlled drugs are missing

What is a controlled drug?

The Misuse of Drugs Act 1971 defines the drugs into Classes and outlines applicable penalties to criminal offences.

The Act governs regulations applicable to use of drugs, including:

- The Health Act (1976)
- The Controlled Drugs (Supervision of Management and Use) Regulations 2013
- Safe Custody Regulations (1973)
- The Misuse of Drugs Regulations (2001)

In the Misuse of Drug Regulations, classes of drugs are divided into 5 schedules, which details Safe Custody requirements.

In Schedule 2 relates to drugs which, when used in a health care facility, should be stored in a controlled drugs cupboard.

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Controlled drugs check

These substances must be handled, stored and administered with extreme vigilance and caution. Keys must only be available to authorised members of staff

Controlled drugs MUST be administered as a TWO person check from the CD cupboard to the patient with the prescription.

The stationary, particularly the book, must remain in the cupboard to reduce access of unauthorised personnel risk of someone altering entries.

Controlled drug balance checks MUST be made daily to ensure there is no discrepancy, by two staff members. This includes both stock and patient's own controlled drugs.

Theft of controlled drugs results in staff disciplinary action and criminal prosecution- the maximum penalty for non-lawful possession can be life imprisonment.

Liquid controlled drugs

- Liquid drugs balance can be checked by visual inspection but must be confirmed to be correct on completion of a bottle
- Check Expiry date of liquid medications –

1) Manufactures' date
2) Expiry date from date of opening

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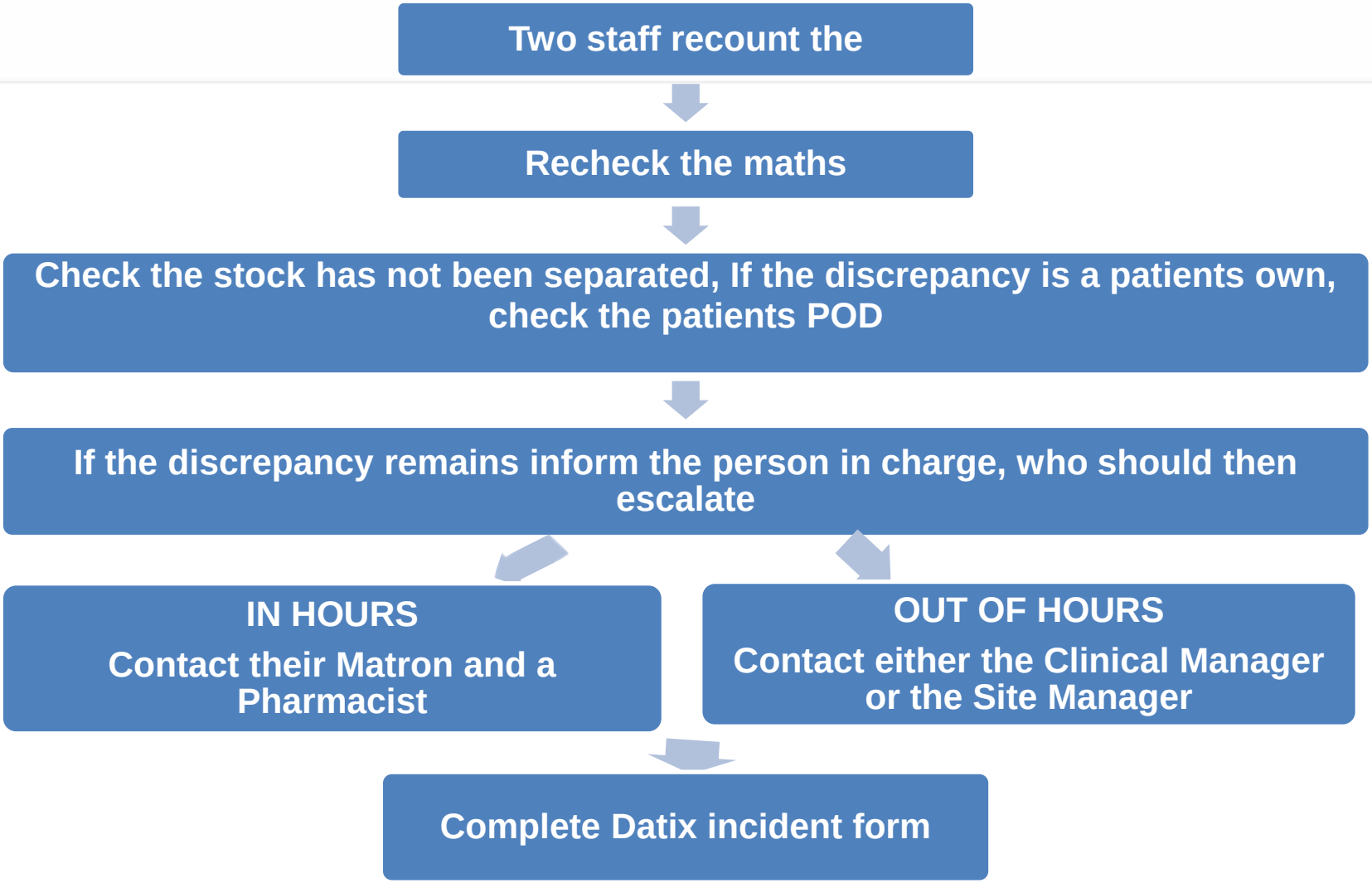
SOP for balance discrepancies



Ordering

- Controlled drugs MUST be ordered Monday-Friday 09.00am – 16.00pm
- If the required CD is not available or multiple doses required the on-call pharmacist should be contacted via the duty manager.
- Only single doses can be transferred to another ward out of hours. The law prevents greater quantities being transferred.

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CD Receipt

For CD's received, the following details should be recorded in the CD record book :

- date on which received
- serial number of requisition
- name of drug and formulation
- Balance in stock
- 1st and 2nd checker signatures

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Storage of CD's

- Only controlled drugs are to be stored in the controlled drugs cupboard.
- Store patient own medications on separate shelf to ward stock (enter into Patients Own CD register)
- If any drugs are no longer needed or have expired, store on separate shelf until they can be returned to pharmacy

IV Opioids

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Unless further training has been received, as a registered nurse -

NEVER ADMINISTER BOLUS IV OPIOIDS

- IV opioids are acceptable if prescribed for PCA
- Bolus IV opioids should only be administered by a medic in a monitored clinical area e.g. HDU, ITU, AED, ACCU

Drug disposal

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- If required to “waste” a drug, a destruction kit should be used.
- It is not acceptable to dispose of any medication in a bin, sharps bin, down a sink.
- Destruction kits are for unused dosage of part of an ampoule or syringe.

Group work

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Controlled drug incident

- Joanne was a patient on ward X. She was 38 years old and she had MS. She was at later stages of the disease. She had lost the ability to communicate verbally. Due to bladder spams she was in pain and expressed this with groans and facial expressions. She was prescribed for a buprenorphine patch every 3 days.
- The ward was really busy and a staff nurse had called in sick for the shift with no one able to replace them. The staff on duty were working really hard to make sure every patient was safely cared for but they were very busy.
- Two nurses were finishing their medication round and were about to start the controlled drugs administration. Joanne was due for her buprenorphine patch. The two nurses checked the prescription, patient details in the treatment room and counted out the patches in the cupboard. They completed the details in the CD book. Due to the fact they had a few CDs to give, they agreed that one nurse would put the patch on the patient and the other would carry on getting the CDs out.
- The nurse left the treatment room…

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Questions

1. What do you think went wrong?

2. Why did it happen?

3. What was the impact to the patient?

4. What was the impact to the nurse that went to the patient?

5. What was the impact to the nurse that stayed in the treatment room?

Summary

- Have an oversight of the legal framework that govern controlled drugs
- Understand there are different schedules and these are treated differently but are still CDs
- Gain understanding of why 2 person check in the whole process is imperative to safety of the patients and your own professional accountability
- Understand the balance check frequency
- Know what to do if controlled drugs are missing

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Safe Use of IV Gentamicin

Learning Aims

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- Understand what gentamicin is and when it is used
- Understand gentamicin monitoring
- Understand the potential for harm from using gentamicin
- Awareness of concurrent nephrotoxic drugs
- Understand protocol for therapeutic drug monitoring of IV gentamicin

What is Gentamicin?

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- Gentamicin is an antibiotic used to treat many types of bacterial infections
- Used only for serious infections with careful monitoring, or in short-term doses to prevent infections
- A stat dose of gentamicin, along with teicoplanin and metronidazole, is the first line of antibiotics in cases of severe sepsis and should be administrated within 1 hour

Contraindications

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- Allergies
- Myasthenia gravis (an autoimmune disease of the neuromuscular junction)
- Renal impairment

Risk Factors

- Accumulation of Gentamicin in the kidneys leads to nephrotoxicity, it can also cause irreversible ototoxicity
- Concurrent prescribed nephrotoxins, e.g. statins, diuretics, NSAIDs, penicillin's
- Dehydration
- Lack of therapeutic drug monitoring

Urine Output

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Urine output measurement is an effective tool for assessing kidney function

- Measure urine using a fluid balance chart
- Assess urine output and consider if your patient needs a urine catheter (especially if your patient is in septic shock)
- Urinalysis +/- urine sample for MC+S
- Be aware that a patient with chronic kidney disease may already have a reduced urine output

Consequences of AKI

- Increased length of stay
- Increased costs in care
- Increased mortality
- Increased risk of future AKI
- Higher risk of being diagnosed with chronic kidney disease
- Risk of residual impaired renal function
- Risk of reduced quality of life post AKI episode, due to residual kidney damage
- Increased risk of requiring dialysis in the future
- Increased risk of requiring multiple medications

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Blood Monitoring

- Maximum dose of Gentamicin is 450mg in a 24 hour period, initial dose can be established using an online calculator
- Medical team must prescribe gentamicin levels on EPMA 8 to 12 hours post-dose, THEN twice per week if renal function is stable (renal function monitoring x3 weekly)
- Nurse / ODP to Chart when the gentamicin level on EPMA has been collected
- Results must be reviewed by a Doctor prior to the second dose; dosage interval calculated using a nomogram

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Cross Checks

Check your patient's prescription – open up administration chart to view and cross reference any paper charts and discontinued charts

Two doses can be accidently prescribed within 24 hours due to:

- Transcription errors between EPMA to paper chart
- Gentamicin stat prescribed on CAS card and again on EPMA
- Recent stat dose of Gentamicin on EPMA listed under discontinued medications

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Gentamicin Calculator

Once Daily Gentamicin Dosing Calculator

This calculator is intended as a guide only and does not replace clinical judgement.

This calculator should only be used in patients 5ft and over, for patients under 5ft please contact Pharmacy for dosing advice.

Once daily gentamicin dosing is the preferred method for routine courses of gentamicin therapy.

Important exclusions to once daily dosing are those patients with:

- **Endocarditis**
- **Ascites**
- **In paediatrics**
- **Needing single dose prophylaxis**
- **On dialysis**
- Pregnancy and post-partum
- Major burns (>20% BSA)
- Cystic fibrosis
- Mycobacterial infections
- CrCl < 20ml/min

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STEP 1: Dosage and Interval Calculator

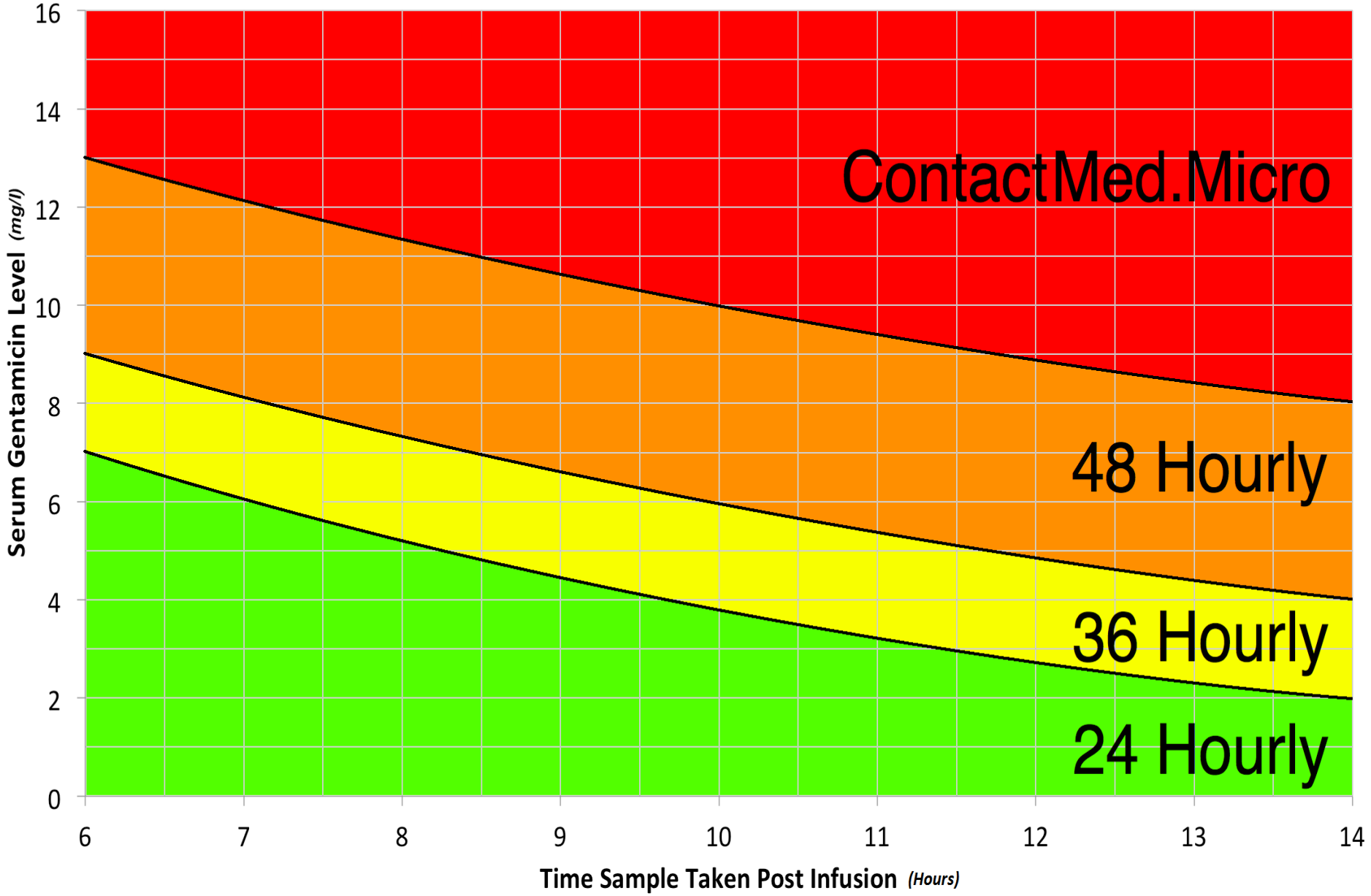
1: Select your preferred units	Imperial	Metric
2: Select if the patient is male or female	Male	Female
3: Enter the patient's height	Ft	In
Split the patients height into two numbers i.e. 1.7M becomes 1M and 70cm or 6'1" becomes 6Ft and 1In.		
4: Enter the patient's actual weight		kg
5: Enter the patient's age		years
6: Enter the patient's serum creatinine		umol/L
		kg
The patient's creatinine clearance is:		ml/min

Recommended Dose and Suggested Dosing Interval:

based on a Creatinine Clearance of ml/min.

Gentamicin should be administered in 100ml of 5% Glucose or 0.9% Sodium Chloride over 1 hour intravenously

Barnes-Jewish Hospital
Extended Interval Aminoglycoside Dosing Nomogram



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Case Study

Review the patient case study and discuss:

- What common themes can you identify in the management of the patient?
- What should have been done differently?
- Who could have altered the impact on the patient?

Outcome – moderate harm

- Patient transferred to nephrology and renal function supported by dialysis for 9 days
- Patient eventually transferred back to vascular ward and discharged but still has chronic kidney disease

Handover

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- Prescription status of Gentamicin – with visual cross reference of all charts.
- When gentamicin was last given ?
- When gentamicin levels are due ?
- When gentamicin levels have been taken?

Remember levels out of hours remain priority

Summary

- Understand gentamicin is and when it is used
- Understand gentamicin monitoring
- Understand the potential for harm from using gentamicin
- Awareness of concurrent nephrotoxic drugs
- Understand protocol for therapeutic drug monitoring of IV gentamicin

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Safe use of insulin

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Learning Aims

- Gain an awareness about insulin and diabetes
- Understand the principles of administration
- Gain knowledge to competently practise using administration techniques
- Gain awareness of prescription related errors

What is insulin?

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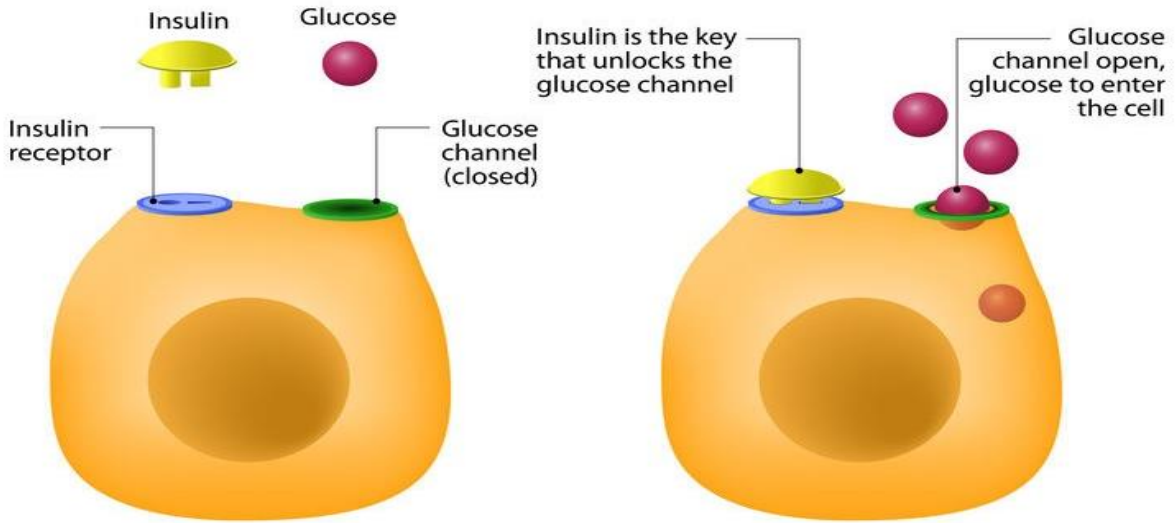
- Insulin is the hormone produced by the pancreatic beta-cells in response to carbohydrate intake
- It metabolises carbohydrates by promoting uptake of glucose from the blood and storing it in the skeletal muscles and fat



Diabetes

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Type 1

- Patients with type 1 have no functioning pancreatic beta cells therefor have no insulin production
- Lifelong condition
- Commonly treated with injectable insulin

Type 2

- Patients with type 2 develop “relative insulin deficiency” because of insulin resistance
- Potentially reversible
- Treatment can vary from lifestyle changes, medication including injectable insulin

Safe Practise

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- Intravenous syringes should NEVER be used for insulin
- Only syringes labelled in units should be used to draw up from insulin vials
- Pens should only be used once training received
- Insulin should NEVER be drawn up from a pen or cartridge using a syringe

Insulin syringes vs Pens

Insulin syringes

- Designed for insulin administration only
- Single use
- Prefixed 8mm microfine safety needle
- Readings are in UNITS rather than millilitres
- Insulin is drawn from a vial

Pens

- Can be either reusable (with cartridges) or disposable (preloaded)
- Multiple doses/use
- Single use disposable needles required, need assembly as come separate to pen
- Safety needles for pens are microdot 5mm

Standards of practise

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- Unopened insulin vials or pens should be stored in a fridge, once opened can be kept at room temperature for 28 days (date should be labelled)
- The prescription chart or EPMA must be taken to the bedside, always make sure the name of the insulin is correct by asking the patient and prescription
- Administration must be documented with 1st and 2nd checkers signatures at the bedside**
- Remember insulin is a critical medication and must be given on time

Self administration

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- A self-administration assessment should be completed with the patient
- Patient should have access to their own insulin, this should be kept locked away when not in use
- Ensure patient has sufficient insulin pens and needles
- Provide patient with individual sharps bin
- Confirm with patient the number of insulin units administered and record on EPMA. (Record on EPMA if different from the dose prescribed)

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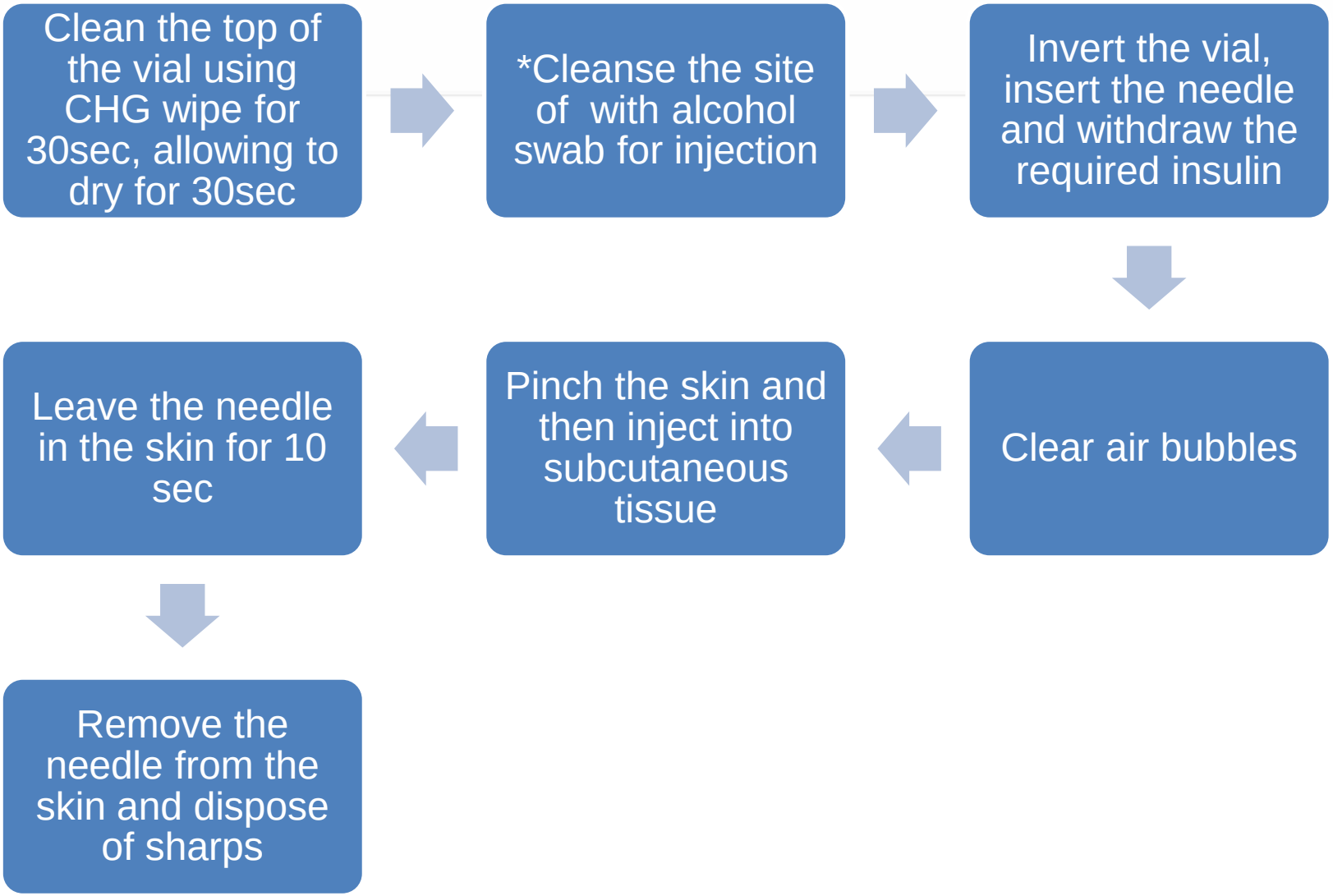
Injection technique using syringe



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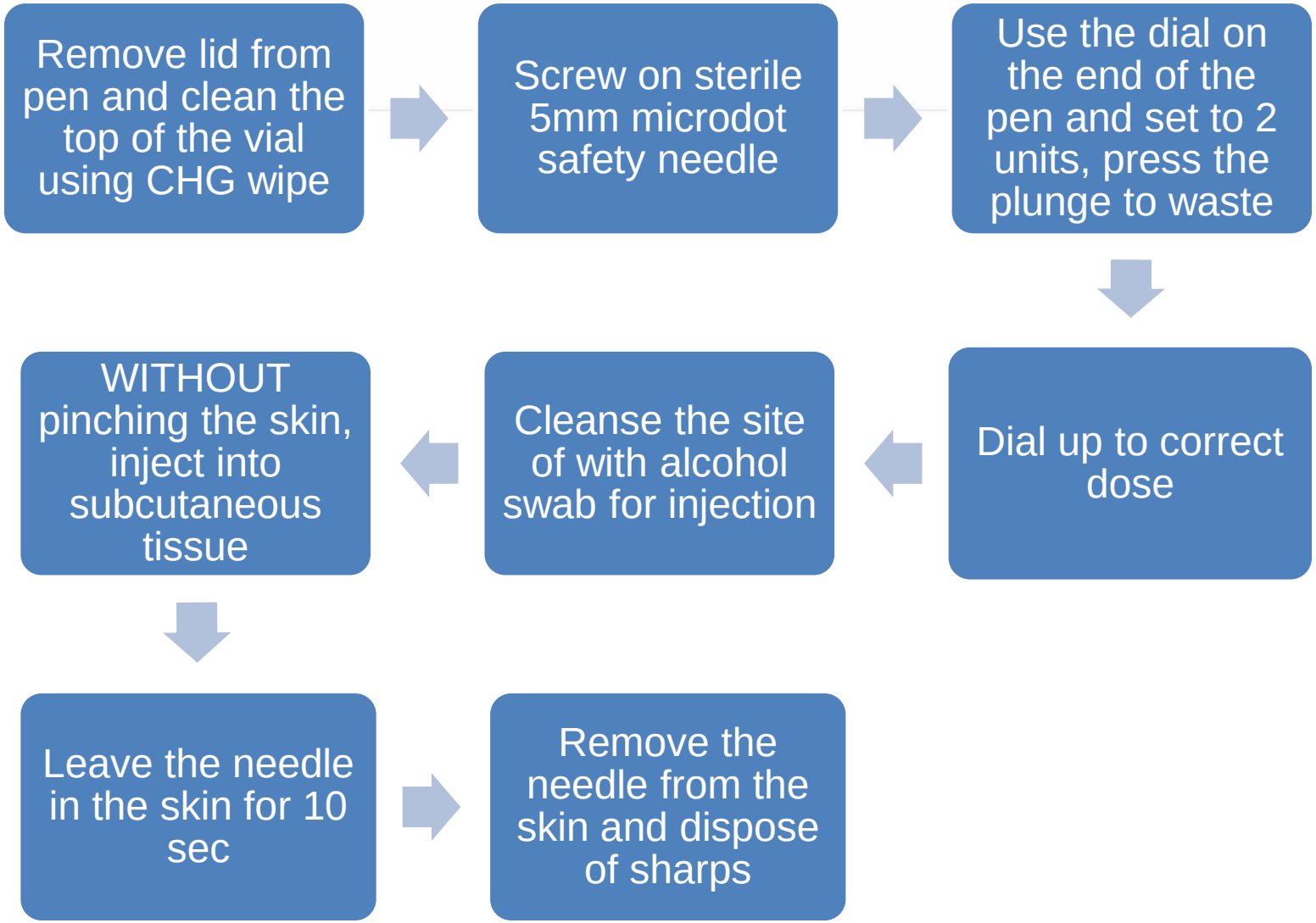
Injection technique using Pen



Lipohypertrophy

- Insulin has a hypertrophic effect on subcutaneous tissue, particularly effecting adipocytes
- Lipohypertrophy can cause unpredictable glycaemic control, resulting in alerted insulin absorption
- The effect can be reduced by regularly rotating injection sites

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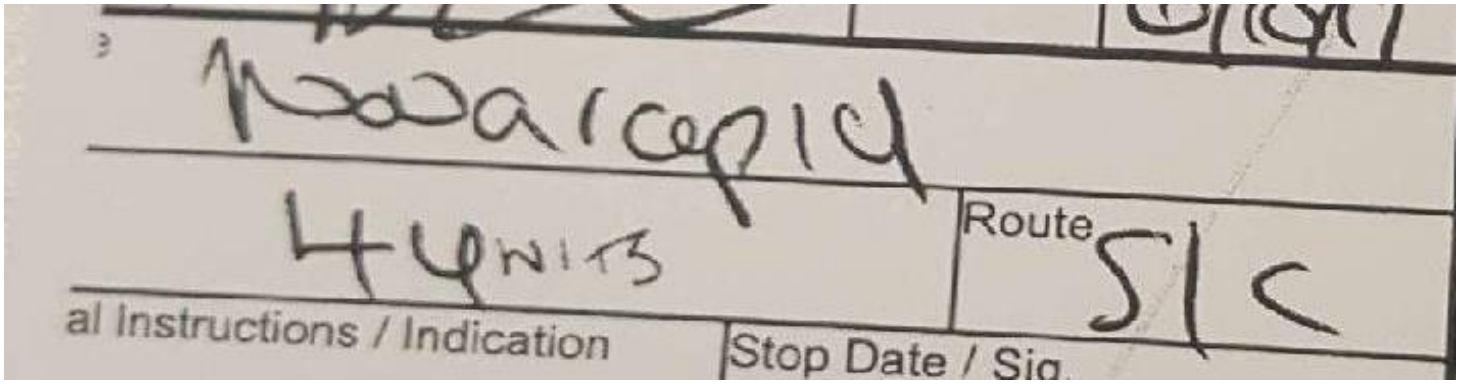
Abbreviation related errors

- When hand writing prescriptions for insulin, the dose should be followed by “units” in lower case i.e. 10 units
- Use of “U” instead of “units” has led to 10-times dose administration errors



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Summary

- Gained an awareness about insulin and diabetes
- Understand the principles of administration
- Gained knowledge to competently practise using administration techniques
- Gained awareness of prescription related errors

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Medication Supply and Safe Storage

Leaning Aims

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- Understand the process for ordering medication
- Awareness of the principles of safe storage
- Awareness of the safe use of patient own medication

Ordering medication

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If a drug is unavailable on the ward what should you do?

- EPMA nurse web portal.
- Other ward (transfer sheet Aintree).
- Patient's own medicine (same patient only).
- Night Store (only outside of Pharmacy hours).
- On-call Pharmacist.

Critical medicines should **never** be missed

- Anti-epileptics.
- Insulin.
- Parkinson's disease medicines.
- Antibiotics.
- Anticoagulants.

Royal and Broadgreen Webportal

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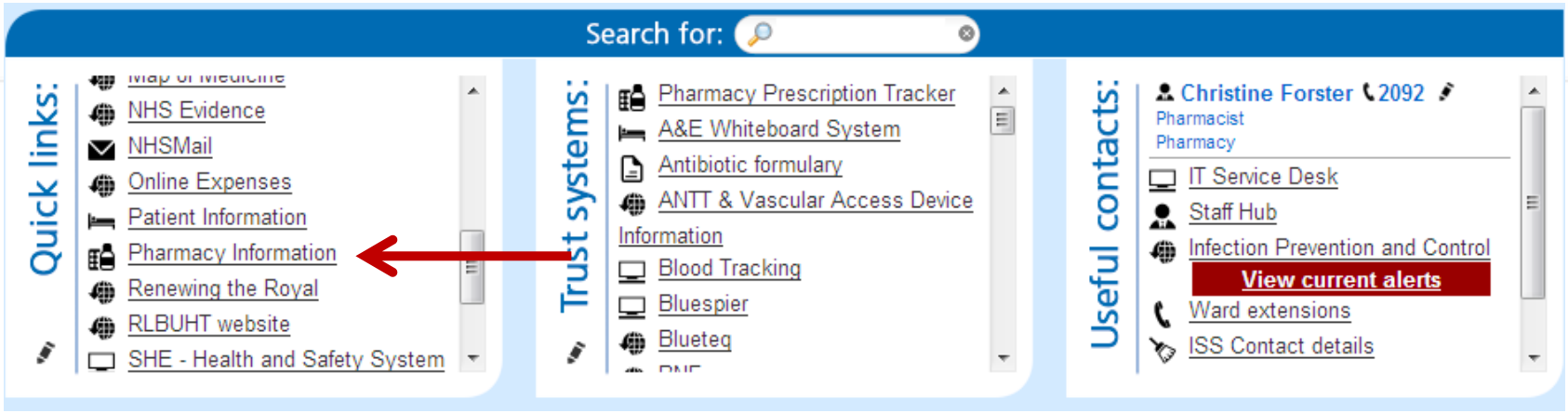


Pharmacy information

- For doctors
- For nurses
- For pharmacists

For further pharmacy information please click on here:

- Pharmacy services
- Pharmacy extention numbers and pager list

For Nurses

- The Pharmacy prescription tracker
- Royal Liverpool Hospital stock lists
- Broadgreen Hospital stock lists
- Emergency medicine store information
- Weekend Pharmacy Order Sheet RLH - printable document
- Weekend Pharmacy Order Sheet BGH - printable document
- British National Formulary
- Antimicrobial Formulary 2016
- Trust Formulary March 2016
- Pan Mersey Area Prescribing Committee
- Medusa injectable medicines guide (login details: username =
- EPMA
- Fragmin video
- Octaplex - Instructions for reconstitution

For example, if you were looking for rivaroxaban:

Pharmacy Directorate

RLH Ward Stock lists Search

Type search term here
GENERIC NAME, NOT BRAND NAME

Search the Royal Liverpool Hospital Ward Stock Lists either via Ward (to obtain a full ward stocklist) or by medicine (to obtain a list of wards that stock a particular medicine). An asterisk (*) at the end of a row, indicates that an item is supplied on request only.

Enter a complete or partial generic medicine name or ward code then click search.

Generic medicine name: RIVAROXABAN Search

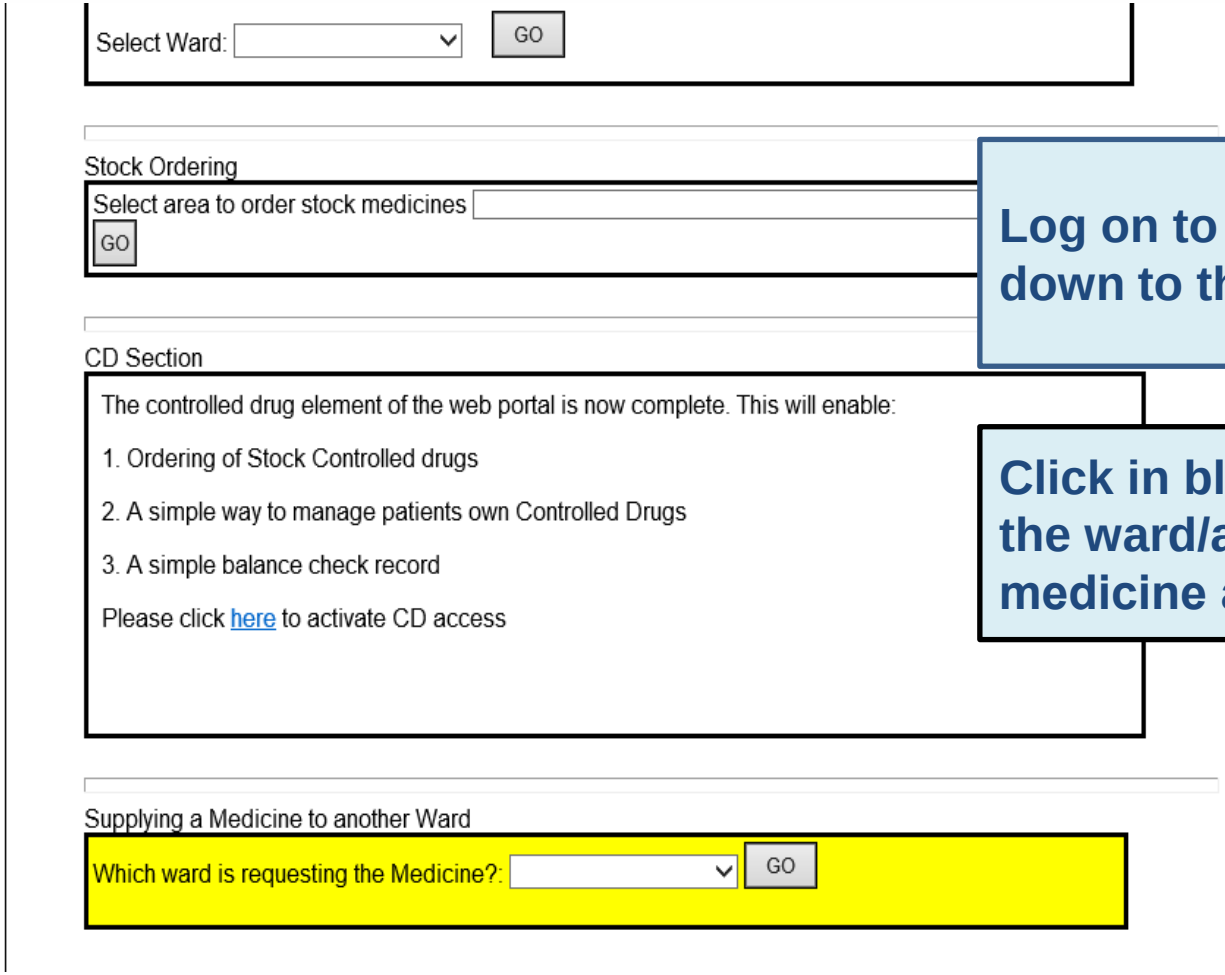
or enter ward code: Click here to view RLH ward codes

The stocklists were last updated - 18/04/2017 20:59:20

Medicine name, form and strength	Packsize	Ward	Max Stock	
RIVAROXABAN 15 mg Tablets Tablets 15 mg	28 Tablet(s) Pack	3A	1	
RIVAROXABAN 15 mg Tablets Tablets 15 mg	28 Tablet(s) Pack	EMS		
RIVAROXABAN 15 mg Tablets Tablets 15 mg	28 Tablet(s) Pack	RHEC	1	

EMS is the emergency cupboard, which is located in security on the 1st floor

Supplying a medication to another clinical area Aintree



Log on to Web portal & scroll down to the yellow box

Click in blank box and select the ward/area requesting the medicine and click ‘go’

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To supply a medicine to another ward click on the individual medicine

Outstanding In-Patient Orders

Date Ordered	Nurse	Hospital Number	Name	Items
06/03/2019 09:11:05	wsneade:wsneade			MESALAZINE (Octasa MR) 800mg tablets Twice a day in the morning and at night Oral
06/03/2019 09:10:43	wsneade:wsneade			MESALAZINE (Salofalk) 1.5g m/r granules Each day in the morning Oral

Select the medication you are supplying

To confirm you: have been requested to supply ward **10** with

MESALAZINE (Octasa MR) 800mg tablets

Please Confirm the Quantity (in dose units e.g. 10 tablets) and Name of Person Collecting

Quantity Provided: Collected By: Click to Provide

Return to main page

Complete the blank fields and 'click to provide' ENSURE YOU CHECK THE PERSONS ID BADGE THAT YOU ARE GIVING THE MEDICATION TO

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Patients own medication

The use of patient medication is acceptable when hospital provision is not available.

Patient medication is NOT suitable to use if:

- The expiry date has been exceeded. (If not indicated, do not use if it is more than six months from the date of dispensing).
- The medicine is not suitably packaged or condition of the medicines is unsatisfactory.
- The label and contents do not correspond, i.e. Medicine name, strength.
- Patient name is incorrect or absent
- Typewritten dispensing labels.
- More than one medication mixed in one container.
- Incorrect or confusing instructions.

Medicine Storage

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- All medicines must be stored in lockable cupboards, drawers, trolleys, fridges.
- Medicines should not be left lying around in general areas
- IV fluids MUST be stored in a lockable area defined area away from other clinical/store equipment
- IV fluids containing potassium MUST be segregated from other IV fluids
- Medicines refrigerator should only be used for medicine, and must be between 2-8°C (monitored daily)

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Packaging

Medicines must be stored in their original packaging or the containers supplied by pharmacy. They must not be transferred from their original container to another, or left loose

Poor practice includes:-

- Storing strips inappropriately
- Storing powders inappropriately
- Medications in pot on patients table

Summary

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- Understand the process for ordering medication
- Awareness of the principles of safe storage
- Awareness of the safe use of patient own medication

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Discharge planning

Learning Aims

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- Awareness of the requirements for In-hospital transfers
- Awareness of principles of TTO/TTA (to take out/away) supply
- Understand checking process of TTO
- Understand the process for Patients own medication on discharge
- Awareness of safe storage of TTO and CD TTO
- Understand the procedure for discharging a patient on direct oral anticoagulation's (DOAC'S)
- Awareness of TTO'S out of hours procedure

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Transferring Patient

- Print off a **MAC** and a **MAP** for when a patient is transferred between Aintree and Royal or Broadgreen sites (or to other Trusts)
- Send copies with patient in a secure envelope addressed to receiving ward and nurse in charge
- Transfer all medications from patients own locker to receiving ward / area
- Check for fridge items and any CD's
- Insulin – ensure communication with receiving ward that they have supply of prescribed insulin
- Handover the medications in appropriate transfer bag, and hand to responsible HCP (not the patient)

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Nurse Escort Requirement

Hospital policy suggests nurse escort is required when a patient is transferring on an iv infusion or on greater than 35% oxygen.

IV infusions must remain set up in their pumps and continue to infuse during transfer. It is imperative that the lockout mechanism is activated.

Nurse must ensure pump is securely fixed to a bed drip stand.

Oxygen on Transfer

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Beware of:-

- The clinical needs of the patient
- Different medical gas cylinders
- Incorrect flow meters
- Detachment from oxygen supply

Ensure:-

- You select correct cylinder with enough oxygen for your patient transfer
- That the on/off valve is turned on and gas flow can be heard for at least 5 seconds when connecting a patient to cylinder oxygen
- Patient is transferred on correct prescription of oxygen
- On arrival to the new area – oxygen must be transferred onto piped oxygen source at correct rate immediately.

Discharge planning

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- A discharge prescription (TTO) **must** be written for **all patients** being discharged
- A discharge prescription must always be completed for the GP record, even if no additional medication is required from pharmacy
- Where there have been no changes to medication the prescription should be annotated as such in line with the Trust prescribing policy
- All patients will be assessed to ensure that 7 days of medications on discharge are available to them
- All patients to be discharged to an intermediate care bed (ICB) will require a minimum of 14 days supply

Warfarin

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Warfarin is a high risk medicine

- New patients must be counselled on warfarin **prior to discharge**
- Pharmacists can support in hours
- Anticoagulant yellow booklet to be explained and given with TTO
- All patients need an anticoagulant clinic appointment booked **before** they are discharged
  - Appointment card given
  - Transport arrangements made
  - Dose to take until first/next anticoagulant clinic appointment.
- INR should be within the desired therapeutic range

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Patient own medication

- Items in the patients bedside locker, labelled with instructions and the patients' name, may be issued to patients at discharge provided that the medications are in accordance with the discharge prescription
- Nurses must not re-label containers, or amend / add to labels at ward level, for patients who are to be discharged.
- If script does not appear to correspond with labelling information – contact pharmacy for advice.

Pharmacy

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Wherever possible, the discharge prescription must be completed 24 hours before the patients planned discharge.
The pharmacy department requires:-

- A minimum of **TWO** hours notice to dispense a discharge prescription
- A minimum of **four** hours for a blister pack
- Blister pack TTO requirement must be written on EMPA prescription chart

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Out of hours

- Pharmacy do not supply TTO's outside of Pharmacy opening hours
- Contact the Duty Manager for a FP10
- Prescription to be completed by either prescriber or non – medical prescriber
- FP10 to be taken by patient / carer to extended hours community Pharmacy
- Royal's Pharmacy does currently have an extended TTO service on Saturday and Sunday afternoon's 12.30 - 5pm

TTO Storage

- The Fridge – TTO items may have require refrigeration storage
- The Clean utility room - allocated TTO locked cupboard
- The CD cupboard - stored in POM'S own shelving area with items signed into patients own Controlled drug register
- Patients own medication overhead locker

Safe checking

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Check **the pharmacy label** and **the original packaging** details of each dispensed item, matches that of the TTO prescription.

Use the following checking sequence:

- Patient name
- Medication form
- Medication Strength
- Dosing details
- Quantity – at least 7 days (14 days if going to ICB) or completion of course
- Expiry date check

Ensure relevant items such as patient information leaflets, steroid cards, spoons, and syringes, alongside patient copy of discharge summary, and copy of TTO prescription, are provided.

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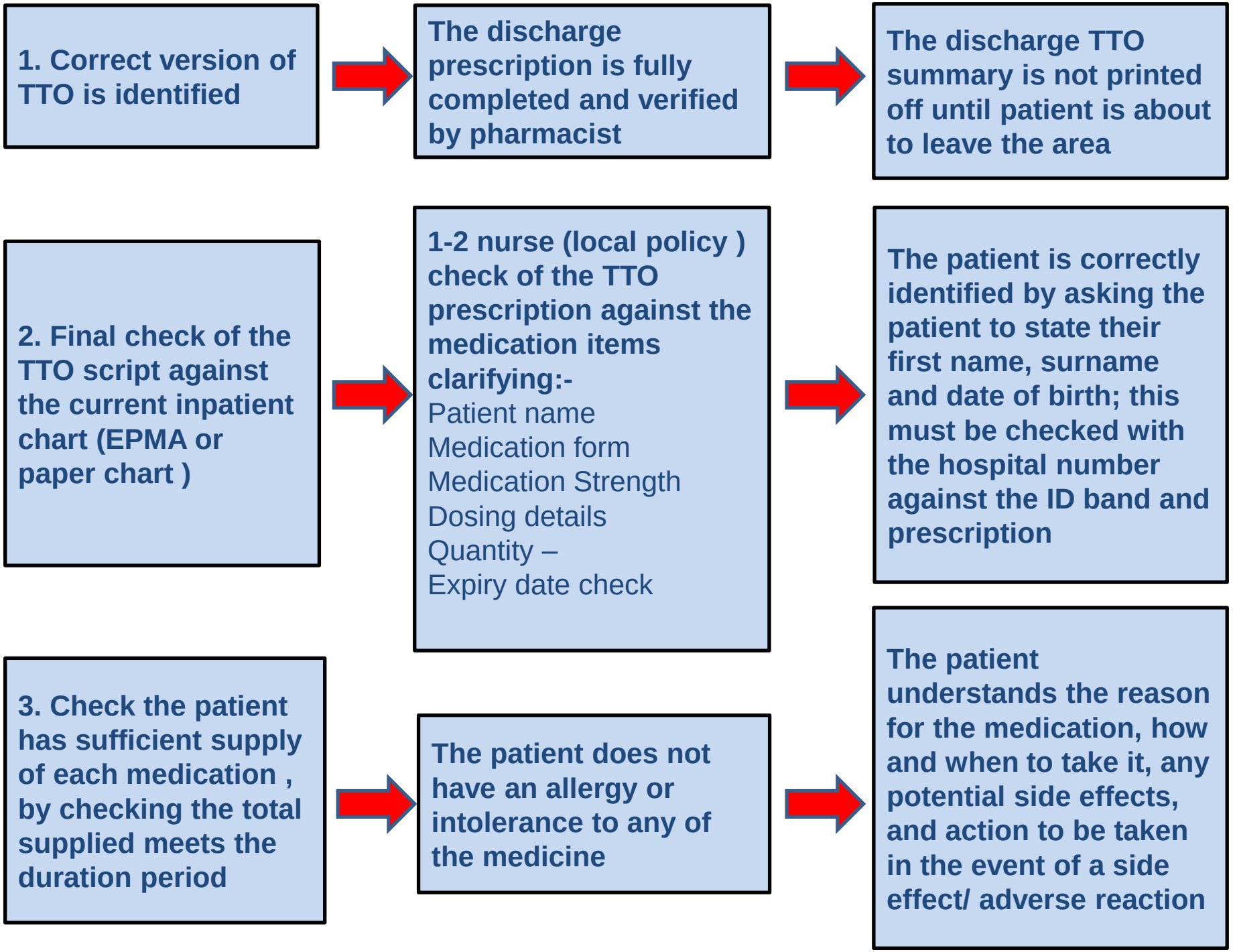
Supply endorsements

QSH	Quantity Sufficient at Home	QS	Quantity Sufficient (on ward)	WARD	Supplied from Ward	ND	Not Dispensed
POM	Patients Own Medicine	VL	Medicines in Blister Pack	PPWARD	Pre-Pack from Ward	OP	Original Pack


1. Correct version of TTO is identified
The discharge prescription is fully completed and verified by pharmacist
The discharge TTO summary is not printed off until patient is about to leave the area
2. Final check of the TTO script against the current inpatient chart (EPMA or paper chart)
1-2 nurse (local policy) check of the TTO prescription against the medication items clarifying:-
Patient name
Medication form
Medication Strength
Dosing details
Quantity –
Expiry date check
The patient is correctly identified by asking the patient to state their first name, surname and date of birth; this must be checked with the hospital number against the ID band and prescription
3. Check the patient has sufficient supply of each medication , by checking the total supplied meets the duration period
The patient does not have an allergy or intolerance to any of the medicine
The patient understands the reason for the medication, how and when to take it, any potential side effects, and action to be taken in the event of a side effect/ adverse reaction

Lessons Learned – What Matters
Know - Check - Ask

Know

What does the patient already know about the risky drug

What the patient's concerns are

Know about co-existing treatments, behaviours and drugs which could affect safety

What engagement/ communication strategies work

Patient's capacity to understand

Check

That the patient/carer understand the risks and common problems

What sources of information are credible reliable and helpful

The patient knows what to do if problems arise

Compliance – encourage honesty

Ask

Any questions ore concerns

How are you getting on with this medication ?

Listen - Be open – Seek understanding – Involve/inform carers – Shared decisions

Summary

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- Awareness of the requirements for In-hospital transfers
- Awareness of principles of TTO/TTA (to take out/away) supply
- Understand checking process of TTO
- Understand the process for Patients own medication on discharge
- Awareness of safe storage of TTO and CD TTO
- Understand the procedure for discharging a patient on direct oral anticoagulation's (DOAC'S)
- Awareness of TTO'S out of hours procedure

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Safety conversations