PHA-6020Y

Patient centred medicine from bench to bedside

CVS – Clinical Workshop 3 – ANSWERS

CORONARY/ISCHAEMIC HEART DISEASE

Learning Outcomes

By the end of this workshop you will be able to:

- Describe the therapeutic options for the treatment of:
    - Stable angina
    - Acute myocardial infarction (STEMI)
- Identify pharmaceutical care issues associated with the treatment of individual patients with IHD
- Identify the therapeutic and toxic monitoring parameters for the drug used in the treatment of IHD

Pre-workshop tasks:

- In advance of this workshop please complete **CASE 1.**

Resources

- On Bb:
    - Screencasts: Coronary Heart Disease
    - NICE Guidelines: Stable angina (https://www.nice.org.uk/guidance/cg126)
    - NICE Guidelines: Acute Coronary Syndromes (https://www.nice.org.uk/guidance/ng185)
    - BNF: Treatment summaries – Musculoskeletal system- NSAIDs – Cardiovascular events

CASE 1 TO BE COMPLETED IN ADVANCE OF WORKSHOP

CASE 1 – Stable Angina

Mr HS, a 52 yr old South Asian man, presents to his GP with a history of chest tightness/pain on several occasions whilst walking his dog. His symptoms resolved completely on each occasion following a period of rest. He initially assumed it was 'indigestion' but on each occasion was unrelated to food or alcohol intake. He has hypertension, is slightly overweight (BMI 26), smokes 10 cigarettes/day (recently cut down from 20/day) and now 'exercises' by taking the dog for a walk each day (wife had previously done this but GP had advised increased exercise when he was diagnosed with HT). His brother had an AMI aged 62 yrs and his mother has Type II DM.

His current regular drug therapy is:

Indapamide 2.5mg om
Celecoxib 100mg bd prn (for recent knee pain)

Diagnosis: Stable angina

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1. What are Mr HS's risk factors for CHD?

Male
HT
Overweight
Family history of IHD (& DM)
Smoking
South Asian ethnicity

2. What is celecoxib and what are the problems associated with its use in Mr HS?

Cyclo-oxygenase-2 inhibitor (NSAID) – indicated for pain & inflammation in OA and RA

Increased cardiovascular risk associated with use of COX-2 inhibitors + diclofenac (also some recent data indicating may also be a risk with other non-selective NSAIDs, although appears some worse than others – **Naproxen/low dose ibuprofen** (max 400mg tds – risk increases if use 2.4g daily) appear safest with short duration)

CSM advises with IHD should be switched to alternative therapy where at all possible

Also issue with **ALL NSAIDs** is risk of fluid retention and increased BP so avoid if possible.

Check if still has knee pain and advise try paracetamol and review pain control

3. Comment on the appropriateness of Mr HS's current therapy for his HT

NICE/BHS 2019 guidelines advise ACEI (or ARB) as <55yrs but no need to change unless problems

Check efficacy (target <140/90) and toxicity

4. What drug therapy would be appropriate for Mr HS's angina?

- PRN S/L GTN – for treatment of acute angina attacks
- β- blocker /Calcium channel blocker – joint first line for stable angina (NICE guidance) – either drug can be used first, then add on as a second agent if required

- If angina not controlled by β- blocker /Calcium channel blocker (or combination of both) add in any of following:
Nitrate (long acting)/ivabradine/ ranolazine /nicorandil (2016 MHRA guidance – consider nicorandil after all others due to risk of ulceration)

- + secondary prevention – aspirin + statin (atorvastatin 80mg)

NB: When starting either β- blocker /Calcium channel blocker for angina, these will also lower bp, so **stop Mr HS's indapamide** to prevent polypharmacy

Mr HS's GP prescribes the following for his angina:

Propranolol 40mg tds
GTN tabs s/l prn

5. Comment on the appropriateness of Mr HS's therapy for his stable angina, what problems may occur and what changes would you recommend to help improve adherence?

β- blocker tends to be 1st line choice over CCB unless C/I

No evidence than one is better than the other although **drug characteristics/side-effect profile** may affect choice:

Propranolol cheap but likely to have more S/E's & TDS regime will not improve adherence

Advise use **cardioselective** (N.B. these are still not cardiospecific) (eg Atenolol, bisoprolol, metoprolol) to avoid problems with β_2 receptor blockade (bronchospasm))

(Not relevant to this patient but cardioselective β- blocker also less likely to mask symptoms of hypo in diabetic patient)

Also use of water soluble β- blocker (eg atenolol) rather than lipid soluble (eg propranolol) is less likely to cause CNS S/E's (eg sleep disturbance, nightmares)

[Oxprenolol, pindolol, acebutolol, celiprolol - **Intrinsic sympathomimetic activity** – partial agonist stimulate as well as block adrenergic receptors – less likely to cause bradycardia & cold extremities]

Advise change to alternative β- blocker E.g. Atenolol 100mg od

6. What are the counselling points for his recommended drug treatment?

Atenolol 100mg od:

Name, strength, frequency, indication, S/E's (bradycardia, dizziness, cold extremities, sleep disturbances, fatigue, impotence etc) – use PIL & emphasise less likely with atenolol vs propranolol

DO NOT STOP ABRUPTLY – may ppt angina due to rebound receptor hypersensitivity

GTN s/l: (most patients will receive s/l spray but occasionally get tablets)

Name & indication
Under the tongue when get chest pain (or when know going to get chest pain on exertion)
[If tablets => don't swallow (inactive)]
Sit down (may cause dizziness and rest helps chest pain)
May cause headache [if tablets can spit out or swallow when chest pain gone to prevent this] but explain caused by opening up of blood vessels in head and goes quickly
If chest pain not relieved after 5 mins taken another, if no improvement after further 5 min take a 3rd BUT must contact GP/ambulance as well
Spray – expiry usually about 2 years but remind patient to check
Tablets have 8-week expiry once opened (write date on bottle when opened)
Keep with you at all times, keep spare, can be bought OTC in pharmacy

One month later, Mr HS is still suffering intermittent chest pain and his GP refers him to the local hospital to see a consultant cardiologist in the outpatient clinic. The consultant prescribes him:

Isosorbide mononitrate 10mg bd

This controls his chest pain for a while, but then he begins to get increasing chest pain on exertion

7. What is the likely cause of his treatment not working and what can be done to improve its efficacy? What are the counselling points for ISMN?

Nitrate tolerance – nitrates interact with sulphydryl groups in vascular tissue (to cause release of nitric oxide to cause vasodilatation) – continued use depletes the sulphydryl groups resulting in tolerance, but restoration will occur within hours of interruption in nitrate use

Need 4-8 hr "**nitrate free period**" in every 24hrs:

Plan for when least likely to get chest pain

- BD dosing – 2nd dose ideally no later than 2-4pm (or definitely no later than 6pm)
- MR preparations- have only 15-20 hr action (i.e. in-built nitrate-free period)
- Patches – remove overnight

Because of need for "nitrate-free" period => nitrates do not provide full 24-hour control of angina => therefore nitrates only appropriate for "add-on" use to other antianginals and not appropriate for monotherapy

Counselling:

Nome, strength, frequency, regime (re: tolerance avoidance), indication
Side-effects: throbbing headache (particularly in first few days – patients often refuse to continue taking but if can be encouraged to persevere & use prn paracetamol, usually stops after a few days), flushing, dizziness, tachycardia

CASE 2 – STEMI (ST-elevated Myocardial Infarction)

For case 2, Mr HL, you have been provided with the following documents:

- Drug chart (pages 7-12)
- Medical notes (pages 13-20)
- "End-of-bed" TPR chart (page 21)

His blood test results on admission are as follows:

Norfolk and Norwich University Hospital NHS Trust **PATHOLOGY DEPARTMENT**		Consultant/GP: Dr T Wright		PATIENT LOCATION ***Cardiac Ward***
Patient Name: Mr HL			NHS No: 987654332	
Hosp no: 123456		Sex: M	Age: 55 Yr	Pathology
Patient Address:				
Lab Episode No:	8904		Date/Time Collection: Today	
Address for Report: Norfolk & Norwich University Hospital Colney Lane Norwich NORF NR4 7UY				

BIOCHEMISTRY Collection LAB No Today 8904	**Trop I** **6,356*** <0.4 ng/ml	**Total chol** **6.8*** mmol/L	**Bilirubin** **18** **(3-20)** **µmol/l**	**ALP** 61 **(20-100)** **IU/l**	**AST** **39** **(5-40)** **IU/l**
	ALT **26** **(5-30)** **IU/l**	**GGT** **41** **(5-45)** **IU/l**	**PT** **12** **(10-15)** **secs**	**Hb** **15.2** **(14-18)** **g/dl**	**WBC** **10.3** **(4-11)** **x 10^9/l**
	Na **138** **(134-145)** **mmol/L**	**K** **4.7** **(3.6-5.0)** **mmol/L**	**Urea** **5.8** **(1.7-7.1)** **mmol/L**	**Creatinine** **122** **(55-125)** **µmol/L**	**eGFR** **>90** **ml/min/m^2**

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Inpatient Prescription Chart

E

Weight (kg)	Height (cm)	Surface Area (m^2)
85kg		
Admission Date	**Ward**	**Consultant(s)**
15-4	CARDIAC	WRIGHT

Name MR HL Hospital No

Date of Birth

Address

Use Label

Oral Medication in Surgical Pre Op Patients

Patients who are "nil-by-mouth", awaiting surgery MUST receive their usual oral medication (except oral hypoglycaemics) unless the prescription has been cancelled.

Non-administration of Drugs

Use the appropriate code on the administration record and record detailed reason (e.g. steps to obtain medication) on the notice board.

1 Nil By Mouth
2 Off Ward
3 Vomiting/Nausea
4 Refused
5 Medical instruction
6 No IV canula *in situ*
7 Contraindicated
8 Drug not available

Allergies & Sensitivities

If none, state "None". Record source of information e.g. "patient", "notes" etc

NKDA

Latex Allergy ☐ Yes ☑ No

☐ Patient ☐ Medical Notes ☐ GP ☐ Dr ☐ Nurse ☐ Pharmacist

Signed AD Name Date 15/4/1

Thromboprophylaxis Risk Assessment

Complete for ALL ADULT PATIENTS, excluding OBSTETRIC patients.
REASSESS within 24 HOURS of Admission and whenever the clinical situation changes (see STEP SIX below)

STEP ONE: CLASSIFICATION OF PATIENT – Tick the relevant box

Surgical Patient ☐ Medical Patient : not ambulant ☐ Medical Patient : ambulant ☑

Assess for thrombosis and bleeding risk (complete all steps below)

Thromboprophylaxis not indicated. Risk assessment complete, tick box 4b and sign admissions assessment

STEP TWO: ASSESS THROMBOSIS RISK FACTORS - Tick all boxes that apply or tick here if NO thrombosis risk factor ☐

Significantly reduced mobility for 3 days or more	☐	Active cancer or cancer treatment	☐
Hip or knee replacement	☐	Age > 60 years	☑
Hip fracture	☐	Dehydration	☐
Total anaesthetic plus surgical time >90 minutes	☐	Known thrombophilia	☐
Surgery involving pelvis or lower limb with total anaesthetic plus surgical time >60 minutes	☐	Medical morbidity (heart failure; respiratory disease; infection; inflammatory conditions; metabolic, diabetic/endocrine crisis)	☐
Acute surgical admission with inflammatory or intra-abdominal condition	☐	Obesity (BMI >30 kg/m^2)	☐
		On HRT or oestrogen containing contraceptive	☐
Critical Care admission	☐	Personal history or first degree relative with PE or DVT	☐
Plaster cast immobilisation of lower limb	☐	Reduced mobility	☐
		Varicose veins with phlebitis	☐
		Pregnancy or < 6 weeks post partum	☐

STEP THREE: REVIEW RISK OF ANTICOAGULATION – Tick all boxes that apply or tick here if NO anticoagulation risk factor ☐

Neurosurgery, spinal surgery or eye surgery	☐	Acute stroke or history of intracranial haemorrhage	☐
Other procedure with high bleeding risk	☐	Already on anticoagulant (e.g. warfarin) therapy	☐
		Active bleeding from any source/major bleeding risk e.g. peptic ulcer	☐
		Blood pressure >230 systolic or >120 diastolic	☐
If patient has lumbar puncture, spinal/epidural anaesthesia or epidural catheter planned or in situ and anticoagulation is indicated, refer to Trust guideline CA2031 for timing of anticoagulation		Thrombocytopenia (platelets < 75 x 10^9/L)	☐
		Untreated inherited bleeding disorder e.g. Haemophilia and VWD	☐
		High risk of falls and head injury	☐
		Acquired bleeding disorder e.g liver disease INR>1.3 or varices	☐
		Heparin Allergy or Heparin Induced Thrombocytopenia (seek advice)	☐

STEP FOUR: If any box ticked in STEP TWO, consider prescribing drug thromboprophylaxis according to Trust Guidelines
If any box ticked in STEP THREE, consider if anticoagulation risk contraindicates the prescribing of drug thromboprophylaxis
If prescribing Enoxaparin reduce standard dose of 40 mg to 20 mg od if eGFR <30 mL/minute/1.73 m^2

4a LMWH Thromboprophylaxis Recommended ☐
(LMWH to be prescribed in 'Thromboprophylaxis' section of drug chart)

4b LMWH Thromboprophylaxis Not Recommended ☑

STEP FIVE: ANTI-EMBOLISM STOCKINGS – Indicated in all surgical patients with any box ticked in STEP TWO, unless the following contraindications are present: Lower limb dermatitis, ulceration, gangrene, risk of compartment syndrome, peripheral vascular disease, leg deformity preventing proper application, recent skin graft, severe leg oedema

Stockings Recommended ☐ **Stockings NOT recommended/contraindicated** ☐

Admission Assessment Completed By:	Name: A. Well	Sign:	Date: 15/4/1

STEP SIX: REASSESS within 24 HOURS of admission and whenever the clinical situation changes			
	Within 24 Hours Date:	Reason if change in risk assessment outcome:	Sign:
	Clinical Change Date:	Reason if change in risk assessment outcome:	Sign:

UNH035

Signature Record

All Prescribers MUST complete the Signature Record (including signature as used on the prescription chart)

Date	Name (BLOCK CAPITALS)	Status	Signature	Date	Name (BLOCK CAPITALS)	Status	Signature
24	1. A. Well	SF3			2.		
	3.				4.		
	5.				6.		
	7.				8.		
	9.				10.		
	11.				12.		

Medicines Policy **Full policy available on the Trust intranet homepage via DTMM icon**

Good Prescribing Practice

All medicines to be administered or applied to a patient must be clearly written on the drug chart.
No medicines should be given unless details are clear and can be easily understood.
All prescriptions must include:

- The APPROVED NAME of the medicines, written in CAPITAL LETTERS e.g. FUROSEMIDE not LASIX®
- The FORM AND/OR ROUTE of administration e.g. tablet, syrup, injection; oral, subcutaneous
- The DOSE must be IN FULL UNITS; e.g. 500 mg not 0.5 g or 250 micrograms not 0.25 mg. state micrograms in full not mcg
- Where the dose is expressed in terms of units, the word 'UNITS' must be written in full
- The directions and times of administration. It is the prescriber's responsibility to state times of administration using the 24 hour clock.
- The FULL SIGNATURE and BLEEP NUMBER of the prescriber (initials do not fulfil the legal requirement). In the case of consultant staff please state telephone extension number. The prescriber will be a qualified, UK registered Doctor.
- The FULL DATE, including year; e.g. 01/01/10 or 1st Jan 10
- If a volume then the stated dose must also include a strength e.g. Salbutamol 2mg/5mL; dose 5mL/hour

If there remains any doubt about the legibility of a prescription or if it is not understood, the nurse or other healthcare practitioner has a responsibility NOT to administer or supply the drug, and must contact the prescriber concerned or another doctor or a pharmacist.

For **As Required Medication** the prescription must also state the following in addition to the above:

- The frequency of administration including definite dosing intervals and/or maximum dose
- The indication of the medicine e.g. "for headache"

Alterations to the Prescription

Alterations to an existing prescription are NOT allowed. The prescription must be re-written if alterations to any part are required.

Discontinuation of Prescriptions

- When a medication is no longer required, the prescriber should cancel the prescription by drawing a thick line beside the last entry, which should be signed and dated; in addition, a single oblique line should be scored through the drug name
- The prescriber must sign and date at the end of the administration record next to the thick line.
- The cancelling of a prescription must be unambiguous in its intent but must NOT totally obscure the record.

Allergies

- Allergies must be written and signed (by initials) clearly in the box provided on the front of the prescription chart.
- Allergies must state the name of the medicines in capital letters, the nature of the allergy (if known) and the source of the information.
- Where no allergies/hypersensitivities exist "None Known" should be entered and signed.
- If the allergy section is left blank the practitioner can refuse to administer or dispense any item from the prescription.

Dose to be omitted

If a dose is to be omitted, the prescriber must clearly annotate the medication chart with a "X" in the relevant space in relation to date and time on the record of administration section of the chart.

Once-only Drugs

Name MR LL

Hospital No.

Date to be given	Time to be given	Drug (approved name)	Dose	Route	Prescriber's Signature & Bleep Number	Date	Given by	Time Given	Pharmacy
		1.							
		2.							
		3.							
		4.							
		5.							
		6.							
		7.							
		8.							
		9.							
		10.							
		11.							
		12.							
		13.							
		14.							
		15.							

Noticeboard

This section is used by healthcare professionals to record useful information relevant to this prescription chart

(15/4/ TC 5.4, LFT's ✓, e GFR 790)

Regular Prescriptions

Name: MR HL | Hospital No:

Circle times or enter other times ▼ | Date ▸ 15/4 | 16/4 | 17/4

Thromboprophylaxis — Refer to Thromboprophylaxis Risk assessment

Drug details	Start / Stop	Time	15/4	16/4	17/4
1. Drug (approved name): — Dose: — Route: — Frequency/Other Instructions: — Pharmacy: — POD ( ) TTO / IP / STOCK / CD Sign: Date: — DH ☐ New ☐ — Prescriber's Signature:	Start Date: — Stop Date: — Bleep No:	06			
		08			
		12			
		14			
		18			
		22			
		24			
2. Drug (approved name): ASPIRIN — Dose: 75mg — Route: PO — Frequency/Other Instructions: OD — Pharmacy: 16/4 — POD ( ) (TTO) / IP / STOCK / CD Sign: [signature] Date: 16/4 — DH ☐ New ✓ — Prescriber's Signature: [signature]	Start Date: 15/4 — Stop Date: — Bleep No:	06			
		(08)	✓	[signature]	LC.
		12			
		14			
		18			
		22			
		24			
3. Drug (approved name): CLOPIDOGRIL — Dose: 75mg — Route: PO — Frequency/Other Instructions: OD — Pharmacy: 16/4 — POD ( ) (TTO) / IP / STOCK / CD Sign: [signature] Date: 16/4 — DH ☐ New ✓ — Prescriber's Signature: [signature]	Start Date: 15/4 — Stop Date: — Bleep No:	06			
		(08)	✓	[signature]	LC.
		12			
		14			
		18			
		22			
		24			
4. Drug (approved name): BISOPROLOL — Dose: 2.5mg — Route: PO — Frequency/Other Instructions: OD — Pharmacy: 16/4 — POD ( ) (TTO) / IP / STOCK / CD Sign: [signature] Date: 16/4 — DH ☐ New ✓ — Prescriber's Signature: [signature]	Start Date: 15/4 — Stop Date: — Bleep No:	06			RV
		(08)	X	?	
		12			
		14			
		18			
		22			
		24			
5. Drug (approved name): METFORMIN — Dose: 500mg — Route: PO — Frequency/Other Instructions: BD — Pharmacy: 16/4 — POD ( ) (TTO) / IP / STOCK / CD Sign: [signature] Date: 16/4 — DH ☑ New ☐ — Prescriber's Signature: [signature]	Start Date: 15/4 — Stop Date: — Bleep No:	06			
		(08)	X	X	X	X
		12			
		14			
		18			
		(22)	X	X	X
		24			
6. Drug (approved name): RAMIPRIL — Dose: 2.5mg — Route: PO — Frequency/Other Instructions: BD — Pharmacy: 16/4 — POD ( ) (TTO) / IP / STOCK / CD Sign: [signature] Date: 16/4 — DH ☐ New ✓ — Prescriber's Signature: [signature]	Start Date: 15/4 — Stop Date: — Bleep No:	06			
		(08)	X		
		12			
		14			
		18			
		(22)	CT.	NO	
		24			
7. Drug (approved name): — Dose: — Route: — Frequency/Other Instructions: — Pharmacy: — POD ( ) TTO / IP / STOCK / CD Sign: — DH ☐ New ☐ — Prescriber's Signature:	Start Date: — Stop Date: — Bleep No:	06			
		08			
		12			
		14			
		22			
		22			
		24			

As Required Prescriptions

Name: Mr HL

Hospital No.

1. Drug (approved name)		Start Date
GTN Spray		15/4/..
Dose: I – II	Route: SL	Pharm cc: 15/04/14 DH New: 16/4/14 STOCK/ POD / (TTO) / IP / CD
Maximum Frequency	Indication / Other Instructions	
Prescriber's Signature: [signature]		Bleep No

2. Drug (approved name)		Start Date
DIAMORPHINE		15/4/
Dose: 2.5mg	Route: IV	Pharm cc: 15/04/14 DH New STOCK/ POD / TTO / IP / (CD)
Maximum Frequency	Indication / Other Instructions	
Prescriber's Signature: [signature]		Bleep No

3. Drug (approved name)		Start Date
METOCLOPRAMIDE		15/4/
Dose: 10 mg	Route: IV	Pharm cc: 15/04/14 DH New (STOCK)/ POD / TTO / IP / CD
Maximum Frequency: TDS	Indication / Other Instructions	
Prescriber's Signature: [signature]		Bleep No

4. Drug (approved name)		Start Date
Dose	Route	Pharm cc DH New STOCK/ POD / TTO / IP / CD
Maximum Frequency	Indication / Other Instructions	
Prescriber's Signature		Bleep No

5. Drug (approved name)		Start Date
Dose	Route	Pharm cc DH New STOCK/ POD / TTO / IP / CD
Maximum Frequency	Indication / Other Instructions	
Prescriber's Signature		Bleep No

6. Drug (approved name)		Start Date
Dose	Route	Pharm cc DH New STOCK/ POD / TTO / IP / CD
Maximum Frequency	Indication / Other Instructions	
Prescriber's Signature		Bleep No

7. Drug (approved name)		Start Date
Dose	Route	Pharm cc DH New STOCK/ POD / TTO / IP / CD
Maximum Frequency	Indication / Other Instructions	
Prescriber's Signature		Bleep No

8. Drug (approved name)		Start Date
Dose	Route	Pharm cc DH New STOCK/ POD / TTO / IP / CD
Maximum Frequency	Indication / Other Instructions	
Prescriber's Signature		Bleep No

Administration record (for each prescription): Date/ Time | Route | Dose | Given By

Pharmacy Use Only

Drug History: Completed by: Name..PD..... Bleep No 0512 Date..16/4.. (Technician / (Pharmacist))

Sources used (circle): PODs / (Patient) / GP List / Repeat Rx / GP verbal / Community MAR / Recent TTO / Relative or Carer / Other.....

As per chart (list numbers): ..(5)..

Complete ONLY for medication that has NOT already been charted OR if there are dose discrepancies.

Drug Name	Dose / Freq / Route	Sign & Date	Action			Reason	Sign & Date
			Continue	Stopped	Changed		
1. Meloxicam.	7.5mg OD	PD 16/4					
2. Lansoprazole	15mg pm						
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							

Medicines Reconciliation: Completed by: Name..PD..... Bleep No..0512.. Date..16/4.. (Pharmacist)

Medicines Management Pre-Admission: ☑ Patient ☐ Other.....

Compliance Aids Pre- Admission (circle as appropriate)

(None) / Medication chart / Nomad® / Mediwallet® / Large print labels / Easy-open bottles/ Carers MAR chart / Other .....

Community Pharmacy Details: Name ..... Tel:..... Contacted: Date:..... Sign.....

Nursing / Residential Home: Name ..... Tel:..... Medication at Nursing Home Yes / No

Pharmacy Communication Board:

Date	Issue	Sign	Resolved Sign & Date

☐ Drug Chart re-write checked Name..... Bleep No ..... Date..... (Pharmacist)

☐ OSD Locker re-checked Name..... Bleep No ..... Date..... (Pharmacist/Technician)

Discharge Medicines

Patients own medication at home Yes / No Name..... Date.....

☐ TTO Clinically Checked Name..... Bleep No ..... Date..... (Pharmacist)

☐ Compliance Aids (circle) (None) Medication chart / Nomad® / Mediwallet® / Large print labels / Easy open bottles/ Carers MAR chart /

Other.....

Our Vision
To provide every patient with the care we want for those we love the most

Norfolk and Norwich University Hospitals NHS
NHS Foundation Trust

Clinical Assessment

MR HL

h Label

Date and Time	Presenting complaint:
	Clerking Doctors Name: A. Wall Grade: ST3
15/04	55 ♂ – No previous cardiac hx – Ex-smoker – +ve FH – DM onset of chest pain around 1630 while watch football match on television – during half time while 8/10 having cup of tea. sweaty pain 8/10 called ambulance 3rg – post STEMI had aspirin/clop & Morphine 10mg – On arrival still have pain 2/10 Morphine 2.5mg

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To provide every patient with the care we want for those we love the most

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Addressograph
MR HL

Past Medical History

- T2DM
- Asthma
- previous Indigestion - not on regular PPI

Co-morbidities	Tick	Co-morbidities	Tick	Co-morbidities	Tick
Acute myocardial infarction		Diabetes complications		Renal disease	
Cerebrovascular accident		Peptic ulcer disease		Liver disease	
Congestive heart failure		Peripheral vascular disease		Severe Liver disease	
Connective tissue disorder		Pulmonary disease		Paraplegia	
Dementia		Cancer			
Diabetes		Metastatic cancer			

Family History

Smoking: Have you ever smoked? Yes (No)
[If smoked <100 in lifetime = never smoked]

If yes:
When did you start?
When was your last cigarette?
How many cigarettes do/did you smoke a day at most?
Calculate maximum packs per year?

Recreational Drugs:

Alcohol: How often have you had 6 or more drinks if female, or 8 or more if male, on a single occasion in the last year?

0	1	2	3	4
Never	Less than Monthly	Monthly	Weekly	Daily, or almost daily

Scoring: Total of 0–1 indicates low risk drinkers:
Total of 2–4 indicates increasing or higher risk drinkers:
Overall Total of 2 or above is SASQ positive:

Score:

Consent for Alcohol team to contact:

Our Vision
To provide every patient with the care we want for those we love the most

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MR HL ...oh Label

Systems Review

Current medication (including over the counter, herbal and homeopathic remedies and any medication recently stopped e.g. antibiotics)

Medication	Indication (if known)	Dose	Frequency	Reconciled (Pharmacist)
- Meloxicam		?		
- PRN - Lansoprazole.		?		(see drug chart) 16/4
- Metformin.		?		

On anticoagulant medication ☐ On diabetic medication ☐ On steroid / Immunosuppressant's ☐
If on Warfarin / Clopidogrel see protocol for elective surgery

Allergies (see A+E front sheet)
Drug:
Other: NKDA Latex: yes / no

Our Vision
To provide every patient with the care we want for those we love the most

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[redacted]
MR HL
bel

Clinical Examination

Temp	°C	BP	130/60	Pulse	70/ min	RR	/min
O_2 sat	% (FiO_2	%)					
EWS	GCS /15	A V P U		Pain 0 1 2 3 (circle)		AMT	/10
BMI =		Height =		Weight =			

S1 + S2 +0

Dressing clean

IV RA →

AMT
1. age
2. dob
3. year
4. time
5. place
6. monarch
7. WW1
8 20 - 1
9. two people recognition
10. recall address

Pain score
0 - no pain. 1 – mild. 2 - moderate. 3 - severe

GCS
Eye opening 1. none 2. to pain 3. to speech 4. spontaneously
Verbal 1. none 2.incomprehensible sounds 3. inappropriate words 4. confused 5 orientated
Motor 1. none 2. extension to pain 3.flexion 4. withdrawal 5. localises pain 6. obeys commands

AVPU: A= Alert Responds; V = Verbal Responds to voice; P = Pain Responds to pain; U = Unconscious No response to any stimulus — Circle best response

[redacted] abel

MR HL

Investigations Ordered & Results

Investigations ordered (tick)

FBC	☐	U+E	☐	LFT	☐	Troponin	☐	Coag	☐
D-dimer	☐	Calcium	☐	CXR	☐	ECHO	☐	Gp and Save	☐
Glucose	☐	Amylase	☐	Paracetamol	☐	Salicylate	☐	X-match	☐
Blood Culture	☐	ECG	☐	Vitalograph	☐		☐		☐

Results:

Differential Diagnosis & Interim Management Plan by Junior Doctor

Inf Post STEMI

→ PPCI

Name A. Well **Signature** **Grade** ST3 **Date** 15/7/24 **Time**

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Norfolk and Norwich University Hospitals NHS
NHS Foundation Trust

Mr HL Label

Consultant Review

19:30 - 20:10 PPCI RCA

Cx ② mild ... 64

Occluded distal RCA

BMW V3 → clot

2.5 15 balloon

2.75 24 Promus → 3.0 NC.

Good result.

Right mid Cx

Ⓝ LMS

Right mid LAD

TR band CCU - Meds

? home 18.4.12.

MI rehab Re-angio for PCI Cx/LAD 4-6/52

Consider if patient not for CPR

D. Wright Consultant Cardiology

Date: **Time:** **Signature:**

Criteria led discharge **or** **Expected Date of Discharge:**

1.
2.
3.
4.

Consultant Name: **Sign:** **Grade:** **Date:** **Time:**

Single Record - Clinical Assessment

Version 2
Date of Approval: June 2011

MR HL

CLINICAL NOTES

Date and Time	
16.4. 05:30	Nursing: Pt monitored in Sinus Brady rate occasionally dropping under 40bpm whilst pt asleep. Obs stable. Right wrist intact. RN.
16/4 08:40	SpR PPCI to RCA. for staged PCI to LAD/Cx. BP 120/80. HR 60/min. JVP → S_1+S_2+0. (CH).
CK 608 Na 139 Ur 6.6 Cr 71 Hb 12.3 WCC 11.7 Plt 212	CXR (AP). Borderline heart. upper lobe diversion Discharge 2x runs of 4-5 beat NSVT.
	(P) Continue monitoring tonight Home on 18/4 for staged PCI to Cx/LAD.
16/4/12 NOCTE	(N) - monitored via Telemetry, continues to be in Sinus Rythm no VT observed. SN

[redacted]

CLINICAL NOTES

Date and Time	
11/4/2012	SOAW
1430	① PPCI for RCA
	② Stage PCI for 6/52 LMD in 4-6/52
	No chest pain
	SOB
Reg Nan	
Stage of 7	
wire mes.	Plan
	① Off to Telemetry
	② Home tomorrow
	DIOT

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B

Observations Frequency:

O_2 Code:
N = Nasal cannulae
SM = Simple Mask
RM = Reservoir Mask
} Inspired O_2: Record flow rate in Litres (L)

V = Venturi
H = Humidified
A = Air
} Record %

Target Oxygen Saturations;

WARD: **OBSERVATION CHART**

Name: MR HL
Registration No: 123456
NHS Number: 9876543 2
Date of Birth: (55 YR OLD)

DATE	15/4	15/4	16/4	16/4	16/4	16/4	17/4														**DATE**
TIME																					**TIME**
BP AND PULSE 240																					40 °C TEMPERATURE
230																					39.5
220																					39
210																					38.5
200																					38
190																					37.5
180																					37
170																					36.5
160																					36
150																					35.5
140																					35
130																					34.5
120																					
110																					
100																					
90																					
80																					
70																					
60																					
50																					
40																					
RESPS																					
SATS %	98																				**SATS %**
O_2 Code																					O_2 Code
Inspired O_2	AIR																				Inspired O_2
Weight	88																				**Weight**
Urine pH:																					Urine pH:
Glucose	N																				Glucose
Ketones																					Ketones
Sp. Gravity	A																				Sp. Gravity
Blood																					Blood
Protein																					Protein
Nitrite	J																				Nitrite
Leucocytes																					Leucocytes
Bowels				BO			BO														Bowels
Type stool																					Type stool
ENTER EARLY WARNING SCORE BELOW & IF EWS TRIGGER 4 OR MORE DOCUMENT ACTIONS OVER PAGE																					
TEMP																					TEMP
Systolic BP																					Systolic BP
PULSE																					PULSE
RESPS																					RESPS
AVPU																					AVPU
URINE																					URINE
TOTAL																					**TOTAL**
Sign initials																					Sign initials

V5 revised Jan 2014 NNR775

1. For each of the drugs that is prescribed for Mr HL, complete the following tables to detail the indication and the therapeutic and toxic monitoring parameters:

Drug: Aspirin	**Indication:** 2º prevention of MI
Monitoring parameters	
Therapeutic	**Toxic**
↓CV events	Signs of bleeding, Hb, S/E:GI

Drug: Clopidogrel	**Indication:** 2º prevention of MI
Monitoring parameters	
Therapeutic	**Toxic**
↓CV events	Signs of bleeding, Hb, S/E:GI

Drug: Bisoprolol	**Indication:** 2º prevention of MI
Monitoring parameters	
Therapeutic	**Toxic**
↓CV events	BP, pulse, awareness of hypoglycaemia

Drug: Metformin	**Indication:** Type 2 DM
Monitoring parameters	
Therapeutic	**Toxic**
BG, HbA1c	RF, S/E e.g. GI

Drug: Ramipril	**Indication:** 2º prevention of MI (+ prevention of diabetic nephropathy)
Monitoring parameters	
Therapeutic	**Toxic**
↓CV events, (BP-target<140/90), (RF)	BP, RF, K+, dry cough

Drug: GTN	**Indication:** Ischaemic chest pain
Monitoring parameters	
Therapeutic	**Toxic**
Chest pain, usage	Bp, pulse, flushing/dizziness

Drug: Diamorphine	**Indication:** Severe chest pain on admission
Monitoring parameters	
Therapeutic	**Toxic**
Control of pain	RR, S/E: N&V

Drug: Metoclopramide	**Indication:** N&V from diamorphine
Monitoring parameters	
Therapeutic	**Toxic**
Control of N&V	RF, S/Es e.g. EPSE

2. Identify any actual and potential pharmaceutical care issues for your patient. Document the issue(s) and the action(s) in the following tables.
   Where you recommend the patient to start on any **NEW** medication, please also complete details of the monitoring parameters for the new drug, otherwise leave it blank.

   (the workshop template contains a standard number of boxes – this does **NOT** give any indication to the number of issues to be identified – could be more, could be less!!)

Issue	**Action required**
Bisoprolol not been given	Check pulse on TPR chart (pulse dropped to 40 bpm) – potentially reduce dose to 1.25mg od. (Long term aim to titrate up to evidence based dose of 10mg od with rate control down towards 60bpm)
Monitoring parameters	
Therapeutic	**Toxic**

Issue	**Action required**
Metformin frequency states od, but administration times bd	Confirm as part of drug history with patient and ask Dr to amend Rx
Monitoring parameters	
Therapeutic	**Toxic**

Issue	**Action required**
Metformin being omitted	Ensure restarted once renal function checked to be OK post PPCI (usually 48hrs)*
Monitoring parameters	
Therapeutic	**Toxic**

* Metformin C/I in recent myocardial infarction (due to risk of lactic acidosis increased by hypoxia) but can be used once patient stable.
Use of iodine-containing X-ray contrast media (as used in angio) is contraindicated in a patient on Metformin due to risk of renal impairment. Need to stop metformin 48hrs before angio (obviously not possible with PPCI) and only restart when confirmed renal function is normal (48hrs) (see SPC for metformin accessed at www.medicines.org.uk/emc)

Issue	Action required
Optimisation of Type 2 DM management	Consider addition of SGLT2I e.g. dapagliflozin 10mg od) to optimised metformin prescription as per NICE guidelines for Type 2 DM)
Monitoring parameters	
Therapeutic	**Toxic**

Issue	Action required
Ramipril frequency not prescribed clearly	Confirm with Dr and ask to clarify prescription (usually od at night) (betablockers in morning and ACEIs to help prevent hypotension)
Monitoring parameters	
Therapeutic	**Toxic**

Issue	Action required
Need to up-titrate dose of ramipril - EBM trial dose of ramipril is 10mg daily	Need to ask Dr to titrate dose up after checking patient's Bp and RF
Monitoring parameters	
Therapeutic	**Toxic**

Issue	Action required
Need for atorvastatin (one of five drugs recommended by NICE for secondary prevention of MI)	Request Dr to prescribe atorvastatin 80mg on
Monitoring parameters	
Therapeutic	**Toxic**
↓CV events, Lipid profile	LFTs, myopathy/muscle pain, creatine kinase (CK)

Issue	Action required
Need for gastric protection (now on DAPT and PMH GORD) – previously on prn lansoprazole	Ask Dr to prescribe regular lansoprazole 15mg od
Monitoring parameters	
Therapeutic	**Toxic**
G.I. symptom control, lack of GI bleed	S/E: e.g. diarrhoea, low sodium

Issue	Action required
Lack of pain control for OA – previously on meloxicam which is associated with increased risk of thrombotic events	Request Dr to prescribe alternative e.g. paracetamol/co-codamol or naproxen/ibuprofen (max 1.2g daily) if needs to continue NSAID
Monitoring parameters	
Therapeutic	**Toxic**
Pain control	Paracetamol/co-codamol: LFTS, S/E: e.g. constipation NSAIDs: g.i., bleed, RF, bp

Issue	Action required
Lifestyle counselling	Counsel on diet (low Na^+, low fat, 5/day), exercise (30mins/day/min 5days/wk), alcohol, (smoking cessation – not relevant for this patient) **
Monitoring parameters	
Therapeutic	**Toxic**

** Most cardiac units off a follow-up rehabilitation service for MI patients after they have been discharged (potential pharmacist involvement)

Issue	Action required
Counselling and education on drugs	All new drugs – counsel on indication, dose, frequency & side-effects (give examples of DETAILS FOR INDIVIDUAL DRUGS e.g DAPT for 12 months + risk of bleeding, atorvastatin and muscle pain etc)
Monitoring parameters	
Therapeutic	**Toxic**