Year 2 - Practical Notes

Hospital and Clinical Pharmacy

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Systematic Drug Information Queries - Two Cases

Experiment 1 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To assess and answer two fictional drug-information questions systematically.

Principle

A useful answer clarifies the requester, patient context and decision, then checks suitable original evidence, indexing tools and established medicine information.

Two Fictional Queries

Case	Question	Answer approach
1	How long can this exact reconstituted antibiotic suspension be used and how should it be stored?	Identify brand, strength and reconstitution date; use its current manufacturer leaflet. Do not assign one universal storage period.
2	Does this patient's medicine need adjustment when renal function changes?	Identify the drug, indication, current dose, renal estimate and relevant patient factors; the clinician selects any adjustment using the current product/clinical method.

Key Points

- Primary information includes original studies or official product documents.
- Secondary search tools help locate relevant evidence.
- Tertiary resources summarise established information; currency and context still need checking.
- An answer states what is known, what is missing and the practical authorised action.

Activity Procedure

1. Clarify

Identify the exact medicine/product, question, recipient, urgency and patient factors.

2. Search

Choose product information and appropriate current clinical evidence for the question.

3. Appraise

Check study/context relevance, publication date and agreement between sources.

4. Answer

Draft a concise response with the applicable conditions and missing information.

5. Document

Keep the search record and supervising pharmacist's review in the activity worksheet.

Record and Observations

Case	Question / evidence / answer
1	_____
2	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. Why clarify the product?

Different products or strengths can have different instructions.

2. Why record the search date?

Information and product instructions can change.

3. What makes an answer useful?

It directly addresses the decision with supported conditions and an action.

Interpretation of Laboratory Reports - Two Cases

Experiment 2 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify therapy-related concerns in two fictional laboratory reports.

Principle

Interpretation combines units, laboratory intervals, trend, specimen quality, symptoms and medicines; a flagged value is not a complete diagnosis.

Two Fictional Reports

Case	Supplied data	Review focus
1	Older adult on an ACE inhibitor: potassium 6.1 mmol/L, creatinine above prior baseline; symptoms and specimen comment need review.	Prompt clinical communication of the high-potassium report, assess specimen validity and medicines without delaying urgent review.
2	Warfarin user: supplied INR 5.1 above the person's documented target; bruising reported.	Prompt anticoagulation-team review, check bleeding, interacting medicines and recent doses; the team determines adjustment and follow-up.

Key Points

- Check person, date, units and the report's own intervals.
- Compare with previous values and review medicines that may affect the finding.
- Critical findings require prompt communication rather than waiting to finish documentation.

Activity Procedure

1. Validate

Check report identity, collection time, units and specimen comments.

2. Compare

Identify abnormal or changing values using the supplied intervals.

3. Link therapy

List relevant medicines and information needed for review.

4. Escalate

Communicate urgent concerns and document the authorised plan.

Record and Observations

Case	Finding / relevance	Action / authorised plan
1	_____	_____
2	_____	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. Why compare trends?

A change can be clinically important even when one value is near an interval.

2. Why review specimen quality?

Haemolysis and other issues may alter results.

3. Who changes the regimen?

The authorised care team using the full clinical context.

IPC Adverse Drug Reaction Report and Causality Assessment

Experiment 3 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To complete a mock suspected-ADR record and compare two causality approaches for two cases.

Principle

Reporting a suspected ADR does not require proven causation. A structured record captures the event, exposure, timing, medicines, relevant history, outcome and reporter details.

Two Fictional ADR Cases

Case	Supplied evidence	Teaching assessment
1	Documented urticaria after amoxicillin; known reaction (+1), onset after exposure (+2), improvement after clinician-directed withdrawal (+1), observed rash (+1). Alternative causes remain unknown.	Illustrative Naranjo total 5: probable. WHO-UMC may remain possible while plausible alternatives are unresolved. No rechallenge.
2	Dry cough after starting enalapril; known reaction (+1), appropriate onset (+2), resolves after clinician-directed change (+1), alternatives assessed as unlikely (+2). Other evidence unknown.	Illustrative Naranjo total 6: probable. WHO-UMC probable/likely may fit the supplied evidence; state the assumptions.

Naranjo Scoring Guide

Use the current authorised worksheet. The concise guide below paraphrases the evidence items; unknown responses score zero.

Evidence item	Yes	No
Previously established reaction	+1	0
Event follows exposure	+2	-1
Improvement on withdrawal / antagonist	+1	0
Recurrence on re-exposure	+2	-1
Alternative explanation present	-1	+2
Response with placebo	-1	+1
Toxic concentration documented	+1	0
Dose-response pattern	+1	0
Similar prior reaction	+1	0
Objective confirmation	+1	0

Totals: 9 or above definite; 5-8 probable; 1-4 possible; 0 or below doubtful. A score is not proof and may be limited by the clinical context.

WHO-UMC Categories

- Certain, probable/likely, possible and unlikely describe assessed causal likelihood.
- Conditional/unclassified and unassessable/unclassifiable describe information or assessment limitations.
- Use the full category criteria; the same case can receive different labels under different systems.

Key Points

- Use the current IPC/PvPI healthcare-professional form for the exercise.
- Distinguish seriousness, severity and causal likelihood.
- WHO-UMC uses clinical evidence categories; Naranjo uses a scored questionnaire.
- Missing information is marked unknown rather than invented; intentional rechallenge is not undertaken.

Activity Procedure

1. Review cases

Extract event, drug, dates, dose details supplied and concomitant medicines.

2. Draft form

Complete a mock form with fictional identifiers, reaction/outcome and reporter fields.

3. Assess WHO-UMC

Judge timing, alternative causes and dechallenge using the current category definitions.

4. Score Naranjo

Score the evidence supplied for each item; sum and state the category with limitations.

5. Review

Have the supervising teacher assess the report; this exercise does not submit a real ADR report.

Record and Observations

Form section	Student record
Fictional patient / event dates	_____
Suspected medicine / exposure	_____
Reaction / seriousness / outcome	_____
Other medicines / alternatives	_____
WHO-UMC category / reason	_____
Naranjo score / category	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. What is dechallenge?

The event course after stopping or reducing the suspected medicine under clinical direction.

2. Does probable mean proven?

No; it is a supported likelihood category.

3. Is rechallenge needed for a report?

No; it may be unsafe and is not performed for this exercise.

Orthopaedic and Surgical Aids

Experiment 4 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify common support and mobility aids and demonstrate their safe handling.

Principle

An aid is selected for the clinical purpose, fit and the person's functional needs; incorrect fit can cause pressure or falls.

Handling Guide

Aid	Demonstration focus
Knee support	Appropriate size, alignment, skin and circulation checks
LS / abdominal belt	Correct position and prescribed tightness; breathing and comfort
Walker	Stable frame, secure handgrips, height and prescribed gait sequence
Walking stick	Intact tip and suitable height; use the prescribed side and sequence

Key Points

- Identify knee supports, lumbosacral belts, abdominal belts, walkers and walking sticks.
- Use the prescribed fit and mobility plan, not a universal size or technique.
- Check skin, comfort, stability and the device condition.

Activity Procedure

1. Identify

Match each dummy aid with its intended support or mobility purpose.

2. Inspect

Check size, fasteners, tips, frame and manufacturer instructions.

3. Fit on trainer

Demonstrate the clinician-authorised positioning and adjustment.

4. Teach back

Explain checks, maintenance and concerning pain, numbness or skin changes.

Record and Observations

Aid	Fit / handling record
Knee cap	_____
Lumbosacral / abdominal belt	_____
Walker	_____
Walking stick	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. Why check rubber tips?

Worn tips can reduce grip and stability.

2. Why inspect skin under supports?

Pressure and friction can cause injury.

3. Who defines the mobility technique?

The qualified rehabilitation team for that person's needs.

Identification and Application of Bandages

Experiment 5 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify dressing materials and apply a simple training bandage.

Principle

A dressing contacts or protects a wound; a bandage holds material or supports a region. Sterility, absorbency, elasticity and pressure requirements differ.

Key Points

- Compare sterile gauze, cotton padding, roller and crepe bandages.
- Do not place loose cotton fibres directly into a wound bed.
- Avoid tight circumferential pressure unless a qualified protocol specifically requires it.

Activity Procedure

1. Identify

Read packaging, sterility, size and intended use.

2. Prepare

Use a mannequin limb and an instructor-assigned dummy dressing.

3. Apply

Secure with the demonstrated even-overlap technique without excessive tension.

4. Check

Assess trainer circulation/comfort checkpoints and explain real-life warning signs.

5. Remove

Demonstrate clean removal, waste handling and record the result.

Record and Observations

Material / sterile status	_____
Application purpose	_____
Overlap / fixation	_____
Pressure / comfort checks	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. Is every bandage sterile?

No; check its intended role and packaging.

2. Why avoid excess tension?

It can impair circulation or cause pressure injury.

3. What symptoms need review?

Increasing pain, numbness, colour change, swelling or other deterioration.

Medical and Surgical Devices - Identification and Handling

Experiment 6 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify common devices and demonstrate external handling on models.

Principle

Device purpose, sterility, connection compatibility and product instructions govern handling; invasive placement requires appropriately trained personnel.

Device Guide

Device	Key demonstration
Needle / syringe	Gauge, volume scale, sterile package and immediate sharps disposal
Urinary catheter / bag	Closed-system connections, no kinks, secure tubing and below-bladder positioning
IV set	Correct line identity, compatible connection, clamps and prescribed flow checks
Ryle's / feeding tube	External markings and securement; placement is professionally verified before use
Urine pot	Correct label, clean handling and intended collection purpose
Colostomy bag	Model seal, skin protection and product-specific change process
Oxygen mask	Correct type, fit and the prescribed oxygen setup

Key Points

- Identify needles, syringes, urinary catheters, IV sets, urine bags, feeding tubes, urine pots, colostomy bags and oxygen masks.
- Check packaging, expiry and sterile status before use.
- Use models for connectors and external handling; no invasive placement on people.

Activity Procedure

1. Identify

State the device name, purpose and route/system.

2. Inspect

Check integrity, markings, sizes and compatible connections.

3. Demonstrate

On the model, show external connections, secure positioning and the product-specific handling checks.

4. Explain

Describe monitoring, cleaning or disposal and when a qualified professional is required.

Record and Observations

Device	Purpose / handling / risk
Needle / syringe / IV set	_____
Catheter / urine bag / pot	_____
Ryle's tube / feeding system	_____
Colostomy bag	_____
Oxygen mask	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. Why check connectors?

An incompatible or wrong-system connection can cause harm.

2. Why keep a urine drainage bag below bladder level?

The prescribed gravity-drainage arrangement helps reduce backflow risk.

3. Can oxygen be used without a plan?

The appropriate device and flow are selected by the clinical team.

Hospital Drug Interaction Cases

Experiment 7 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify and document two clinically relevant fictional medicine interactions.

Principle

An interaction review considers mechanism, severity, patient risk, evidence and the authorised management plan.

Two Fictional Cases

Pair	Risk and review action
Warfarin with Ibuprofen	A fictional person taking warfarin asks to add ibuprofen. Combined anticoagulant and NSAID effects can increase bleeding risk. Do not add the requested medicine without qualified review; assess bleeding symptoms and seek urgent care when indicated.
Simvastatin with Clarithromycin	A fictional simvastatin user presents a new clarithromycin prescription. Clarithromycin can increase simvastatin exposure and muscle-toxicity risk. Flag the interaction to the prescriber/pharmacist for an authorised alternative or temporary-management plan; do not independently alter therapy.

Key Points

- Check the full medicine list, including nonprescription and herbal products.
- Separate pharmacodynamic overlap from altered drug exposure.
- Document who was contacted and the confirmed action.

Activity Procedure

1. Collect

Record the medicines, indication, duration and relevant patient factors.

2. Assess

Identify the interaction and potential harm in each case.

3. Clarify

Prepare an evidence-based question for the supervising pharmacist or prescriber.

4. Record

Document the authorised outcome and monitoring advice.

Record and Observations

Case	Mechanism / risk	Action / outcome
1	_____	_____
2	_____	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. What is a pharmacodynamic interaction?

A change in effects through overlapping or opposing actions.

2. What is a pharmacokinetic interaction?

A change in absorption, distribution, metabolism or elimination.

3. Should a student stop medicines independently?

No; seek the authorised management decision.

Wound Dressing - Two Simulated Cases

Experiment 8 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To demonstrate a clean dressing workflow and identify a wound requiring clinical review.

Principle

Wound assessment includes cause, size, contamination, surrounding skin, pain, bleeding and infection concerns. Dressing choice follows the clinical plan.

Two Fictional Cases

Case	Scenario	Demonstration / decision
1	Small superficial abrasion, bleeding controlled, no concerning symptoms.	Model cleaning and the teacher-selected protective dressing; document review advice.
2	Recent surgical wound with increasing redness/pain and fever.	Identify prompt medical review; demonstrate only the instructed model dressing while preserving the assessment record.

Key Points

- Use a wound model and a prescribed dressing for the activity.
- Perform hand hygiene and protect the clean/aseptic work field.
- Do not debride or treat an infected wound independently.

Activity Procedure

1. Assess

Read the fictional case and identify bleeding, infection or other referral concerns.

2. Prepare

Check the dressing plan, materials, privacy and PPE.

3. Demonstrate

On a model, follow the approved cleaning and non-touch dressing technique.

4. Secure

Apply the instructed fixation without excessive pressure.

5. Record

Document findings, dressing used, review plan and warning signs.

Record and Observations

Case	Assessment / dressing / review
1 - clean superficial abrasion	_____
2 - postoperative wound with redness, pain and fever	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. Why assess before dressing?

The findings determine urgency and the suitable plan.

2. Why use non-touch technique?

It helps avoid contaminating key clean/sterile surfaces.

3. What is the action in the febrile postoperative case?

Prompt clinical review for possible infection rather than routine redressing alone.

Vaccination Workflow on a Mannequin

Experiment 9 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To complete the named injection or vaccination activity using training equipment.

Principle

A vaccination visit checks eligibility, vaccine/product, consent, storage, administration and follow-up.

Key Points

- Review the fictional vaccination history and current programme advice.
- Confirm product, route, expiry, required cold-chain record and authorised preparation.
- Have the clinic's adverse-event and emergency-response process ready.

Activity Procedure

1. Verify

Use fictional identifiers, history and the programme checklist.

2. Prepare

Inspect a dummy vaccine vial and confirm the manufacturer-specific preparation.

3. Simulate

Demonstrate the selected route on the mannequin under the instructor's checklist.

4. Observe and document

Explain the programme's post-vaccination observation, record and next-visit advice.

Record and Observations

Order / product / route	_____
Equipment / site check	_____
Aseptic technique / simulation	_____
Disposal / documentation	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Precautions

- Qualified supervision and dedicated training equipment are required.
- Do not use classroom demonstration material for patient administration.

Viva Questions and Answers

1. Why use a mannequin?

The syllabus activity assesses technique without administration to people.

2. Why follow product-specific directions?

Routes, preparation, equipment and aftercare can differ.

3. What must be recorded?

Verified order/product, route/site, checks, observed technique and any correction.

Intramuscular Injection Technique on a Mannequin

Experiment 10 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To complete the named injection or vaccination activity using training equipment.

Principle

IM administration places an approved product into a muscle; site and equipment depend on product, age and individual factors.

Key Points

- Use a dummy syringe and dedicated injection pad.
- The trained instructor confirms site, needle choice and product directions.
- IM entry is normally perpendicular (90 degrees) in the selected training method.

Activity Procedure

1. Check

Confirm fictional order, medicine, dose, route, allergy and equipment.

2. Landmark

Identify the instructor-approved anatomical site on the model.

3. Simulate

Show the approved skin preparation and IM sequence on the pad, following product-specific instructions.

4. Finish

Demonstrate immediate sharps disposal and record site, product and activity.

Record and Observations

Order / product / route	_____
Equipment / site check	_____
Aseptic technique / simulation	_____
Disposal / documentation	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Precautions

- Qualified supervision and dedicated training equipment are required.
- Do not use classroom demonstration material for patient administration.

Viva Questions and Answers

1. Why use a mannequin?

The syllabus activity assesses technique without administration to people.

2. Why follow product-specific directions?

Routes, preparation, equipment and aftercare can differ.

3. What must be recorded?

Verified order/product, route/site, checks, observed technique and any correction.

Subcutaneous Injection Technique on a Mannequin

Experiment 11 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To complete the named injection or vaccination activity using training equipment.

Principle

SC administration places an approved product in subcutaneous tissue; technique varies with product and device.

Key Points

- Confirm the specific syringe or pen and manufacturer instructions.
- Skin-fold use and angle depend on product, needle and body habitus.
- Site rotation follows the prescribed plan.

Activity Procedure

1. Verify

Check the fictional order and product-specific trainer.

2. Choose site

Identify an authorised SC site and inspect the model.

3. Simulate

Follow the instructor and device directions for skin fold, angle and administration.

4. Finish

Demonstrate disposal, rotation record and product-specific aftercare.

Record and Observations

Order / product / route	_____
Equipment / site check	_____
Aseptic technique / simulation	_____
Disposal / documentation	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Precautions

- Qualified supervision and dedicated training equipment are required.
- Do not use classroom demonstration material for patient administration.

Viva Questions and Answers

1. Why use a mannequin?

The syllabus activity assesses technique without administration to people.

2. Why follow product-specific directions?

Routes, preparation, equipment and aftercare can differ.

3. What must be recorded?

Verified order/product, route/site, checks, observed technique and any correction.

Intravenous Injection and Line Checks on a Mannequin

Experiment 12 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To complete the named injection or vaccination activity using training equipment.

Principle

IV administration requires a verified order, compatible product, patent access and the prescribed rate and monitoring.

Key Points

- Use only a dummy IV trainer; no cannulation or administration on classmates.
- Check medicine dilution/compatibility and line identity against the authorised order.
- Patent access and absence of site complications are verified by trained staff.

Activity Procedure

1. Verify

Check fictional person, order, drug, concentration, route, rate and allergies.

2. Review line

On the trainer, identify the access and correct compatible connection.

3. Simulate

Use the approved aseptic connection and administration demonstration; no universal rate is assumed.

4. Monitor

Discuss the required observation for reaction, infiltration/extravasation and line/site concerns.

5. Record

Enter the simulation checks and handover.

Record and Observations

Order / product / route	_____
Equipment / site check	_____
Aseptic technique / simulation	_____
Disposal / documentation	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Precautions

- Qualified supervision and dedicated training equipment are required.
- Do not use classroom demonstration material for patient administration.

Viva Questions and Answers

1. Why use a mannequin?

The syllabus activity assesses technique without administration to people.

2. Why follow product-specific directions?

Routes, preparation, equipment and aftercare can differ.

3. What must be recorded?

Verified order/product, route/site, checks, observed technique and any correction.

Safe Injection Preparation and Sharps Handling

Experiment 13 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To complete the named injection or vaccination activity using training equipment.

Principle

Medication checks, aseptic preparation and sharps management reduce preventable administration errors.

Key Points

- Use dummy vials/ampoules and training needles where permitted.
- Check prescription, medicine, strength, expiry, appearance and any required independent check.
- Do not recap a used needle; place it directly into the approved sharps container.

Activity Procedure

1. Prepare station

Arrange a clean work area, hand hygiene and correct training materials.

2. Read and calculate

Verify the given dose/strength and calculate the required volume with an independent check.

3. Demonstrate

Use the instructor's dummy-vial or ampoule preparation method without contaminating key parts.

4. Dispose

Demonstrate immediate sharps disposal and other waste separation.

5. Record

Document preparation checks and explain exposure-response procedures.

Record and Observations

Order / product / route	_____
Equipment / site check	_____
Aseptic technique / simulation	_____
Disposal / documentation	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Precautions

- Qualified supervision and dedicated training equipment are required.
- Do not use classroom demonstration material for patient administration.

Viva Questions and Answers

1. Why use a mannequin?

The syllabus activity assesses technique without administration to people.

2. Why follow product-specific directions?

Routes, preparation, equipment and aftercare can differ.

3. What must be recorded?

Verified order/product, route/site, checks, observed technique and any correction.

Hospital Pharmacy Software and Digital Health Tools

Experiment 14 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To demonstrate a fictional hospital medicine workflow and reconciliation record.

Principle

Hospital software connects orders, clinical checks, dispensing, stock, administration and patient records; staff remain responsible for verification.

Key Points

- Use a training account and dummy information only.
- Review allergies, medicines, clinical parameters and alerts before a virtual issue.
- Trace batch, expiry and controlled access to stock records.
- Digital handover and reconciliation need clear, secure documentation.

Practice Scenario

Fictional stock exercise: opening 200 units, receipts 80, issues 45 gives 235 units before documented adjustments.

Activity Procedure

1. Enter order

Use fictional identifiers and an instructor-approved medicine order.

2. Review

Check order completeness, relevant results, allergies and interaction alerts.

3. Issue virtually

Select the correct product, batch/expiry and label; record the virtual transaction.

4. Reconcile

Compare pre-admission, current and discharge lists in the supplied case.

5. Handover

Document authorised changes and follow-up in the training record.

Record and Observations

Order / clinical check	_____
Alert / authorised outcome	_____
Product / batch / expiry	_____
Reconciliation discrepancy	_____
Handover / follow-up	_____

Result

Complete the record using your activity, then state the findings, the action required and the reason for that action.

Viva Questions and Answers

1. What is medicine reconciliation?

A structured comparison of medicine lists to identify and resolve discrepancies.

2. Why log changes?

It supports traceability and safe handover.

3. Does software remove the need to check?

No; data and alerts still require qualified review.

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