

Prescribing and drug calculations self-review workbook

Self-review workbook

This workbook contains prescribing and drug calculations practice tests.

Print and complete the workbook and compare your responses to the answers and comments which are included as you progress through the workbook or at the end of the activity. Alternatively, you can dip in and out on screen to selfreview your skills. Reflective logs are included after each section to assist you in assessing your strengths, weaknesses and areas for development.

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Prescribing and Drug Calculations Tests

In the first section you will find some additional information about the patient and a prescription containing 11 errors and omissions. Comment on the inpatient prescription and administration chart for this patient with COPD. You can use the numbered sheet to write down the 11 errors/omissions with your comments.

Click on 'next' to show the same prescription chart with the errors/omissions highlighted. The following page outlines the 11 learning points with comments, followed by an example of a well written inpatient prescription.

In the second section you are provided with some information about the patient and asked to write an outpatient/primary care prescription, click on 'next' to show the well written FP10 (outpatient/primary care prescription) with comments. Complete the learning log at the end of this section and review your strengths, learning and development needs.

The third section contains 2 drug calculation practice tests for you to self-review skills, with the answers at the back of the booklet. Complete the learning log after this activity.

Prescription Chart With Errors

Comment on the Inpatient prescription and administration chart for the following patient with COPD – there are 11 learning points on the chart.

- In the late evening Jo Vickers dob 18/08/1939, weight 80kg, height 170cm ex heavy smoker brought in by ambulance with increasing SOB, chest crepitations, high volume purulent sputum, falling oxygen saturations and pyrexia. He has no known allergies
- His medication prior to admission is:
 - Tiotropium 18micrograms od
 - Symbicort 400/12 inhaler one puff twice daily
 - Furosemide 20mg om
 - Salbutamol inhaler for prn use
 - On continual home oxygen
- It is decided that this is an infected exacerbation of his COPD and he is to be treated with nebulisers, antibiotics, steroids and increased diuretic therapy.
- After an hour he is not responding, and IV aminophylline is recommended
- 5 hrs later, the next morning his breathing has improved, but he is vomitng
- His K+ has dropped to 3 and he develops atrial fibrillation (AF)
- What therapy would you stop?
- His K+ deficit is corrected intravenously
- Electro-conversion fails and oral amiodarone is started.
- On account of his age, anticoagulation is recommended to reduce his risk of stroke
- His baseline INR is 1.3

Note: there are many different versions of hospital prescription and administration charts, before starting it may be useful to familiarize yourself with all the different sections.

Prescription Chart With Errors



PRESCRIPTION CHART & ADMINISTRATION RECORD

CHART..... of.....

Rewritten on.....Checked by:.....Date:.....

DRUG ALLERGIES AND SENSITIVITIES	
DETAILS OF REACTION:	
NAME:	DESIGNATION:
SIGN:	DATE:

SURNAME VICKERS	WARD B4	ROOM NUMBER/BAY 1	
FIRST NAME JOE	AGE/DOB 18/3/39	HEIGHT 170 CM	WEIGHT 80kg
NHS NUMBER 1234567	SEX M/F M	CONSULTANT SMITH	

Allergies/sensitivities must be recorded before prescribing or administering medication except in exceptional circumstances

Medication Needs Assessment prior to admission
patient self medicating <input type="checkbox"/>
assisted by family/carer <input type="checkbox"/>
administered by Nurse/Home <input type="checkbox"/>
Number of carer visits <input type="text"/>

Date of Admission 20/4/13

Medication needs assessment during admission
self administration assessment done <input type="checkbox"/>
patient consent form signed <input type="checkbox"/>
patient being monitored <input type="checkbox"/>
patient self administering from:
original packs <input type="checkbox"/>
original packs with easy tops <input type="checkbox"/>
compliance aid (blister pack) <input type="checkbox"/>
patient unable to self administer <input type="checkbox"/>

Discharge Needs Assessment
patient to be discharged with:
original packs <input type="checkbox"/>
original packs with easy caps <input type="checkbox"/>
compliance aid/blister pack <input type="checkbox"/>
administration by carer <input type="checkbox"/>
social services informed of medication administration need <input type="checkbox"/>

Medicine's reconciliation completed on.....

By:

Community Pharmacy

Telephone no.

RISK ASSESSMENT TOOL FOR VTE (Excluding patients < 18 years)

This is a guide: clinicians should exercise clinical judgement when prescribing enoxaparin. VTE risk scores:

Low Risk	Age >60	1	Obesity BMI>30	1	Varicose veins	1	Dehydration	1		
Medium Risk	Sickle cell	2	Pregnancy & puerperium	2	Medicines e.g. HRT	2	Family history of VTE	2	Immobility inc. plaster cast to leg	2
High Risk	Active cancer	3	Cardiac or respiratory failure	3	Nephrotic syndrome	3	Acute Medical illness	3	Serious infection	3
Highest Risk	Surgery and significantly reduced mobility	4	Significantly reduced mobility of >3 days	4	Major Surgery + anaesthetic time >90 mins	4	Personal history of VTE	4	Critical care admission	4

A SCORE OF 3 OR MORE SHOULD BE CONSIDERED FOR PROPHYLACTIC DOSE OF ENOXAPARIN (LMWH). RE-ASSESS AFTER 24 HOURS, THEN REGULARLY AND IF CLINICAL SITUATION CHANGES.		1st Score on admission	2nd Score after 24 hours	3rd Score	4th Score	5th Score
DO NOT PRESCRIBE IF ONE OR MORE OF THE FOLLOWING ARE TICKED (unless benefit outweighs bleeding risk). CONSIDER MECHANICAL OPTIONS/EARLY MOBILISATION.		Risk Score	7			
		Date	2014			
		Signature	B.wood			
Uncontrolled hypertension (230/120)	Active/high risk of bleeding	Neuro/spinal/eye surgery				
Procedures with high bleeding risk	Concurrent use of other anticoagulants	Acute stroke				
Untreated bleeding disorders eg: Haemophilia/Von Willebrands	Lumber puncture or epidural/spinal anaesthesia in previous 4 hours or expected within the next 12 hours	Liver failure/acquired bleeding disorder				
Thrombocytopenia (platelets <75x10 ⁹ /L)						

NHS Number

PRESCRIPTION

LAR PRESCRIPTION

MONTH/YEAR

Info Given (tick)	DRUG (APPROVED NAME)	Route	Additional information	Date	START		DATE			DATE		
					Date	Init						
<input type="checkbox"/>	ENOXAPARIN (CLEXANE)			2014	0600		20/4	21/4	22/4			
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	40mg				
					2200							
												On completion of VTE Risk Assessment
<input type="checkbox"/>	SALBUTAMOL			2014	0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	5mg				
					2200							
<input type="checkbox"/>	IPRATROPIUM			2014	0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	500microg				
					2200							
<input type="checkbox"/>	PREDNISOLONE			2014	0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	30mg				
					2200							
<input type="checkbox"/>	AMOXICILLIN			2014	0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	500mg				
					2200							
<input type="checkbox"/>	AMIODARONE			2014	0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	200mg				
					2200							
<input type="checkbox"/>	FUROSEMIDE			2014	0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	40mg				
					2200							
<input type="checkbox"/>	SYMBICORT			2014	0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800	1puff				
					2200							
<input type="checkbox"/>					0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800					
					2200							
<input type="checkbox"/>					0600							
					0900							
					1300							
	Dr's signature	N	H	↑	↓	C	1800					
					2200							

CANCELLATION REASON CODES: (1) = SLEEP (2) = FASTING (3) = SEE "ON LEAVE" MEDICATION BOOK (4) = PATIENT UNAVAILABLE (5) = REFUSED (6) = SELF-ADMINISTRATION
 (C) = CHANGED (↓) = DOSE DECREASE (N) = NEW DRUG (↑) = DOSE INCREASE (H) = PATIENT CAME IN ON THIS (H)

DRUG ADVERSE REACTIONS/ ALLERGIES/
SPECIAL PRECAUTIONS

DETAILS OF REACTION:

NAME: DESIGNATION:

SIGN: DATE:

INTRAVENOUS/SUBCUTANEOUS INFUSION CHART

NAME	NHS NUMBER	CONSULTANT	WARD	ROOM NO./ BAY
JOE VICKERS	1234567	SMITH	B4	1

DATE	INTRAVENOUS FLUID	DRUG TO BE ADDED/DOSE	VOLUME	RATE	ROUTE <small>IV = intravenous SC = subcutaneous</small>	PRESCRIBER'S SIGNATURE	ADMINISTRATION					PHARMACY USE	
							DATE STARTED	TIME STARTED	TIME STOPPED	NURSE'S SIGNATURE	VOLUME GIVEN		BATCH NUMBER/EXPIRY
							Given by						
20/4	GLUCOSE 50%	AMINOPHYLLINE 500mg	500ml	40ml per hr	IV	B. J. O. S.	20/4	23:00	12:30	A. E. L.			
21/4	SODIUM CHLORIDE 0.9%	POTASSIUM 40mmol	500ml	over 3hrs	IV	B. J. O. S.	21/4	12:30	15:30	E. L. J. A.			
3													
4													
5													
6													
7													
8													
9													
10													

1. Every bottle/bag given to the patient must be recorded on this chart. 2. CHECK for incompatibilities.

Prescription Chart With Errors

Identifying the 11 prescribing errors & omissions on the inpatient chart (add comments)

1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	


Prescription Chart With Gaps Highlighted



PRESCRIPTION CHART & ADMINISTRATION RECORD

CHART..... of.....

Rewritten on.....Checked by:.....Date:.....

DRUG ALLERGIES AND SENSITIVITIES	
	
DETAILS OF REACTION:	
NAME:	DESIGNATION:
SIGN:	DATE:

SURNAME VICKERS	WARD B4	ROOM NUMBER/BAY 1
FIRST NAME JOE	AGE/DOB 18/3/39	HEIGHT 170 CM
WEIGHT 80kg	NHS NUMBER 1234567	SEX M/F M
CONSULTANT SMITH		

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Medication Needs Assessment prior to admission	
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assisted by family/carer	<input type="checkbox"/>
administered by Nurse/Home	<input type="checkbox"/>
Number of carer visits	<input type="text"/>

Date of Admission 20/4/13

Medication needs assessment during admission	
self administration assessment done	<input type="checkbox"/>
patient consent form signed	<input type="checkbox"/>
patient being monitored	<input type="checkbox"/>
patient self administering from:	
original packs	<input type="checkbox"/>
original packs with easy tops	<input type="checkbox"/>
compliance aid (blister pack)	<input type="checkbox"/>
patient unable to self administer	<input type="checkbox"/>

Discharge Needs Assessment	
patient to be discharged with:	
original packs	<input type="checkbox"/>
original packs with easy caps	<input type="checkbox"/>
compliance aid/blister pack	<input type="checkbox"/>
administration by carer	<input type="checkbox"/>
social services informed of medication administration need	<input type="checkbox"/>

Medicine's reconciliation completed on.....

By:

Community Pharmacy

Telephone no.

RISK ASSESSMENT TOOL FOR VTE (Excluding patients < 18 years)

This is a guide: clinicians should exercise clinical judgement when prescribing enoxaparin. VTE risk scores:

Low Risk	Age >60	1	Obesity BMI>30	1	Varicose veins	1	Dehydration	1
Medium Risk	Sickle cell	2	Pregnancy & puerperium	2	Medicines e.g. HRT	2	Family history of VTE	2
High Risk	Active cancer	3	Cardiac or respiratory failure	3	Nephrotic syndrome	3	Acute Medical illness	3
Highest Risk	Surgery and significantly reduced mobility	4	Significantly reduced mobility of >3 days	4	Major Surgery + anaesthetic time >90 mins	4	Personal history of VTE	4
							Immobility inc. plaster cast to leg	2
							Serious infection	3
							Critical care admission	4

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DO NOT PRESCRIBE IF ONE OR MORE OF THE FOLLOWING ARE TICKED (unless benefit outweighs bleeding risk). CONSIDER MECHANICAL OPTIONS/EARLY MOBILISATION.		Risk Score	7			
		Date	2014			
		Signature	Beard			
Uncontrolled hypertension (230/120)	Active/high risk of bleeding	Neuro/spinal/eye surgery				
Procedures with high bleeding risk	Concurrent use of other anticoagulants	Acute stroke				
Untreated bleeding disorders eg: Haemophilia/Von Willebrands	Lumber puncture or epidural/spinal anaesthesia in previous 4 hours or expected within the next 12 hours	Liver failure/acquired bleeding disorder				
Thrombocytopenia (platelets <75x10 ⁹ /L)						

CHECK ALLERGIES ON FRONT OF THE CHART BEFORE PRESCRIBING AND ADMINISTERING

NAME : _____

NHS NUMBER: _____

NAME

REGU

Other charts in use:
(Tick box)

DIABETIC
 SYRINGE DRIVER
 OTHER (please specify) _____

DRUGS STOPPED DURING ADMISSION:

DOCTORS: PLEASE INFORM NURSES AND PATIENT EVERY TIME YOU PRESCRIBE A NEW DRUG

ONCE ONLY & PREMEDICATION DRUGS

DATE	TIME	DRUG (APPROVED NAME)	DOSE	ROUTE	DOCTOR'S SIG.	GIVEN BY	TIME	DATE	PHARMACY
20/4	22:00	PREDNISOLONE	30mg	PO	bleed	AC	22:00	20/4	
20/4	22:00	FUROSEMIDE	40mg	IV	bleed	AC	22:00	20/4	
20/4	23:00	AMINOPHYLLINE	400mg	IV	bleed	AC	23:00	20/4	
		in 100ml 5% GLUCOSE over 20 minutes							

OXYGEN THERAPY

DATE STARTED	DOSE (L/MIN OR INSPIRED OXYGEN %)	ROUTE		FREQUENCY CONTINUOUS OR WHEN REQUIRED	SPO ₂ TARGET TO BE MAINTAINED %	DATE STOPPED	SIGNATURE
		NASAL CANNULA RESERVOIR	SIMPLE FACE MASK VENTURI/HUMIDIFIED				
20/4	28%	VENTURI/HUMIDIFIED		CONTINUOUS	88-92%		

GUIDANCE ON FLOW RATES AND DELIVERY DEVICES AVAILABLE

NASAL CANNULA	SIMPLE FACE MASK	RESERVOIR	VENTURI/HUMIDIFIED
1 2 3 4 (L/MIN)	5 6 7 8 9 10 (L/MIN)	15 (L/MIN)	24 28 35 40 60 (%)
SPECIFY INITIAL %, NOT FLOW RATE			

ORAL ANTICOAGULANT THERAPY - Please review prescription daily

DRUG	Indication	Target INR	Signature	Pharmacy
WARFARIN				
DATE	21/4			
I.N.R.	1.4			
DOSE (AT 18.00)	10mg			
DOCTOR'S INITIALS	AC			
GIVEN BY				

CAUTION: THERE IS AN INCREASED RISK OF BLEED IN THE EVENT OF A FALL WITH PHENINDIONE, ACENOCOUMAROL, WARFARIN, DABIGATRAN, RIVAROXABAN OR APIXABAN.

ADDITIONAL INFORMATION:

Falls Risk HWL
 /
 ↓
 /

Falls Risk HWL
 /
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 /

Falls Risk HWL
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Falls Risk HWL
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Falls Risk HWL
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Falls Risk HWL
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Falls Risk HWL
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Falls Risk HWL
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 ↓
 /

NON ADMINIST

NHS Number

PRESCRIPTIONS MUS

GENERAL PRESCRIPTION

MONTH/YEAR

Info Given (tick)	DRUG (APPROVED NAME)	Route	Additional information	Date	N	H	↑	↓	C	START			DATE			DATE		
										Date	Int							
<input type="checkbox"/>	ENOXAPARIN (CLEXANE)			20/4						1800	40mg	29/4	21/4	22/4				
<input type="checkbox"/>	SALBUTAMOL	inh	driven by O2	20/4						0900	5mg				AC			
<input type="checkbox"/>	IPRATROPIUM	inh	driven by O2	20/4						0900	500 Microg				AC			
<input type="checkbox"/>	PREDNISOLONE	PO		20/4						0900	30mg				AC	EL		
<input type="checkbox"/>	AMOXICILLIN	PO		20/4						0900	500mg				AC	EL		
<input type="checkbox"/>	AMIODARONE	PO		20/4						0900	200mg				AC	EL		
<input type="checkbox"/>	FUROSEMIDE	IV		20/4						0900	40mg				AC			
<input type="checkbox"/>	SYMBICORT	inh		20/4						0900	1 puff				AC	EL		
<input type="checkbox"/>										0900								
<input type="checkbox"/>										0900								

REASON CODES: (1) = SLEEP (2) = FASTING (3) = SEE "ON LEAVE" MEDICATION BOOK (4) = PATIENT UNAVAILABLE (5) = REF (6) = SELF-ADMINISTRATION (7) = DRUG (8) = PATIENT CAME IN ON THIS (C) = CHANGED (↓) = DOSE DECREASE (N) = NEW DRUG (↑) = DOSE INCREASE (H) = HIGH RISK

DRUG ADVERSE REACTIONS/ ALLERGIES/
SPECIAL PRECAUTIONS

DETAILS OF REACTION:

NAME:

DESIGNATION:

DATE:

SIGN:

INTRAVENOUS/SUBCUTANEOUS INFUSION CHART

NAME JOE VICKERS	NHS NUMBER 1234567	CONSULTANT SMITH	WARD B4	ROOM NO./ BAY 1
---------------------	-----------------------	---------------------	------------	-----------------------

DATE	INTRAVENOUS FLUID	DRUG TO BE ADDED/DOSE	VOLUME	RATE	ROUTE <small>IV = intravenous SC = subcutaneous</small>	PRESCRIBER'S SIGNATURE	ADMINISTRATION					PHARMACY USE		
							DATE STARTED	TIME STOPPED	NURSE'S SIGNATURE	VOLUME GIVEN	BATCH NUMBER/EXPIRY			
													Given by	Checked by
20/4	1 GLUCOSE 5%	AMINO PHYLLINE 500mg	500ml	40ml per hr	IV	[Signature]	20/4	12:30	[Signature]	EL				
21/4	2 SODIUM CHLORIDE 0.9%	POTASSIUM 40mmol	500ml	over 3hrs	IV	[Signature]	21/4	12:30	15:30	[Signature]	DL			
3														
4														
5														
6														
7														
8														
9														
10														

1. Every bottle/bag given to the patient must be recorded on this chart. 2. CHECK for incompatibilities.

The eleven learning points from the prescribing exercise are explained below

1. The allergy status has not been completed. Improper documentation of allergy status can result in a patient experiencing a fatal drug reaction or optimal therapy being withheld.
2. The name and NHS number must be completed on every page of the chart so the person's identity is clear whichever section is being used. This is particularly important if the charts are faxed as pages can be mixed up.
3. Medicines reconciliation – the process of ensuring that the patient's medication does not change when transferring between care settings – should record all the details of the drug including strength and presentation to ensure good continuity of care. Symbicort is available in two strengths.
4. When reviewing a patient's medication it is vital to check what the patients has actually received as this may influence the management of the current situation. There are no signatures against enoxaparin so there is no way of knowing whether these doses have been omitted or staff have forgotten to sign.
5. **Recommended NICE treatment of COPD exacerbation:**
 - Nebulised dual bronchodilator therapy with a b2 agonist (salbutamol) and anti-muscarinic (ipratropium). The nebuliser must be driven by air, not oxygen to avoid CO2 retention
 - Prednisolone 30mg od for 7 days
 - Amoxicillin 500mg iv/po tds for 5-7days
 - Always state the number of days treatment for antibiotics when it is a fixed course
 - Marking on the administration section is a fail safe way to prevent further un-prescribed administration when a course of medication is complete
6. **Diuretic therapy increased to offload pulmonary oedema**
 - Furosemide dose increased to e.g. 40mg IV bd for 2 days then to be reviewed
 - Furosemide should be given by slow IV injection at a rate not exceeding 4mg per minute
 - The second dose should not be given later than lunch time to prevent the peak diuretic effect happening at night



7. Aminophylline

- Patient requires a loading dose of aminophylline 5mg per kg diluted as an infusion over 20mins
- This is followed by maintenance infusion of aminophylline 0.5mg per kg per hour to maintain therapeutic levels. The level should be measured 4-6 hours later
- BNF Appendix 4 Intravenous additives section - aminophylline can be diluted in either 5% glucose or 0.9% sodium chloride. Making the maintenance infusion 1mg/ml simplifies calculating the rate to give the infusion
- Note this has been prescribed on two separate section of the chart

8. The following cause K+ loss

- Furosemide
- Aminophylline
- Salbutamol nebulisers

9. The following have the potential to cause atrial fibrillation

- Aminophylline
- Nebulised ipratropium
- Nebulised salbutamol

10. IV Potassium Replacement

- The maximum strength of K+ to be infused peripherally is 40mmols per L at a rate not exceeding 10mmols per hour and at a rate to reflect the age of patient
- Sodium chloride 0.9% may be choice fluid as glucose 5% would stimulate release of insulin which increases intracellular uptake of potassium

11. Oral Amiodarone

- Amiodarone has a very long half life so requires a loading regime of 200mg tds for one week, bd for 2nd week then 200mg od
- When a change in dose is part of a standard initiation regime, further details on the chart can ensure the change is automatically implemented and prevents missing the review date.

12. Warfarin

- Amiodarone potentiates warfarin. The loading dose must be reduced to reflect this and the age of the patient.
- 5mg would be the maximum on the first day and then dose according to the INR

Well Written Prescription Chart



PRESCRIPTION CHART & ADMINISTRATION RECORD

CHART..... of.....

Rewritten on.....Checked by:.....Date:.....

DRUG ALLERGIES AND SENSITIVITIES	
NONE KNOWN	
DETAILS OF REACTION:	
NAME: B GOOD	DESIGNATION:
SIGN: Blood	DATE: 20/4/13

SURNAME VICKERS	WARD B4	ROOM NUMBER/BAY 1	
FIRST NAME JOE	AGE/DOB 18/8/39	HEIGHT 170 cm	WEIGHT 80 kg
NHS NUMBER 1234567	SEX M	CONSULTANT SMITH	

Allergies/sensitivities must be recorded before prescribing or administering medication except in exceptional circumstances

Medication Needs Assessment prior to admission	
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administered by Nurse/Home	<input type="checkbox"/>
Number of carer visits	<input type="text"/>

Date of Admission 20/4/13

Medication needs assessment during admission	
self administration assessment done	<input type="checkbox"/>
patient consent form signed	<input type="checkbox"/>
patient being monitored	<input type="checkbox"/>
patient self administering from:	
original packs	<input type="checkbox"/>
original packs with easy tops	<input type="checkbox"/>
compliance aid (blister pack)	<input type="checkbox"/>
patient unable to self administer	<input type="checkbox"/>

Discharge Needs Assessment	
patient to be discharged with:	
original packs	<input type="checkbox"/>
original packs with easy caps	<input type="checkbox"/>
compliance aid/blister pack	<input type="checkbox"/>
administration by carer	<input type="checkbox"/>
social services informed of medication administration need	<input type="checkbox"/>

Medicine's reconciliation completed on.....

By:

Community Pharmacy

Telephone no.....

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		Date	20/4			
		Signature	Blood			
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Thrombocytopenia (platelets <75x10 ⁹ /L)						

CHECK ALLERGIES ON FRONT OF THE CHART BEFORE PRESCRIBING AND ADMINISTERING

NAME: JOE VICKERS

NHS NUMBER: 1234567

Other charts in use:
(Tick box)

DIABETIC

SYRINGE DRIVER

OTHER (please specify)

DRUGS STOPPED DURING ADMISSION:

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2014	22:00	FUROSEMIDE	40mg	IV	Blawd	AC	22:00	2014	over 10mins
2014	23:00	AMINOPHYLLINE	400mg	IV	Blawd	AC	23:00	2014	S
		in 100ml 5% GLUCOSE over 20 minutes.							

OXYGEN THERAPY

DATE STARTED	DOSE (L/MIN OR INSPIRED OXYGEN %)	ROUTE		FREQUENCY CONTINUOUS OR WHEN REQUIRED	SPO ₂ TARGET TO BE MAINTAINED %	DATE STOPPED	SIGNATURE
		NASAL CANNULA	SIMPLE FACE MASK				
2014	28%	RESERVOIR	VENTURI/HUMIDIFIED	CONTINUOUS	88-92%		Blawd.

GUIDANCE ON FLOW RATES AND DELIVERY DEVICES AVAILABLE

NASAL CANNULA				SIMPLE FACE MASK						RESERVOIR	VENTURI/HUMIDIFIED				
1	2	3	4 (L/MIN)	5	6	7	8	9	10 (L/MIN)	15 (L/MIN)	24	28	35	40	60 (%)
SPECIFY INITIAL %, NOT FLOW RATE															

ORAL ANTICOAGULANT THERAPY - Please review prescription daily

DRUG	WARRFARIN	Indication	Target INR	Signature	Pharmacy
DATE	21/4				
I.N.R.	1.4				
DOSE (AT 18.00)	5mg				
DOCTOR'S INITIALS	BJ				
GIVEN BY					

CAUTION: THERE IS AN INCREASED RISK OF BLEED IN THE EVENT OF A FALL WITH PHENINDIONE, ACENOCOUMAROL, WARFARIN, DABIGATRAN, RIVAROXABAN OR APIXABAN.

ADDITIONAL INFORMATION:

NAME JOE VICKERS

NHS Number 1234567

REGULAR PRESCRIPTION

MONTH/YEAR APRIL 2013

alls Risk H/M/L	Date	Info Given (tick)	DRUG (APPROVED NAME)	Date	START			DATE		
					Init					
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	ENOXAPARIN (CLEXANE)	0600	20/4	21/4	22/4			
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: S/C Additional information: S Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				40mg	AC	EL
										On completion
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	SALBUTAMOL	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: inh Additional information: driven by air Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				5mg	AC	EL
										Graph: 21/4
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	IPRATROPIUM	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: inh Additional information: driven by air Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				500 microg	AC	EL
										Graph: 21/4
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	PREDNISOLONE	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: po Additional information: S Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				30mg	AC	EL
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	AMOXICILLIN	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: po Additional information: FOR 5 DAYS Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				500mg	AC	EL
										Graph: 21/4
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	AMIODARONE	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: po Additional information: TDS 12, BD 12 Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				200mg	AC	EL
										Graph: 21/4
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	FUROSEMIDE	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: IV Additional information: over 10mins Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				40mg	AC	EL
										Graph: 21/4
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	SYMBICORT 400/12	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: inh Additional information: pts own 21/4 Date: 20/4 Dr's signature: Blood	0900 1300 1800 2200				1 puff	X	EL
										Graph: 21/4
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	DRUG (APPROVED NAME)	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: Additional information: Date:	0900 1300 1800 2200						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Dr's signature: N H ↑ ↓ C							
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	DRUG (APPROVED NAME)	0600						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Route: Additional information: Date:	0900 1300 1800 2200						
<input type="checkbox"/>	__/__/__	<input type="checkbox"/>	Dr's signature: N H ↑ ↓ C							

ON ADMINISTRATION REASON CODES: (1) = SLEEP (2) = FASTING (3) = SEE "ON LEAVE" MEDICATION BOOK (4) = PATIENT UNAVAILABLE (5) = REFUSED (6) = CHANGED (7) = DOSE DECREASE (N) = NEW DRUG (↑) = DOSE INCREASE (H) = PATIENT

DRUG ADVERSE REACTIONS/ ALLERGIES/
SPECIAL PRECAUTIONS

NONE KNOWN

DETAILS OF REACTION:

NAME: BLOOD

DESIGNATION:

SIGN: B. G. J. J.

DATE: 2014/13

INTRAVENOUS/SUBCUTANEOUS INFUSION CHART

NAME JOE VICKERS	NHS NUMBER 1234567	CONSULTANT SMITH	WARD B4	ROOM NO./ BAY 1
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DATE	INTRAVENOUS FLUID	DRUG TO BE ADDED/DOSE	VOLUME	RATE	ROUTE <small>IV = intravenous SC = subcutaneous</small>	PRESCRIBER'S SIGNATURE	ADMINISTRATION					PHARMACY USE				
							DATE STARTED	TIME STOPPED	NURSES SIGNATURE	VOLUME GIVEN	BATCH NUMBER		EXPIRY			
														Given by	Checked by	
20/4	1 GLUCOSE 5%	AMINOPHYLLINE 500mg	500ml	40ml per hr	IV	B. G. J. J.	20/4	23:30	12:30	A. B.						
20/4	2 SODIUM CHLORIDE 0.9%	POTASSIUM 40mmol	1000ml	over 6 hours	IV	B. G. J. J.	21/4	12:30	15:30	B. G. J. J.						

1. Every bottle/bag given to the patient must be recorded on this chart. 2. CHECK for incompatibilities.

Question 1


A palliative care nurse rings you at your GP practice to request a prescription for one of your patients Mrs. Susan Smith 13/01/1949 of 3 Viewfield Road, Sidcup. Susan's pain is uncontrolled and she has developed intense itching. The nurse recommends that her medication be changed from morphine to oxycodone.

Her current medication is morphine m/r tablets(MST) 30mg bd

Write an appropriate prescription on the simulated FP10 below, including treatment for breakthrough pain.

Pharmacy Surname & Address Stamp	age	Title, forename,
	<u>DoB</u>	
Number of day's treatment N.B ensure dose is stated		NHS number
Endorsements		
Signature of Prescriber		Date
For dispenser. No. of <u>prescns.</u> on form	<input type="text"/>	
<input type="text"/>		

Example of a well written FP10 with comments

Pharmacy Stamp	Age 64 yrs	Title, Forename, Surname & Address
THIS IS A SAMPLE	D.o.B	Mrs Susan Smith
	13/01/49	3 Viewfield Rd SIDCUP
<small>Please don't stamp over age box</small>		NHS Number: SI 4NH
Number of days' treatment		
N.B. Ensure dose is stated		
Endorsements		
<p>Oxycodone m/r 20mg tablets</p> <p>Take one every 12 hours.</p> <p>supply 14 (fourteen)</p> <p>Oxycodone 5mg/5ml oral solution</p> <p>Take one 5ml spoonful prn for breakthrough pain upto four times a day supply 250ml (Two hundred and fifty ml)</p>		
Signature of Prescriber		Date
Dr D. O. CORD		20/04/13
For dispenser No. of Prescs. on form	Station Practice	
	Sidcup	
	SI SLF	
	Tel 0208 111 2222	
	58592680273	FP10SS0608

Answer 1

- Opioid dose needs increasing by 30 – 50% as pain uncontrolled
- Oxycodone 5mg orally + 10mg morphine orally
- Dose for breakthrough pain is one sixth to one tenth of total daily dose

Question 2

You see Ms Annie Walker dob 03/09/78 of 34 Mulberry Way, Bromley with a severe sore throat and pyrexia. She has no nasal symptoms, her tonsils are pustular and she looks unwell. She had a scan last week confirming she is 12 weeks pregnant. As a 5 year old, she had a severe rash and facial swelling, when prescribed Amoxicillin.

Write an appropriate prescription on the simulated FP10 below.

Pharmacy Surname & Address Stamp	age	Title, forename,
	<u>DoB</u>	
Number of day's treatment N.B ensure dose is stated		NHS number
Endorsements		
Signature of Prescriber		Date
For dispenser. No. of <u>prescns.</u> on form	<input type="text"/>	
<input type="text"/>		

Example of a well written FP10 with comments

Pharmacy Stamp	Age 34 yrs.	Title, Forename, Surname & Address Ms Annie Walker 34 Mulberry Way Bromley
	D.o.B 03/09/78	
SAMPLE NOT TO BE USED		
Please don't stamp over age box Number of days' treatment N.B. Ensure dose is stated		NHS Number:
Endorsements Erythromycin 250mg capsules Take one capsule qds for 10 days		
Signature of Prescriber Dr. D. O. Good		Date 20/04/13
For dispenser No. of Prescs. on form NHS	Skation Practice Sidcup Tel No 0208 111 2222	
	58592680017	FP10SS0608

Answer 2

- 10 days treatment of a macrolide is recommended for severe non viral sore throats in penicillin allergic patients
- The macrolide recommended in pregnancy is erythromycin
- Use a qds frequency to lessen gastro disturbance

Reflective Diary for Educational Events

Prescribing module: Reflections from learning exercise

Date and Time

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What I learned from this activity:

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Am I going to change anything as a result of this session? / How will I apply learning into my clinical practice?

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Paper 1

Drug calculations practice tests. The answers can be found on page 33

		Answers
1)	Calculating basic measures Convert the following:- (a) 0.05g = how many mg (b) 0.025 litre = how many mls? (c) 1575 micrograms = how many mg? (d) 750 mg = how many grams?	
2)	Calculating drug dosage How many tablets would you give? Give 0.25 mg of digoxin orally (stock = 250 microgram tablets)	
3)	Calculate the volume of drug to be given Give S/C insulin injection of 22 units (stock 10 ml ampoule of 100 units in 1ml)	
4)	If you drew up 10ml of 2% lidocaine in a syringe, how many mg would there be in 10 ml?	
5)	You have a stock vial of Diclofenac (75mg in 3ml) and you wish to draw up a dose of 50mg for your patient. how many millilitres would you draw in to your syringe to give this dose.	
6)	Calculate the hourly infusion rate. Administer Dopamine 4 micrograms/kg/minute to a 60 kg patient using hourly rate on pump (Dopamine 200 mg in 50 ml dextrose)	
7)	What would be the daily dose? Prescribe drug B to a 75 kg adult – 40 micro- grams/kg/day	
8)	Now divide the above (Q7) into 3 daily doses	
9)	Calculate the correct dose. Dopamine 2 micrograms/kg/min to a 50 kg patient using hourly rate on pump (Dopamine 200 mg in 50 ml dextrose)	


Paper 1

		Answers
10)	Calculate the correct dose. Give 500 micrograms Adrenaline I/V (Stock is 10 ml solution 1:10,000)	
11)	Calculate the correct volume of syrup to be given. Give 400 micrograms of Granisetron syrup orally (Stock solution 1 mg in 5 ml)	
12)	If you wanted to administer 3mg/kg of 1% lidocaine to a 72kg man, how many mls would you give?	
13)	Calculate how many mls you would give. Using an ampoule of 1% lidocaine, administer 3 mg/kg to a 70 kg patient	
14)	How many mls should you give? Prepare 62.5 micrograms of digoxin for I/V administration (Stock ampoule of 500 mcg in 2 ml)	
15)	Calculate the drug volume to be given. Give 135 mg hydrocortisone for I/V use (Stock 100 mg in 2 ml)	
16)	How many mls would you give (diluted)? Give heparin 3500 units (dilute) (Stock is 5000 units in 1 ml)	
17)	Prescribe drug B to a 50 kg adult – 30 micrograms/kg/day	
18)	A child weighing 19kg requires 400micrograms/kg of adrenaline 1 in 1000 for nebulisation. Maximum dose is 5mg What dose would you give? How many ml of adrenaline would this be?	

Paper 1 adapted from calculations questions, clinical skills laboratory, Whipps Cross Hospital 2003 by J Hewitt & Dr E Tsarfati 2013. Paper 2 written by Dr E Tsarfati. Both papers reviewed and amended by H Walker chief pharmacist, NELFT June 2013

Paper 2

The answers can be found on page 33

		Answers	
1)	You have an IV Adrenaline ampoule of 1:10,000. What does that represent in milligrams and millilitres?		
2)	You are asked to prescribe treatment to treat a deep vein thrombosis using Enoxaparin, a low molecular weight heparin. The patient weighs 74kg and has normal renal function. The dose of Enoxaparin is 1.5mg/kg		
3)	The dietician has asked you to calculate how many calories you've given your patient via IV fluids. So far today you've given 2L of 5% Glucose. Each gram of glucose represents 4kcal		
4)	Dorothy, a 23 year old trainee chef, needs stitches to her forearm after accidentally cutting her left arm at work. She weighs 62 kg and has no allergies. Calculate the maximum local anaesthetic dose in millilitres using 1% lidocaine and 2% lidocaine with and without adrenaline. (Dose Lidocaine Without Adrenaline 3mg/kg with Adrenaline 7mg/kg) Populate the table with your answers.	Without Adrenaline	With Adrenaline
		1%=	1%=
		2%=	2%=
5)	A syringe driver is marked in mm. You want to give diamorphine 20 mg over 12 hours and the dose is put in up to 48 mm. What rate would you set the driver to run at?		
6)	How would you express 5 000 000 micrograms in milligrams?		
7)	Your 16 year old patient is diagnosed with diabetic ketoacidosis and you wish to start a fixed rate insulin infusion at 0.1units/kg/hr, which follows trust policy. How much insulin will you prescribe for an 85kg patient?		
8)	A critically ill patient requires pain relief in the form of IV morphine. You wish to give 7.5mg. How many millilitres will you draw into a syringe if the morphine ampoule contains 2mL of 10mg/ml?		
9)	You wish to give your patient 1L of 0.9% sodium chloride over 8 hours. How many millilitres per hour will this run at		
10)	A patient in heart failure with significant pulmonary oedema requires an IV infusion of glyceryl trinitrate (GTN). You are to give 100micrograms/minute. This comes in ampoules of 10mg/10ml. You only have three ampoules of GTN on the ward. For how long will your supply provided as an infusion last for this patient?		

Answers

Paper 1

1)	a) 50mg, b) 25 ml, c) 1.575mg, d) 0.75g
2)	One
3)	0.22ml
4)	200mg in 10ml
5)	2ml
6)	3.6ml per hour
7)	3mg
8)	1mg tds
9)	1.5mls/hr
10)	5ml
11)	2ml
12)	21.6mls
13)	21ml
14)	0.25ml
15)	2.7ml
16)	0.7ml
17)	1.5mg
18)	5mg; 5ml

Paper 2

1)	1mg in 10ml or 1000mg in 10,000ml	
2)	111 mg but expect the dose to be rounded down to 100mg	
3)	400kCals	
4)	Without Adrenaline	With Adrenaline
	1% = 18.6mls	1% = 43.4 mls
	2% = 9.3mls	2% = 21.7mls
5)	4mm per hour	
6)	5000mg	
7)	8.5 units per hour	
8)	0.75ml	
9)	125ml per hour	
10)	300 minutes = 5 hours	

Reflective Diary for Educational Events

Drug calculations test: Reflections from learning exercise

Date and Time

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What I learned from this activity:

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Am I going to change anything as a result of this session? / How will I apply learning into my clinical practice?

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Developing people for health and healthcare