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Aminoglycoside safety Response monitoring

Pharmacology-related Cases | Response monitoring

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Fictional educational example. Individualize using verified patient findings, authorized treatment and current local protocols. No real patient record or observed outcome is claimed.

Patient profile and history

51-year-old woman receiving a prescribed aminoglycoside. Care stage: During review after prescribed initial care.

Medical history: An aminoglycoside is prescribed for a selected serious infection. New hearing symptoms are reported during treatment and require prompt review. No known drug allergy is reported in this fictional interview; this does not replace medicine-by-medicine verification in real care.

Surgical history: No previous major operation is reported in this fictional interview. Confirm procedure details, complications and any relevant devices when applying the exercise.

Personal and family assessment: The patient wants to regain the usual level of independence. Review available support, daily activities, treatment access and preferred language rather than assuming these are the same for every person.

Scenario: The team requests a clear account of changes after the prescribed care, rather than a statement that the patient is simply better.

Clinical assessment

Subjective: Asks about monitoring and reports a new hearing concern.

Objective findings and required checks: Renal and hearing-related assessment is needed; treatment timing and exposure are reviewed.

Physical examination and investigations: Review renal function, fluid status, drug levels when required and other nephrotoxic medicines.

Supply actual values, units, timing and trends during supervised application. Do not invent missing clinical data.

Clinical focus and pathophysiology

Aminoglycoside safety: Aminoglycosides can treat selected serious infections but may injure kidneys or auditory/vestibular function.

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Medical / surgical management

Report hearing, balance or renal changes promptly and coordinate dose/interval review with the prescribing team.

Illustrative drug and treatment study

Medicine / treatment	Purpose	Nursing checks
Prescribed aminoglycoside	Treat a susceptible infection	Verify weight/renal-based order, timing, levels and ototoxicity/nephrotoxicity monitoring
medicine review	Avoid unnecessary interacting toxicity risks	Seek pharmacist/prescriber advice.

Treatment examples are not a prescription. Verify the authorized product, dose, route, timing, contraindications and current local product information.

Nursing process - ADPIE

Assessment

Asks about monitoring and reports a new hearing concern. Renal and hearing-related assessment is needed; treatment timing and exposure are reviewed. The team requests a clear account of changes after the prescribed care, rather than a statement that the patient is simply better.

Nursing diagnosis

Prioritize possible treatment-related harm requiring prompt assessment; urinary elimination affected by illness or obstruction; vulnerability to infection or worsening infection; learning needs about the condition and care plan. Validate each concern against assessment. For an actual problem, link the problem, contributing factors and observed cues; for a risk problem, document the risk factors without invented symptoms.

Planning

At the next scheduled reassessment, with its interval chosen for acuity: document a patient-specific baseline and measurable target. Agree short- and longer-term outcomes with the patient/caregiver; physiological safety takes priority over teaching and discharge tasks.

Implementation

Report hearing, balance or renal changes promptly and coordinate dose/interval review with the prescribing team. Compare the current assessment with the documented baseline and identify benefit, harm or lack of response. Document care, prescribed treatment, consent and escalation.

Evaluation

Compare reassessment with each stated outcome. Mark met, partly met or not met

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using observed evidence, document the review time and revise the plan. This vignette provides no completed patient outcome.

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Nursing care plan

Nursing diagnoses use original clinical problem wording. They are not the licensed NANDA-I classification. Verify any formal label or code against your institution's licensed current edition; select actual or risk diagnoses only when supported by assessment.

Context task: Compare the current assessment with the documented baseline and identify benefit, harm or lack of response.

Set individualized measurable targets and an exact review time. Select actual or risk statements only when supported by assessment.

Assessment: subjective / objective	Nursing diagnosis: original problem wording	Short- and longer-term goals	Nursing interventions with rationale	Evaluation
Ask: Ask about medicine names, timing, symptoms and non-prescribed products. Assess: Review observations, medication record and relevant drug-specific investigations.	Possible treatment-related harm requiring prompt assessment. Possible factors: adverse medication effects or an administration problem. Validate against the patient's assessment.	Short-term: At the next scheduled reassessment, with its interval chosen for acuity: The suspected adverse event is escalated and no further avoidable exposure occurs. Longer-term: Before the clinically approved transition or agreed follow-up: Explains the revised medication plan and warning symptoms before discharge.	1. Assess airway, breathing, circulation and the time course of symptoms. Rationale: Serious adverse reactions require immediate stabilization. 2. Escalate suspected toxicity and follow the authorized hold, monitoring or antidote instructions. Rationale: Treatment decisions depend on the drug and clinical severity. 3. Document and communicate the reaction and reconcile the medicine list. Rationale: Accurate records reduce repeat exposure and support pharmacovigilance. 4. Report hearing, balance or renal changes promptly and coordinate dose/interval review with the prescribing team. Rationale: Aminoglycosides can treat selected serious infections but may injure kidneys or auditory/vestibular function. The condition-specific plan addresses the underlying problem while response is monitored.	Record the baseline and reassessed finding, the time and whether this goal is met, partly met or not met. If not met, reassess causes and revise or escalate. Do not record an unobserved improvement.

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Assessment: subjective / objective	Nursing diagnosis: original problem wording	Short- and longer-term goals	Nursing interventions with rationale	Evaluation
Ask: Ask about dysuria, urgency, retention and usual urinary pattern. Assess: Assess output, discomfort, bladder findings and relevant urine tests.	Urinary elimination affected by illness or obstruction. Possible factors: altered bladder function, irritation or drainage difficulty. Validate against the patient's assessment.	Short-term: At the next scheduled reassessment, with its interval chosen for acuity: Urine drainage and comfort improve within the agreed review interval. Longer-term: Before the clinically approved transition or agreed follow-up: Explains hygiene, catheter instructions if applicable and follow-up needs.	1. Measure urine trends and assess pain, retention or blocked drainage promptly. Rationale: Obstruction and low output may require urgent intervention. 2. Support privacy and indicated hygiene while avoiding unnecessary catheterization. Rationale: Comfort and infection prevention support recovery. 3. Collect ordered samples correctly and implement prescribed treatment. Rationale: Reliable assessment guides targeted management.	Record the baseline and reassessed finding, the time and whether this goal is met, partly met or not met. If not met, reassess causes and revise or escalate. Do not record an unobserved improvement.
Ask: Ask about exposure, wound symptoms and recent invasive devices. Assess: Inspect relevant sites and monitor systemic findings and investigation trends.	Vulnerability to infection or worsening infection. Possible factors: disrupted barriers, exposure or reduced host defence. Validate against the patient's assessment.	Short-term: At the next scheduled reassessment, with its interval chosen for acuity: Aseptic care is maintained and any new signs of infection are escalated promptly. Longer-term: Before the clinically approved transition or agreed follow-up: Demonstrates relevant hygiene and explains the infection-prevention plan.	1. Use hand hygiene and risk-based standard or transmission precautions. Rationale: Interrupting transmission protects the patient, staff and other patients. 2. Review invasive device need with the team and maintain indicated aseptic care. Rationale: Unnecessary devices and barrier breaks increase infection exposure. 3. Monitor for systemic deterioration and administer prescribed antimicrobials on schedule. Rationale: Early escalation and timely indicated treatment reduce avoidable harm.	Record the baseline and reassessed finding, the time and whether this goal is met, partly met or not met. If not met, reassess causes and revise or escalate. Do not record an unobserved improvement.

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Assessment: subjective / objective	Nursing diagnosis: original problem wording	Short- and longer-term goals	Nursing interventions with rationale	Evaluation
Ask: Ask what the learner already knows and wants to understand. Assess: Use teach-back or demonstration to identify specific gaps.	Learning needs about the condition and care plan. Possible factors: new information, complex treatment or limited prior teaching. Validate against the patient's assessment.	Short-term: At the next scheduled reassessment, with its interval chosen for acuity: Explains the most important immediate action in their own words. Longer-term: Before the clinically approved transition or agreed follow-up: Demonstrates the agreed care skills and names follow-up and warning signs.	1. Assess language, literacy, hearing, vision and preferred learning method. Rationale: Accessible teaching improves understanding. 2. Teach a few condition-specific points using plain language and demonstration. Rationale: Focused information is easier to retain and apply. 3. Use teach-back, correct misunderstandings and provide an accessible written plan. Rationale: Checking understanding supports safer self-management. 4. Teach symptom reporting, correct follow-up testing and avoiding unapproved nephrotoxic medicines. Rationale: Condition-specific teaching connects the treatment plan to safe continuing care.	Record the baseline and reassessed finding, the time and whether this goal is met, partly met or not met. If not met, reassess causes and revise or escalate. Do not record an unobserved improvement.

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Health education and continuing care

Teach symptom reporting, correct follow-up testing and avoiding unapproved nephrotoxic medicines.

Transition only after clinical readiness is confirmed. Reconcile medicines, check access and caregiver support, and document who will review the patient and when.

Urgent warning signs

New hearing loss, vertigo, markedly reduced urine or severe allergic reaction needs prompt clinical review.

Evaluation and conclusion

For each goal, document met, partly met or not met using observed evidence and the review time. Reassess and revise if progress is inadequate. Individual assessment, prioritized care and coordinated review guide this topic.

Quick Revision

- Aminoglycosides can treat selected serious infections but may injure kidneys or auditory/vestibular function.

- Priority concerns: Possible treatment-related harm requiring prompt assessment; Urinary elimination affected by illness or obstruction; Vulnerability to infection or worsening infection; Learning needs about the condition and care plan.

- New hearing loss, vertigo, markedly reduced urine or severe allergic reaction needs prompt clinical review.

- Teach symptom reporting, correct follow-up testing and avoiding unapproved nephrotoxic medicines.

Exam / viva: Which observations demonstrate response, and which findings would require revising or stopping the current intervention?

References

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