[HOSPITAL / HEALTH AUTHORITY NAME]

POISONING, OVERDOSE, INTOXICATION, AND WITHDRAWAL PATHWAY

Protocol 29: Rapid Stabilization, Toxidrome Recognition, Decontamination, Antidote and Elimination Therapy, Withdrawal Management, Monitoring, and Safe Disposition

DRAFT FOR EMERGENCY MEDICINE, INTERNAL MEDICINE, CRITICAL CARE, PAEDIATRICS, PSYCHIATRY, ADDICTION MEDICINE, CLINICAL TOXICOLOGY, ANAESTHESIA, NEPHROLOGY, CARDIOLOGY, PHARMACY, LABORATORY, NURSING, EMS, SECURITY, TRANSFER, PUBLIC HEALTH, AND CLINICAL-GOVERNANCE REVIEW

STATUS: This is a draft clinical-governance document. Exact antidote doses and preparations, naloxone products, activated-charcoal practice, toxicology laboratory access, poison-centre consultation, extracorporeal-treatment criteria, decontamination facilities, pesticide and chemical-exposure procedures, paediatric and pregnancy dosing, alcohol and sedative-withdrawal regimens, opioid-use-disorder treatment, mental-health assessment, observation periods, antidote stocking, and transfer logistics must be reconciled with current national guidance, local formulary, pharmacy monographs, specialist availability, legal requirements, and approved linked protocols before implementation.

IMMEDIATE SAFETY RULE: Protect staff and bystanders first. Stabilize airway, breathing, circulation, glucose, temperature, seizures, and dangerous dysrhythmias before pursuing a precise toxin label. Give time-critical antidotes when the clinical pattern is compelling, and contact a poison centre or medical toxicologist early. Unknown, intentional, delayed, sustained-release, and mixed exposures must be treated as potentially serious until risk has been actively resolved.

Document control	Details
Document owner	Emergency Department / Medical Services Directorate / Nursing Services / Clinical Governance
Clinical leads	Emergency Medicine; Internal Medicine; Critical Care; Clinical Toxicology / Poison Information Service
Supporting departments	Paediatrics; Psychiatry; Addiction Medicine; Anaesthesia; Nephrology; Cardiology; Pharmacy; Laboratory; EMS; Security; Public Health; Transfer Coordination
Applies to	Adults, adolescents, children, and pregnant or postpartum patients with suspected poisoning, overdose, intoxication, chemical exposure, medication error, adverse drug toxicity, or acute substance withdrawal
Linked protocols	Resuscitation; Altered Mental Status; Seizures; Arrhythmias; Acute Kidney Injury / Electrolytes; Diabetic Emergencies; Severe Hypertension; Respiratory Failure; Mental-Health Crisis; Safeguarding; Major Trauma; Burns / Chemical Exposure; Transfer
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1. Purpose

To provide a standardized emergency-department pathway for the rapid recognition, stabilization, investigation, and treatment of poisoning, overdose, intoxication, medication error, hazardous chemical exposure, and acute withdrawal. The protocol prioritizes supportive care, early toxicology advice, selective decontamination, timely antidotes, prevention of secondary harm, appropriate enhanced elimination, compassionate addiction care, mental-health and safeguarding assessment, and safe disposition.

2. Scope

This protocol applies when a toxic exposure is known, suspected, or cannot be excluded, including deliberate self-poisoning, accidental ingestion, occupational or environmental exposure, substance intoxication, medication accumulation, dosing error, withdrawal from alcohol, opioids, benzodiazepines or other sedative-hypnotics, and toxicity from conventional, herbal, agricultural, illicit, or household products. It supports initial ED management but does not replace product-specific toxicology advice, disaster or hazardous-material procedures, envenomation protocols, chronic substance-use treatment pathways, or specialist critical-care and extracorporeal-treatment guidance.

3. Core policy statements

- Use an ABCDE approach and treat immediately reversible threats. Point-of-care glucose, oxygenation and ventilation assessment, ECG, temperature, and neurological status are minimum early observations in significant poisoning.
- Protect staff from secondary contamination. Remove the patient from the source, use appropriate PPE, isolate contaminated clothing and belongings, and perform external decontamination before entry into clean clinical areas when indicated.

- Contact a poison centre or medical toxicologist early for severe, unusual, uncertain, paediatric, pregnancy-related, sustained-release, delayed, mixed, occupational, pesticide, or antidote-requiring exposures.
- Do not rely on a normal initial examination after a potentially serious exposure. Delayed absorption, active metabolites, sustained-release preparations, bezoars, organ failure, and co-ingestants can produce late deterioration.
- Do not induce vomiting. Gastric lavage is not routine. Activated charcoal is used selectively when a potentially toxic adsorbable substance was ingested and the airway is protected.
- A urine drug screen does not prove intoxication, exclude an important toxin, identify severity, or establish timing. Treat the patient and toxicological syndrome rather than the screen.
- Obtain an acetaminophen level in intentional, unknown, or potentially mixed ingestions unless a reliable history clearly excludes exposure. Obtain salicylate testing when clinically plausible, including unexplained acid-base disturbance, tinnitus, fever, tachypnoea, or altered mental status.
- Use serial ECGs and laboratory tests when toxicity evolves over time. A single normal result may be insufficient after cardiotoxic, sustained-release, toxic alcohol, salicylate, acetaminophen, lithium, valproate, iron, or sulfonylurea exposure.
- Use naloxone to restore adequate ventilation, not necessarily full wakefulness. Continue airway support and observe for recurrent respiratory depression, particularly with long-acting or high-potency opioids.
- Treat toxin-induced seizures promptly with benzodiazepines. Phenytoin is ineffective or potentially harmful in several poisonings; obtain toxicology advice before second-line therapy.
- Treat hyperthermia as a time-critical organ-threatening emergency. Use rapid external cooling, sedation, paralysis and intubation when necessary; antipyretics do not correct toxin-induced hyperthermia.
- Treat cardiotoxic poisoning with poison-specific resuscitation rather than standard ACLS alone. Sodium bicarbonate, high-dose insulin, calcium, digoxin immune Fab, lipid emulsion, hydroxocobalamin, atropine, or extracorporeal support may be required.
- Avoid flumazenil in undifferentiated overdose, chronic benzodiazepine use, seizure disorder, or pro-convulsant co-ingestion. It has a limited role after selected iatrogenic sedation with a secure history.
- Withdrawal can be fatal. Alcohol and sedative-hypnotic withdrawal require early severity assessment, benzodiazepine-based or approved alternative treatment, thiamine, electrolyte correction, and monitoring.
- Every intentional poisoning requires psychosocial assessment, capacity and suicide-risk review, safeguarding screening, and a safe follow-up plan after medical stabilization. Care must remain non-stigmatizing and trauma-informed.
- Discharge only after the anticipated toxicity window has passed, symptoms and physiology are stable, required serial tests are complete, mental-health and safeguarding needs are addressed, and reliable follow-up and return precautions are documented.

4. Definitions and operational terms

Term	Operational definition
Poisoning	Clinical harm caused by exposure to a substance through ingestion, inhalation, injection, dermal, ocular, mucosal, or other route.
Overdose	Exposure to a dose greater than therapeutic or intended, whether deliberate, accidental, cumulative, or due to interaction or organ failure.
Intoxication	Reversible alteration in cognition, behaviour, coordination, physiology, or consciousness due to a psychoactive or toxic substance.
Toxidrome	A recognizable cluster of findings suggesting a toxin class. Mixed exposures and atypical presentations are common.
Antidote	A treatment that prevents absorption, binds or neutralizes a toxin, reverses receptor effects, restores a blocked pathway, or enhances detoxification.
Decontamination	Removal of a substance from skin, eyes, clothing, gastrointestinal tract, or environment to reduce ongoing exposure.
Enhanced elimination	A method that increases toxin removal, including urinary alkalinization, multiple-dose activated charcoal, haemodialysis, haemoperfusion, or other extracorporeal treatment.
Delayed toxicity	Clinically important effects appearing after an initially normal period because of formulation, metabolism, redistribution, organ injury, or co-ingestion.
Withdrawal	Symptoms and physiological instability following reduction or cessation of a substance after neuroadaptation.
Severe poisoning	Any exposure causing coma, respiratory failure, seizure, shock, dangerous dysrhythmia, severe acid-base disturbance, hyperthermia, organ injury, need for antidote infusion, or anticipated deterioration.
Medical clearance	A documented conclusion that emergency medical causes and immediate toxicological risks have been assessed and treated sufficiently for the planned next level of care. It is not a single laboratory test.
Poison-centre case number	The reference number and recommendations supplied by the consulted poison information service; record updates and closure advice.

5. Roles and accountability

Role	Minimum responsibility
Triage / first-contact clinician	Recognize possible toxicity, respiratory depression, contamination, self-harm, severe withdrawal, hyperthermia, seizure, shock, and high-risk agents; initiate immediate escalation.
Lead ED clinician	Direct stabilization, toxidrome assessment, investigations, antidotes, decontamination, serial reassessment, specialist consultation, disposition, and documentation.
Resuscitation / critical-care team	Manage airway, ventilation, shock, refractory seizure, severe dysrhythmia, hyperthermia, mechanical support, and ICU-level monitoring.
Nursing team	PPE and decontamination support; continuous monitoring; antidote and infusion administration; neurological, respiratory, glucose, temperature, and withdrawal observations; belongings and evidence handling.
Pharmacy	Verify products and doses; prepare antidotes and infusions; advise compatibility, maximum concentrations, stock, replacement, and medication interactions.
Laboratory	Prioritize critical tests, communicate turnaround and analytical limitations, retain appropriate samples, and directly notify critical results.
Poison centre / medical toxicologist	Provide agent-specific risk assessment, treatment targets, observation duration, enhanced-elimination advice, and case follow-up.
Psychiatry / addiction / safeguarding	Assess self-harm risk, capacity, substance-use disorder, withdrawal treatment, child or vulnerable-adult safety, and continuity of care.
Transfer coordinator / EMS	Arrange receiving acceptance and transport with the monitoring, antidotes, airway capability, and trained escort required during transfer.

6. Pathway activation and triage

Category	Operational criteria
RED / immediate resuscitation	Apnoea or severe hypoventilation; coma; seizure; severe agitation with hyperthermia; shock; dangerous dysrhythmia; QRS widening; severe bradycardia; cyanosis or suspected cyanide / CO; cholinergic crisis; severe acidosis; significant corrosive exposure; active contamination; severe withdrawal delirium.
ORANGE / very urgent	Potentially lethal dose; sustained-release or delayed agent; intentional unknown ingestion; acetaminophen or salicylate risk; recurrent vomiting; moderate withdrawal; abnormal ECG; evolving metabolic disturbance; paediatric exposure; pregnancy; significant pesticide, toxic alcohol, lithium, iron, digoxin, sulfonylurea, beta-blocker, calcium-channel blocker, or TCA exposure.
YELLOW / urgent	Clinically stable but symptomatic intoxication, medication error, low-risk exposure requiring verification, mild withdrawal, or need for serial observation and mental-health assessment.
GREEN / lower acuity only after screening	Clearly non-toxic exposure with reliable product identification, asymptomatic patient, no safeguarding or self-harm concern, and poison-centre or approved low-risk pathway support.

7. First 10 minutes: parallel action

1. Use appropriate PPE and determine whether external contamination, hazardous vapour, powder, liquid, needle, or pesticide exposure threatens staff or other patients. Move to the designated decontamination area when required.
2. Begin ABCDE assessment. Support ventilation with bag-mask ventilation and oxygen as needed; prepare for airway control if protective reflexes or ventilation are inadequate.
3. Check point-of-care glucose immediately. Attach cardiac monitor, pulse oximetry, temperature monitoring, and capnography when consciousness or ventilation is impaired. Obtain a 12-lead ECG early.
4. Establish IV access; use IO access if necessary. Send targeted blood tests and retain samples when the agent is uncertain or delayed analysis may be required.
5. Give naloxone when opioid-associated hypoventilation is possible, while continuing ventilation. Treat seizures with benzodiazepines and begin active cooling for severe hyperthermia.
6. Identify time-critical antidote or resuscitation needs: sodium bicarbonate, calcium and high-dose insulin, digoxin immune Fab, atropine and oxime, N-acetylcysteine, hydroxocobalamin, methylene blue, fomepizole, pyridoxine, octreotide, lipid emulsion, or another agent-specific treatment.
7. Obtain the substance, formulation, amount, route, time, intent, co-ingestants, patient weight, comorbidities, regular medicines, and prehospital treatment. Bring packaging, photographs, workplace safety data, or medication records when safe.

8. Contact poison-centre / toxicology support and senior ED / critical care early for severe, uncertain, or high-risk exposure. Document the advice, case number, required repeat tests, and observation endpoint.
9. Protect against aspiration, falls, violence, self-harm, and absconding. Use the least restrictive safe environment and continuous observation when indicated.
10. Begin a contemporaneous timeline of vital signs, ECG changes, symptoms, antidotes, infusions, laboratory results, poison-centre advice, and response to treatment.

DO NOT MISS: The patient with an unknown ingestion may have opioid respiratory depression, hypoglycaemia, acetaminophen exposure, salicylate toxicity, sodium-channel blockade, toxic alcohol poisoning, occult trauma, sepsis, stroke, or pregnancy. A presumed recreational intoxication diagnosis must not stop a structured medical assessment.

8. Immediate stabilization: ABCDE

8.1 Airway and breathing

- Open and protect the airway; suction secretions and vomit. Use capnography when ventilation is impaired or an opioid / sedative exposure is suspected.
- Pre-oxygenate and intubate for persistent hypoventilation despite antidote and support, refractory hypoxaemia, loss of protective reflexes, severe agitation requiring paralysis, or anticipated rapid deterioration.
- Plan the airway around the toxin. Severe salicylate poisoning, metabolic acidosis, and cyanide or toxic alcohol poisoning require preservation of high minute ventilation; peri-intubation hypoventilation can be fatal.
- Avoid succinylcholine when prolonged paralysis is possible from organophosphate poisoning or pseudocholinesterase inhibition. Use senior anaesthetic / critical-care support.
- Bronchorrhoea and wheeze suggest cholinergic poisoning; pulmonary oedema may occur with opioids, salicylates, hydrocarbons, inhaled toxins, or cardiotoxic drugs.

8.2 Circulation

- Assess perfusion, rhythm, QRS, QTc, blood pressure, capillary refill, temperature, and bedside ultrasound. Correct hypoxia, acidosis, electrolyte disturbance, and hypothermia / hyperthermia.
- Use isotonic crystalloid judiciously. Persistent toxin-induced shock may require norepinephrine or epinephrine plus poison-specific therapy such as high-dose insulin, calcium, glucagon, bicarbonate, lipid emulsion, digoxin Fab, hydroxocobalamin, or extracorporeal support.
- Treat wide-complex dysrhythmia from sodium-channel blockade with sodium bicarbonate. Avoid class IA and IC antiarrhythmics; obtain toxicology advice for refractory cases.
- Treat torsades with magnesium, correction of potassium and other causes, and defibrillation / overdrive pacing as indicated. Avoid QT-prolonging medicines.
- In cardiac arrest, continue high-quality resuscitation and use toxin-specific treatments. Prolonged resuscitation and extracorporeal life support may be appropriate for selected reversible poisonings.

8.3 Disability, temperature, and exposure

- Record GCS / AVPU, pupils, tone, clonus, reflexes, agitation, delirium, seizure activity, and serial mental status. Check for trauma and intracranial causes.
- Treat toxin-induced seizures first with benzodiazepines. For refractory seizures, use phenobarbital or propofol according to local critical-care practice; seek toxicology advice before phenytoin.
- Measure core temperature in severe agitation, rigidity, clonus, anticholinergic or sympathomimetic toxicity, serotonin syndrome, neuroleptic malignant syndrome, or environmental exposure.
- For severe hyperthermia, remove clothing, spray and fan, apply ice packs or immersion where feasible, sedate aggressively, and use paralysis / ventilation if muscle activity continues. Do not use antipyretics as primary treatment.
- Expose fully for patches, injection sites, body packing, transdermal products, chemical burns, pressure injury, rhabdomyolysis, and concealed trauma while maintaining dignity and temperature.

9. Contamination control and external decontamination

Exposure	Required action
Dry chemical / powder	Do not bring contaminated clothing or powder into clean areas. Remove clothing, double-bag and label it, brush dry powder off before irrigation, and use PPE appropriate to the product.
Liquid chemical / pesticide	Remove clothing and jewellery; irrigate skin with copious tepid water and mild soap when appropriate. Protect drains and staff according to hazardous-material policy.
Ocular exposure	Begin immediate irrigation with water or saline; remove contact lenses; continue until symptoms improve and ocular pH is neutral when relevant. Arrange ophthalmic assessment for corrosives or persistent injury.
Inhalation	Move to fresh air without exposing rescuers. Give oxygen and assess for bronchospasm, pulmonary oedema, CO, cyanide, methemoglobinaemia, and delayed inhalational injury.
Needle / injection / envenomation	Treat sharps as evidence and biohazard; assess local tissue, compartment, vascular, systemic, and infectious risks; follow the dedicated injury or envenomation pathway.

Exposure	Required action
Contaminated vomit / secretions	Use gloves, gown and eye protection as indicated. Cholinergic pesticides and some chemicals may contaminate staff through secretions.

10. Focused exposure history and risk assessment

Domain	Key questions / findings
Substance	Exact name, active ingredients, strength, formulation, immediate- or modified-release, product label, colour / imprint, pesticide or workplace name, safety-data sheet.
Dose	Maximum possible amount; number of missing tablets; concentration and volume; mg/kg where possible; chronic accumulation or repeated supratherapeutic dosing.
Time and route	Earliest and latest possible exposure; ingestion, inhalation, dermal, ocular, injection, transdermal, rectal / vaginal, body packing or stuffing.
Intent and reliability	Accidental, therapeutic error, recreational, occupational, malicious, self-harm, or unknown; witness reliability; access to additional substances.
Co-exposures	Alcohol, acetaminophen, salicylate, opioids, sedatives, antidepressants, stimulants, herbal products, and household or agricultural agents.
Patient factors	Age, weight, pregnancy, CKD, liver disease, cardiac disease, seizure disorder, G6PD deficiency, substance tolerance, chronic medicines, and allergies.
Symptoms and trajectory	Vomiting, tinnitus, visual symptoms, sweating or dryness, secretions, bowel sounds, agitation, somnolence, weakness, dyspnoea, chest pain, palpitations, seizures, urine output, and temperature.
Prehospital course	Time found, environment, empty containers, naloxone or other antidotes, airway support, decontamination, charcoal, fluids, restraints, and response.

11. Toxidrome recognition

Toxidrome	Typical findings	Important examples / cautions
Opioid	Reduced consciousness, slow or absent breathing, small pupils, bradycardia, hypotension, hypothermia	Pupils may be normal; fentanyl analogues may require repeated naloxone; consider co-ingestants and pulmonary oedema.
Sedative-hypnotic	Somnolence, ataxia, dysarthria, hypoventilation, generally normal vital signs unless mixed	Alcohol, benzodiazepines, barbiturates, gabapentinoids; severe instability suggests co-ingestion or another diagnosis.
Sympathomimetic	Agitation, mydriasis, diaphoresis, tachycardia, hypertension, hyperthermia, chest pain, seizures	Cocaine, amphetamines, synthetic stimulants; treat agitation and hyperthermia early with benzodiazepines.
Anticholinergic	Agitated delirium, mydriasis, dry flushed skin, urinary retention, reduced bowel sounds, tachycardia, hyperthermia	Antihistamines, antipsychotics, tricyclics, plants; ECG sodium-channel or QT effects may coexist.
Cholinergic	Salivation, lacrimation, urination, diarrhoea, vomiting, bronchorrhoea, wheeze, bradycardia, miosis, fasciculations, weakness	Organophosphates and carbamates; protect staff; atropine treats muscarinic effects, oxime may be needed.
Serotonergic	Agitation, diaphoresis, diarrhoea, hyperreflexia, inducible or spontaneous clonus, hyperthermia	Serotonergic medicines and interactions; stop agents, sedate, cool; severe cases need paralysis / ICU.
Neuroleptic malignant	Altered mental status, generalized rigidity, hyperthermia, autonomic instability, elevated CK	Dopamine antagonists or withdrawal of dopamine agonists; provide intensive supportive care and specialist advice.
Sodium-channel blockade	Tachycardia, hypotension, seizures, widened QRS, terminal R in aVR	TCA, diphenhydramine, cocaine, carbamazepine, class I antiarrhythmics; sodium bicarbonate is first-line.

12. Investigations and interpretation

Investigation	Indication / interpretation
Point-of-care glucose	Immediate in all altered, seizing, weak, or intoxicated patients; repeat after treatment and with sulfonylurea / insulin exposure.

Investigation	Indication / interpretation
12-lead ECG and rhythm strip	Early in significant or unknown poisoning; repeat for QRS, QTc, conduction, rhythm, ischaemia, potassium, calcium, and treatment response.
VBG / ABG, lactate	Assess ventilation, pH, bicarbonate, lactate, and severe metabolic toxicity. ABG may be needed for oxygenation or co-oximetry.
Electrolytes, urea, creatinine, glucose, calcium, magnesium	Identify metabolic effects, organ failure, and treatment complications; calculate anion gap and corrected values where appropriate.
Acetaminophen level	Intentional or unknown ingestion, mixed overdose, unreliable history, repeated supratherapeutic use, or unexplained liver injury. Time level correctly and repeat when delayed absorption is possible.
Salicylate level	Known / possible salicylate exposure, tinnitus, tachypnoea, fever, altered state, unexplained respiratory alkalosis or anion-gap acidosis. Use serial levels and clinical status.
Liver tests, INR, CBC	Acetaminophen, mushroom, valproate, iron, severe systemic toxicity, bleeding, haemolysis, or organ injury.
Serum osmolality / osmolar gap	Suspected toxic alcohol; a normal gap does not exclude late exposure. Interpret with ethanol and clinical acid-base status.
CK, urinalysis	Agitation, hyperthermia, seizure, prolonged immobilization, muscle pain, stimulant toxicity, or rhabdomyolysis risk.
Specific levels	Lithium, digoxin, valproate, carbamazepine, theophylline, iron, ethanol, methanol, ethylene glycol, or other agents when results change management.
Pregnancy test	Patients of reproductive potential when it affects investigation, antidote, psychiatric care, or disposition. Do not withhold life-saving treatment.
Toxicology screen	Use only for a defined question. Immunoassays have false positives / negatives and limited detection; confirmatory testing rarely guides immediate stabilization.
Imaging	CT head for trauma, focal deficit, persistent unexplained coma, or seizure; chest imaging for aspiration / inhalation; abdominal imaging for packets, iron, lead, or radiopaque material when indicated.

13. Gastrointestinal decontamination

Method	When to consider	Do not use / cautions
Single-dose activated charcoal	Potentially toxic, adsorbable ingestion, usually within 1 hour but later for delayed gastric emptying, modified-release, or massive ingestion after toxicology discussion. Typical dose 1 g/kg, adult maximum commonly 50 g.	Unprotected airway, bowel obstruction / ileus, significant aspiration risk, caustics, hydrocarbons, alcohols, metals, lithium, or substances poorly adsorbed by charcoal.
Multiple-dose activated charcoal	Selected life-threatening carbamazepine, dapsone, phenobarbital, quinine, or theophylline poisoning after toxicology consultation.	Ileus, unprotected airway, gastrointestinal bleeding, or inability to monitor fluid / electrolyte effects.
Whole-bowel irrigation	Potentially serious modified-release or enteric-coated ingestion, iron / lithium, body packers, or packets visible on imaging, with toxicology / surgical input.	Bowel obstruction, perforation, ileus, haemodynamic instability, uncontrolled vomiting, or unprotected airway.
Gastric lavage	Exceptionally, after a very recent potentially lethal ingestion when benefits outweigh risks and expert support is available.	Not routine. Avoid with unprotected airway, corrosives, hydrocarbons, bleeding risk, or delayed presentation.
Induced emesis	Never recommended.	Risk of aspiration, delay, and no reliable benefit.

14. Antidotes and enhanced elimination

ANTIDOTE SAFETY: Use an approved local monograph and obtain toxicology / pharmacy support whenever possible. Do not delay a life-saving antidote because a confirmatory level is pending when the exposure and clinical syndrome are compelling. Record weight, dose, concentration, route, time, response, adverse effects, and next dose due.

Clinical problem / toxin	Reference emergency treatment	Key cautions / escalation
Opioid respiratory depression	Ventilation plus titrated naloxone; repeat doses or infusion for recurrent hypoventilation.	Target adequate breathing. Observe for recurrence and acute withdrawal.
Acetaminophen	N-acetylcysteine using approved IV or oral regimen.	Start promptly when indicated or results will be delayed. Continue until stopping criteria are met.
Sodium-channel blocker / TCA	Sodium bicarbonate 1-2 mmol/kg IV bolus, repeated to clinical / ECG response; infusion as required.	Monitor sodium, potassium, pH and volume; avoid over-alkalinization.

Beta-blocker / calcium-channel blocker	High-dose insulin euglycaemia therapy, dextrose, calcium, vasopressors; glucagon mainly for selected beta-blocker cases.	Frequent glucose and potassium monitoring; early ICU / toxicology; consider lipid or ECMO in refractory shock.
Digoxin / cardiac glycoside	Digoxin immune Fab for life-threatening dysrhythmia, hyperkalaemia, shock, or severe poisoning.	Dose by amount / level when possible; post-Fab digoxin levels are not clinically interpretable.
Organophosphate / carbamate	Atropine rapidly titrated to clear bronchial secretions and improve ventilation; pralidoxime for significant organophosphate toxicity.	Large atropine doses may be required. Staff decontamination and airway protection are priorities.
Toxic alcohol	Fomepizole or approved ethanol protocol; correct acidosis and give cofactors; early haemodialysis discussion.	Do not wait for a specific level if severe acidosis, visual symptoms, renal injury, or strong exposure history.
Cyanide	Hydroxocobalamin 5 g IV adult; repeat once if needed; paediatric 70 mg/kg up to 5 g.	May interfere with laboratory assays and dialysis equipment; treat smoke-inhalation co-toxicity.
Methemoglobinaemia	Methylene blue 1-2 mg/kg IV over 5 minutes; may repeat after specialist advice.	Use caution in G6PD deficiency and serotonergic drug exposure; consider exchange / hyperbaric options if refractory.
Isoniazid seizures	Pyridoxine gram-for-gram of known ingestion; if unknown, adult 5 g IV or paediatric 70 mg/kg up to 5 g.	Give benzodiazepines and correct acidosis; repeat may be needed.
Sulfonylurea hypoglycaemia	Dextrose plus octreotide; adult commonly 50-100 micrograms SC / IV every 6 hours; paediatric dosing by local monograph.	Prolonged observation and serial glucose; dextrose alone can provoke recurrent insulin release.
Local-anaesthetic systemic toxicity	20% lipid emulsion: 1.5 mL/kg bolus then 0.25 mL/kg/min, with repeat / increase per approved LAST protocol.	Use modified resuscitation; avoid excessive epinephrine and vasopressin; monitor total lipid dose.

Enhanced elimination	Typical indications / principle
Urinary alkalinization	Salicylate poisoning and selected agents. Use IV sodium bicarbonate, correct potassium, monitor pH and fluid balance, and target urine alkalinization according to toxicology guidance.
Multiple-dose charcoal	Selected enterohepatic / enteroenteric toxins when bowel function and airway are safe.
Intermittent haemodialysis	Preferred for severe salicylate, methanol, ethylene glycol, lithium, valproate, theophylline, metformin-associated lactic acidosis, and other dialysable toxins according to EXTRIP / toxicology criteria.
Continuous kidney replacement	May be used when intermittent dialysis is unavailable or haemodynamic instability prevents it, but toxin clearance may be slower.
ECMO / mechanical support	Consider early for selected refractory cardiotoxic poisoning when the toxin is reversible and expertise is available.

15. Opioid poisoning

- Provide immediate ventilation. Do not wait for naloxone to take effect before bag-mask support in apnoea or severe hypoventilation.
- Use small IV naloxone doses such as 0.04-0.1 mg when the patient is opioid-dependent and breathing is impaired but present; use 0.4-2 mg IV / IM / intranasal or the available emergency formulation when apnoea or near-apnoea requires rapid reversal. Repeat every 2-3 minutes to adequate ventilation.
- Failure to respond after an appropriate cumulative dose should trigger reassessment of airway technique, potency and route, co-ingestants, hypoxic brain injury, hypoglycaemia, stroke, seizure, or another diagnosis.
- For recurrent respiratory depression, repeat boluses and begin an infusion based on the effective wake-up dose; a common starting principle is approximately two-thirds of the effective cumulative dose per hour, titrated to ventilation.
- Observe longer after long-acting opioids, methadone, sustained-release products, fentanyl analogues, body packing, renal failure, recurrent naloxone requirement, pulmonary complications, or mixed sedative exposure.
- After recovery, provide overdose education, take-home naloxone where available, and direct linkage to opioid-use-disorder treatment.

16. Acetaminophen poisoning

- Determine whether exposure was a single acute ingestion, repeated supratherapeutic dosing, staggered ingestion, delayed presentation, or uncertain pattern. The Rumack-Matthew nomogram applies only to a single acute ingestion with a known time.
- Obtain an acetaminophen level at 4 hours or later after a single acute ingestion. If presentation is earlier, draw baseline tests but repeat at the correct time. Repeat a 4-12 hour level when delayed absorption is possible and the first concentration is detectable but below the treatment line.
- Start N-acetylcysteine immediately when the level is above the treatment line, the ingestion is more than 8 hours earlier and potentially toxic, the time is unknown with detectable acetaminophen, repeated supratherapeutic exposure is concerning, or liver injury is present and acetaminophen contribution is possible.
- Use the approved local IV or oral regimen. A traditional IV regimen is 150 mg/kg over 1 hour, 50 mg/kg over 4 hours, then 100 mg/kg over 16 hours; approved two-bag regimens may reduce adverse reactions. Avoid dosing interruption during transfer.

- Continue treatment beyond the initial course when acetaminophen remains detectable, aminotransferases are rising or markedly elevated, INR is abnormal because of liver injury, acidosis / lactate / renal injury is present, or the patient is clinically unwell. Seek transplant-centre advice early in acute liver failure.
- Treat anaphylactoid reactions according to severity; temporary slowing or brief interruption may be appropriate, but restart N-acetylcysteine as soon as safe.

17. Salicylate poisoning

SALICYLATE AIRWAY WARNING: The spontaneously hyperventilating patient may be maintaining life through respiratory alkalosis. Intubation that lowers minute ventilation or allows pH to fall can cause abrupt deterioration. Obtain senior airway and toxicology support, pre-alkalinize when feasible, and match the pre-intubation minute ventilation immediately after intubation.

- Suspect salicylate toxicity with tinnitus, hearing change, nausea, vomiting, sweating, tachypnoea, fever, confusion, pulmonary oedema, hypoglycaemia, mixed respiratory alkalosis and anion-gap acidosis, or unexplained deterioration in an older adult.
- Use serial levels, pH, electrolytes, glucose, renal function, and clinical status. A falling concentration does not guarantee improvement if tissue distribution, acidaemia, or organ failure is worsening.
- Give activated charcoal for appropriate recent or ongoing absorption when the airway and bowel are safe. Correct volume depletion, glucose deficiency, and potassium deficit.
- Use IV sodium bicarbonate to alkalinize serum and urine in significant toxicity. A commonly used infusion contains 150 mmol sodium bicarbonate in 1 L dextrose solution with potassium added as needed; target serum pH around 7.5-7.55 and urine pH 7.5-8 while monitoring sodium, potassium, glucose, fluid status, and pH.
- Discuss haemodialysis early for altered mental status, pulmonary oedema, renal failure, severe acidaemia, refractory electrolyte disturbance, inability to alkalinize, rising level despite therapy, or severe concentration thresholds according to toxicology / EXTRIP guidance.

18. Cardiotoxic and metabolic poisonings

Exposure / pattern	Immediate priorities
Tricyclic antidepressant / sodium-channel blocker	Benzodiazepines for seizure; sodium bicarbonate for QRS widening, hypotension, ventricular dysrhythmia, or terminal R in aVR; repeat to response and monitor pH / sodium. Consider hypertonic saline or lipid emulsion with toxicology advice.
Beta-blocker	Airway and ECG; fluids, vasopressors, glucagon where appropriate, high-dose insulin euglycaemia therapy, dextrose, and correction of potassium / magnesium. Consider lipid emulsion, pacing, ECMO, or dialysis for selected agents.
Calcium-channel blocker	Calcium, high-dose insulin euglycaemia therapy, dextrose, vasopressors, and early critical-care / toxicology support. Monitor glucose frequently and anticipate pulmonary oedema.
Digoxin / cardiac glycoside	Treat unstable dysrhythmia and hyperkalaemia with digoxin immune Fab. Avoid routine calcium controversy by prioritizing Fab; seek toxicology / cardiology advice. Correct magnesium / potassium carefully.
Sulfonylurea / insulin	Frequent glucose; dextrose for immediate hypoglycaemia. Add octreotide for sulfonylurea. Continue prolonged observation because recurrence is common.
Lithium	Stop exposure; isotonic fluid when appropriate; serial lithium, renal function, sodium, ECG and neurological examination. Early nephrology / toxicology and dialysis discussion for severe symptoms, renal failure, high or rising levels.
Valproate	Airway, glucose, ammonia, acid-base status, liver tests and serial level. Consider L-carnitine for hyperammonaemia, hepatotoxicity, significant CNS depression, or severe exposure; dialysis for severe poisoning per EXTRIP.
Theophylline	Repeated charcoal when safe, potassium and glucose monitoring, benzodiazepines for seizure, beta-blockade for severe tachycardia only with expert input, and early haemodialysis for severe toxicity.
Iron	Serum iron timed appropriately, acid-base status and abdominal radiography when relevant. Severe gastrointestinal, shock, acidosis, altered state, or high level requires IV deferoxamine and toxicology / critical-care support.
Metformin-associated lactic acidosis	Support circulation and ventilation, correct severe metabolic derangement, and arrange urgent haemodialysis for severe acidosis / lactate, shock, organ failure, or clinical deterioration.

19. Stimulant, anticholinergic, serotonergic, and hyperthermic syndromes

- For cocaine, amphetamine, synthetic stimulant, or severe anticholinergic agitation, use benzodiazepines as first-line treatment, reduce stimulation, monitor ECG and temperature, and actively cool. Treat chest pain and hypertension according to the linked cardiovascular pathway and toxicology advice.
- Avoid physical struggle and prolonged prone restraint. Severe agitation may require rapid sedation, airway control, and continuous physiological monitoring.

- Serotonin syndrome is suggested by exposure plus clonus, hyperreflexia, agitation, diaphoresis, diarrhoea, and hyperthermia. Stop serotonergic agents, give benzodiazepines, cool, and use cyproheptadine in selected moderate / severe cases when enteral administration is possible.
- Neuroleptic malignant syndrome is suggested by dopamine-antagonist exposure or dopamine-agonist withdrawal with generalized rigidity, fever, altered state, dysautonomia, and raised CK. Stop the trigger, provide aggressive supportive care, and seek critical-care / neurology advice regarding dantrolene or dopamine agonist therapy.
- Physostigmine may reverse severe pure anticholinergic delirium but should be used only with toxicology expertise, continuous ECG, and exclusion of QRS widening, TCA exposure, conduction disease, and pro-convulsant co-ingestion.

20. Cholinergic pesticide poisoning

- Protect staff and decontaminate the patient before routine entry when feasible. Remove clothing, wash skin and hair, and contain contaminated material.
- Prioritize suction, oxygenation and ventilation. Give atropine immediately for bronchorrhoea, wheeze, bradycardia, hypotension, or respiratory compromise. An adult may start at 1-2 mg IV, doubling every 3-5 minutes until secretions dry and ventilation / perfusion improve; severe cases may need much larger doses and infusion.
- Give pralidoxime early for significant organophosphate poisoning according to local monograph, particularly with weakness, fasciculations, respiratory failure, or substantial exposure. Carbamate poisoning may improve rapidly with atropine, but expert advice is required.
- Benzodiazepines treat seizures and marked agitation. Monitor for intermediate syndrome, delayed neuropathy, recurrent weakness, aspiration, and atropine complications.
- Do not use pupil size or heart rate alone as the atropine endpoint. The key endpoints are clearing bronchial secretions, improved air entry, oxygenation, perfusion, and reduced bronchospasm.

21. Toxic gases, toxic alcohols, and dyshemoglobinaemia

Condition	ED priorities
Carbon monoxide	Remove from source and give 100% oxygen. Measure carboxyhaemoglobin with co-oximetry, but do not use a low delayed level to dismiss exposure. Assess neurological status, ECG, troponin, lactate and pregnancy. Discuss hyperbaric oxygen for loss of consciousness, neurological deficit, severe acidosis, cardiac ischaemia, very high level, or pregnancy according to local access.
Cyanide / smoke inhalation	Suspect with enclosed-space fire, soot, altered state, shock, severe lactic acidosis, or cardiovascular collapse. Give hydroxocobalamin promptly when severe cyanide toxicity is plausible; treat concomitant CO and inhalational injury.
Methanol	Visual symptoms, abdominal symptoms, altered state and anion-gap acidosis may be delayed. Give fomepizole when exposure is credible or metabolic findings suggest toxicity; give folate / folinic acid and arrange urgent dialysis when severe.
Ethylene glycol	Consider in intoxication with anion-gap acidosis, osmolar gap, hypocalcaemia, calcium oxalate crystals, or AKI. Give fomepizole, thiamine and pyridoxine; arrange dialysis according to severity and EXTRIP criteria.
Methemoglobinaemia	Suspect cyanosis with normal PaO2, chocolate-coloured blood, and saturation gap after oxidant exposure. Give high-flow oxygen and methylene blue for symptomatic or significant levels, with specialist caution in G6PD deficiency.
Hydrocarbon	Avoid induced vomiting and routine charcoal. Observe for coughing, hypoxaemia, or aspiration pneumonitis; chest radiography is guided by symptoms and timing. Severe CNS or dysrhythmia requires supportive care.

22. Alcohol intoxication and withdrawal

22.1 Alcohol intoxication

- Do not attribute coma, trauma, hypoglycaemia, sepsis, stroke, head injury, co-ingestion, or sexual assault to alcohol without assessment. Check glucose and temperature, and perform serial neurological examinations.
- Use supportive care, aspiration prevention, fluids only for a defined indication, and thiamine for patients at risk of deficiency. Give glucose immediately when hypoglycaemic; thiamine should be given before or with glucose when feasible but must not delay correction.
- Assess capacity, safe supervision, mobility, oral intake, withdrawal risk, violence / vulnerability, driving risk, and safeguarding before discharge.

22.2 Alcohol withdrawal

- Ask time of last drink, usual amount, previous withdrawal seizure or delirium, concurrent sedatives, medical illness, pregnancy, and previous treatment. Use an approved severity tool only in a patient able to communicate; do not allow a score to override clinical instability.

- Benzodiazepines are first-line. Use symptom-triggered treatment for suitable monitored patients or a fixed / front-loaded regimen for severe risk, unreliable scoring, seizure, delirium, or critical illness. Phenobarbital may be used by experienced teams under an approved pathway.
- Give parenteral thiamine before carbohydrate when feasible in high-risk patients, plus magnesium, potassium, phosphate, glucose and fluid correction according to findings. Treat Wernicke encephalopathy with therapeutic rather than prophylactic thiamine dosing.
- Withdrawal seizure requires benzodiazepine treatment and admission / close observation. Delirium tremens requires ICU-level care, large titrated sedative doses, temperature and cardiorespiratory monitoring, and treatment of precipitating illness.
- Arrange alcohol-use-disorder treatment, relapse prevention, psychosocial support, and safe follow-up rather than treating withdrawal as an isolated episode.

23. Opioid and sedative-hypnotic withdrawal

23.1 Opioid withdrawal

- Opioid withdrawal is intensely distressing but is usually not directly life-threatening; dehydration, pregnancy, severe comorbidity, infection, suicidality, and return to use create major risk.
- Use an objective withdrawal assessment such as COWS and determine last opioid, potency, route, methadone or buprenorphine use, fentanyl exposure, and previous precipitated withdrawal.
- Offer buprenorphine initiation when opioid-use disorder is present, the patient is in clear objective withdrawal, and local law, formulary, training, and follow-up permit. A common standard induction begins with 4-8 mg sublingual and repeats according to symptoms, but the approved local pathway must address fentanyl and long-acting opioids.
- Provide symptomatic treatment, hydration, antiemetic, antidiarrhoeal, non-opioid analgesia, and clonidine where appropriate. Avoid replacing one unstructured opioid prescription with another.
- Provide take-home naloxone, overdose prevention, infectious-disease screening as appropriate, and a confirmed treatment linkage.

23.2 Benzodiazepine and other sedative-hypnotic withdrawal

- Suspect after abrupt cessation of regular benzodiazepine, barbiturate, gamma-hydroxybutyrate, or related sedative use. Anxiety, tremor, insomnia, perceptual disturbance, autonomic activation, delirium, and seizures may occur.
- Treat significant benzodiazepine withdrawal with a controlled benzodiazepine replacement and taper under specialist guidance. Severe withdrawal, seizure, delirium, pregnancy, polydrug use, or unreliable follow-up requires admission.
- Barbiturate or GHB withdrawal may be severe and difficult to manage; obtain critical-care / addiction / toxicology input. Do not use flumazenil.

24. Special populations

Population	Required modifications
Children	Use weight-based dosing, child-protection assessment, and a lower threshold for poison-centre consultation. A single tablet or small volume may be lethal. Confirm caregiver reliability and safe storage before discharge.
Pregnancy / postpartum	Stabilize the mother first. Do not withhold indicated antidotes or imaging solely because of pregnancy. Involve obstetrics; assess fetal monitoring according to gestation and severity. CO has particular fetal risk and may lower the threshold for hyperbaric consultation.
Older adult / frailty	Consider therapeutic accumulation, medication duplication, renal or hepatic impairment, digoxin, lithium, anticoagulants, falls, cognitive impairment, neglect, and dosing error. Use cautious fluids and prolonged observation when reserve is limited.
Chronic kidney / liver disease	Expect altered clearance, prolonged toxicity, and lower thresholds for serial testing, antidote extension, or dialysis. Review all regular medicines and recent dose changes.
Body packer / stuffer	Do not perform digital rectal removal. Use imaging and whole-bowel irrigation when appropriate; surgical consultation is urgent for obstruction, perforation, packet rupture, or severe toxicity.
Occupational / environmental exposure	Obtain product and safety data; notify workplace / public health authorities when required; identify co-exposed persons and prevent return to an unsafe environment.
Person in custody	Clinical care and consent standards are unchanged. Maintain confidentiality, document restraints and observations, and avoid discharge to a setting unable to provide required monitoring.

25. Monitoring and reassessment

Parameter	Minimum expectation
Airway / ventilation	Continuous pulse oximetry; capnography for hypoventilation, deep sedation, intubation, or naloxone infusion; repeat respiratory rate and airway-protection assessment.

Parameter	Minimum expectation
Cardiovascular	Continuous ECG for cardiotoxic exposure, abnormal ECG, significant electrolyte disturbance, severe withdrawal, or antidote infusion; repeat 12-lead ECG to defined endpoints.
Neurological	Serial GCS, pupils, agitation / sedation, clonus / rigidity, seizure recurrence, and delirium assessment.
Temperature	Continuous or frequent core temperature in hyperthermia, severe agitation, serotonin / NMS, cholinergic or sympathomimetic toxicity.
Glucose	Repeat after hypoglycaemia and regularly with insulin, sulfonylurea, high-dose insulin therapy, liver injury, children, or altered consciousness.
Laboratory trends	Repeat pH, lactate, electrolytes, toxin levels, renal / liver tests, INR, CK, and osmolality at toxin-specific intervals.
Treatment response	Document the clinical target and response after each naloxone dose, bicarbonate bolus, atropine escalation, calcium, high-dose insulin change, antidote, charcoal, cooling intervention, or dialysis step.
Behavioural safety	Observation level, suicide precautions, restraint review, capacity, elopement risk, and family / safeguarding communication.

26. Disposition

Disposition	Minimum criteria
Resuscitation / ICU	Airway or ventilatory support; shock; recurrent seizure; severe hyperthermia; dangerous ECG change; antidote infusion requiring intensive monitoring; severe acidosis; organ failure; severe withdrawal delirium; need for dialysis / ECMO.
Monitored inpatient care	Persistent symptoms, abnormal serial tests, long-acting / modified-release exposure, recurrent naloxone need, moderate withdrawal, aspiration, inability to complete psychiatric or safeguarding assessment, or uncertain trajectory.
Observation unit	Selected stable patients requiring serial ECG, glucose, toxin level, mental-status observation, or psychosocial assessment within an approved time-limited pathway.
Psychiatric / crisis service	Only after immediate toxicological risk is resolved or a medical monitoring plan is explicitly accepted by the receiving service. Handover must include exposure, treatment, tests outstanding, and recurrence risks.
Discharge	Asymptomatic or resolved symptoms; stable vital signs and mental state; normal or acceptable required serial ECG / laboratory results; expected toxicity window completed; safe mobility and oral intake; no recurrent antidote requirement; psychosocial, safeguarding and follow-up plan complete.

27. Discharge and prevention plan

- Provide written substance-specific return precautions, including breathing difficulty, recurrent drowsiness, vomiting, confusion, seizure, chest pain, palpitations, fever, jaundice, reduced urine, bleeding, or new neurological symptoms.
- Explain delayed toxicity and the reason for any repeat laboratory appointment. Name the responsible clinician / service and confirm the patient can attend.
- Complete medication reconciliation and safe-storage advice. Remove discontinued, duplicated, or unsafe medicines through an approved process; do not instruct unsafe disposal.
- For opioid exposure, provide naloxone and overdose-prevention education where available. For alcohol or drug use disorder, make a direct treatment referral rather than only supplying a telephone number.
- For intentional poisoning, complete a documented psychosocial assessment and collaborative safety plan. Confirm safe supervision, transport, and restriction of access to the substance when possible.
- Notify public health, occupational health, child protection, law enforcement, or environmental authorities only when required and consistent with confidentiality and law.

28. Transfer and handover

- Obtain named receiving-clinician acceptance and document the destination, indication, and agreed treatment plan.
- Continue ventilation, monitoring, antidote infusions, dextrose, bicarbonate, high-dose insulin, atropine, vasopressors, cooling, or seizure treatment during delay and transfer. Send enough drug and equipment for anticipated delays.
- Use an escort competent to manage recurrent respiratory depression, dysrhythmia, seizure, agitation, airway failure, and infusion complications.
- Send packaging / photographs, poison-centre case number, exposure timeline, serial ECGs, laboratory trends, antidote doses, infusion calculations, response, complications, mental-health risk, and next actions due.
- Do not transfer a contaminated patient through clean areas or standard transport until decontamination and hazardous-material arrangements are complete.

29. Documentation and handover

- Agent, formulation, maximum dose, route, timing, intent, source of history, co-ingestants, and reliability.
- Initial and serial ABCDE findings, GCS, pupils, temperature, glucose, ECG parameters, laboratory results, and toxidrome assessment.
- Poison-centre / toxicologist name, case number, recommendations, updates, and closure criteria.
- Decontamination decision and airway assessment; antidotes and infusions with weight, concentration, rate, response, and adverse effects.
- Mental-health, capacity, safeguarding, violence, restraint, and observation decisions.
- Disposition rationale, outstanding results, repeat tests, medication changes, follow-up, return precautions, and teach-back.

30. Quality indicators and audit

Indicator	Suggested standard
Point-of-care glucose documented in altered / unconscious poisoning	At least 95%
12-lead ECG within 15 minutes for significant or unknown ingestion	At least 90%
Naloxone accompanied by immediate ventilation support when indicated	100%
Poison-centre / toxicology consultation documented for defined high-risk exposure	At least 90%
Intentional / unknown ingestion has acetaminophen risk addressed	At least 95%
Activated charcoal use includes airway and contraindication documentation	100%
Antidote dose, response and next action documented	At least 95%
Severe alcohol withdrawal receives thiamine and monitored sedative pathway	At least 95%
Intentional poisoning receives psychosocial / safeguarding assessment before discharge	100%
Transfer handover includes exposure timeline, serial ECG / labs, antidotes and poison-centre advice	At least 95%
Antidote stock and expiry audit completed	Monthly or per local governance cycle

31. Training and implementation

- Annual simulation should include opioid apnoea, TCA cardiotoxicity, beta-blocker / calcium-channel blocker shock, pesticide decontamination and atropinization, salicylate airway risk, toxic alcohol acidosis, and severe alcohol withdrawal.
- Staff should know the poison-centre contact method, antidote storage location, decontamination route, charcoal contraindications, naloxone devices, high-dose insulin order set, and dialysis / transfer escalation process.
- Pharmacy and clinical governance should maintain a locally approved antidote list, minimum stock quantities, expiry surveillance, after-hours access, borrowing agreements, and replacement process after use.
- Every serious poisoning, antidote delay, contamination incident, medication calculation error, unexpected deterioration, restraint-related harm, or failed transfer should undergo multidisciplinary review.

ANNEX A. One-page poisoning workflow

Step	Action
1. Protect	PPE; identify contamination; remove from source; external decontamination before clean-area entry.
2. Stabilize	ABCDE; ventilation; glucose; ECG; temperature; seizure control; active cooling; treat shock.
3. Reverse immediate threats	Naloxone for opioid hypoventilation; toxin-specific antidote when compelling; sodium bicarbonate for sodium-channel toxicity; atropine for cholinergic bronchorrhoea.
4. Identify risk	Agent, dose, time, route, formulation, intent, co-ingestants, patient factors, delayed-toxicity potential.
5. Consult	Poison centre / toxicology; pharmacy; critical care; nephrology / dialysis; psychiatry / addiction / safeguarding as needed.
6. Investigate	Glucose, ECG, acid-base, electrolytes; acetaminophen and salicylate when indicated; agent-specific levels and organ tests.
7. Reduce absorption	Activated charcoal or whole-bowel irrigation only when indicated and safe. Never induce emesis.
8. Monitor	Serial ventilation, ECG, neuro, temperature, glucose, laboratory and antidote-response endpoints.
9. Treat withdrawal / dependence	Evidence-based alcohol, opioid, or sedative pathway; thiamine; naloxone and treatment linkage.
10. Dispose safely	Complete toxicity window, mental-health and safeguarding assessment, follow-up, return precautions, and structured transfer / discharge.

ANNEX B. Toxidrome quick card

Pattern	Pupils / skin	Vital signs	Key treatment
Opioid	Small pupils; cool	Bradypnoea, bradycardia	Ventilation, naloxone
Sedative	Variable; usually normal	Hypoventilation, hypotension if severe	Airway / supportive care; avoid routine flumazenil
Sympathomimetic	Large; sweaty	Tachycardia, hypertension, hyperthermia	Benzodiazepines, cooling, fluids / cardiovascular care
Anticholinergic	Large; dry / flushed	Tachycardia, hyperthermia	Benzodiazepines, cooling, bladder care; toxicology for physostigmine
Cholinergic	Small; wet / secretions	Brady- or tachycardia; bronchorrhoea	Decontaminate, atropine, pralidoxime, ventilation
Serotonergic	Large; sweaty	Tachycardia, hyperthermia	Stop agents, benzodiazepines, cooling, cyproheptadine selected cases
Sodium-channel	Variable	Tachycardia, hypotension, wide QRS	Sodium bicarbonate, seizure control

ANNEX C. First-hour checklist

[ ] PPE and contamination risk assessed; decontamination completed or pathway activated.
[ ] Airway and ventilation assessed; capnography used when indicated.
[ ] Point-of-care glucose, temperature, monitor and 12-lead ECG completed.
[ ] Agent, formulation, maximum dose, time, route, intent and co-ingestants documented.
[ ] Acetaminophen and salicylate risk addressed; targeted laboratories sent.
[ ] Poison centre / toxicology contacted for high-risk or uncertain exposure.
[ ] Time-critical antidotes and infusion calculations double-checked.
[ ] Activated charcoal / whole-bowel irrigation decision documented.
[ ] Suicide, safeguarding, violence, capacity and observation needs addressed.
[ ] Next ECG, glucose, laboratory, antidote, reassessment and escalation time documented.

ANNEX D. Naloxone card

Situation	Action
Apnoea / near-apnoea	Ventilate immediately. Give available naloxone emergency dose, commonly 0.4-2 mg IV / IM / intranasal, repeat every 2-3 minutes to adequate ventilation.

Situation	Action
Opioid-dependent with partial respiratory depression	Titrate small IV doses, commonly 0.04-0.1 mg increments, to restore breathing while limiting abrupt withdrawal.
Recurrent respiratory depression	Repeat effective bolus and start infusion; a common starting principle is two-thirds of the effective cumulative dose per hour, then titrate.
No response	Check airway / ventilation, glucose, dose and route; consider potent opioid, delayed absorption, co-ingestion, brain injury, seizure, stroke, or non-opioid diagnosis.
After reversal	Observe for recurrence; treat pulmonary oedema, aspiration, agitation or withdrawal; provide take-home naloxone and OUD linkage.

ANNEX E. Acetaminophen card

Question	Required action
Single acute ingestion with known time?	Draw level at 4 hours or later and plot on treatment nomogram. Earlier level cannot exclude toxicity.
More than 8 hours since potentially toxic ingestion or result delayed?	Start N-acetylcysteine while awaiting results.
Unknown time / staggered / repeated dosing?	Use acetaminophen level plus AST / ALT, INR, renal function and clinical assessment; do not use nomogram.
Delayed absorption possible?	Repeat level when first is detectable but below treatment threshold and formulation / co-ingestion may delay absorption.
Stopping N-acetylcysteine?	Only when acetaminophen is undetectable and liver injury / INR / clinical criteria meet approved stopping rules.
Liver failure?	Continue N-acetylcysteine and contact a liver-transplant centre early.

ANNEX F. Salicylate rescue card

[ ] Serial salicylate, pH, electrolytes, glucose, renal function and clinical status.
[ ] Correct volume depletion, hypoglycaemia and potassium deficit.
[ ] Activated charcoal if ongoing absorption and airway / bowel safe.
[ ] Begin bicarbonate alkalinization for significant toxicity; target serum and urine pH according to protocol.
[ ] Avoid intubation if possible; if essential, preserve high minute ventilation and alkalinization.
[ ] Discuss haemodialysis early for CNS change, pulmonary oedema, renal failure, severe acidaemia, rising level, or treatment failure.

ANNEX G. Cardiotoxic poisoning card

Finding	Immediate response
QRS widening / TCA pattern	Sodium bicarbonate bolus; repeat ECG; treat seizure; monitor pH / sodium / potassium.
Bradycardic shock after beta-blocker / CCB	Calcium, high-dose insulin with dextrose, vasopressors, toxicology / ICU; consider glucagon, lipid, pacing, ECMO.
Digoxin dysrhythmia / hyperkalaemia	Digoxin immune Fab; continuous ECG; toxicology / cardiology.
QT prolongation / torsades	Stop causes; magnesium; correct potassium; defibrillate / pace as required.
Refractory cardiotoxic arrest	Continue toxin-specific therapy and prolonged resuscitation; consider lipid emulsion and ECMO in selected cases.

ANNEX H. Chemical / pesticide decontamination card

[ ] Notify charge clinician and activate contaminated-patient route.
[ ] Use product-specific PPE; avoid secondary contamination.
[ ] Remove and bag clothing / jewellery; brush dry powder before water.
[ ] Irrigate skin / eyes as indicated; contain runoff according to policy.
[ ] Airway, bronchorrhoea, wheeze, secretions and neuromuscular weakness assessed.
[ ] Atropine available and administered to ventilation / secretion endpoints when cholinergic toxicity present.
[ ] Pralidoxime and toxicology / critical-care advice obtained for significant organophosphate poisoning.
[ ] Co-exposed persons, workplace and public-health notification considered.

ANNEX I. Withdrawal card

Syndrome	High-risk features	Action
Alcohol	Prior seizure / delirium, marked autonomic activity, hallucinations, severe comorbidity, pregnancy	Benzodiazepine pathway, thiamine, electrolytes, monitoring; ICU for delirium / refractory symptoms.
Opioid	Pregnancy, dehydration, infection, suicidality, recent overdose, fentanyl / methadone use	COWS / clinical assessment; buprenorphine when appropriate; symptomatic care; naloxone and direct treatment linkage.
Benzodiazepine	High-dose chronic use, abrupt cessation, seizure, delirium, pregnancy, polydrug use	Controlled replacement / taper with specialist input; admit severe cases; no flumazenil.
Barbiturate / GHB	Rapid severe delirium, autonomic instability, seizure	Early ICU, addiction / toxicology support, sedative replacement under approved protocol.

ANNEX J. Antidote readiness checklist

[ ] Naloxone: IV / IM and intranasal products; infusion preparation.
[ ] N-acetylcysteine and approved dosing chart.
[ ] Sodium bicarbonate, calcium, dextrose, insulin, potassium and magnesium.
[ ] Digoxin immune Fab; atropine; pralidoxime.
[ ] Fomepizole or approved ethanol protocol; folate / folinic acid; thiamine / pyridoxine.
[ ] Hydroxocobalamin; methylene blue; lipid emulsion 20%; pyridoxine.
[ ] Octreotide; glucagon; L-carnitine; deferoxamine; cyproheptadine.
[ ] Activated charcoal and whole-bowel irrigation solution.
[ ] After-hours access, minimum stock, expiry, replacement and regional borrowing agreement verified.

ANNEX K. Monitoring chart

Time	GCS / pupils	RR / ETCO2 / SpO2	BP / HR / ECG	Temp	Glucose	pH / labs / level	Antidote / infusion / response
Arrival							
15 min							
30 min							
1 h							
2 h							
4 h							
Other							

ANNEX L. Discharge checklist

[ ] Expected toxicity window completed and symptoms resolved.
[ ] Vital signs, cognition, gait, oral intake and respiratory status stable.
[ ] Required serial ECG, glucose, toxin levels and organ tests complete and acceptable.
[ ] No recurrent naloxone, hypoglycaemia, seizure, dysrhythmia, agitation or withdrawal escalation.
[ ] Medication reconciliation and delayed-toxicity plan documented.
[ ] Psychosocial, suicide-risk, capacity and safeguarding assessment complete when indicated.
[ ] Naloxone / substance-use treatment linkage and safe-storage advice provided where relevant.
[ ] Written return precautions, repeat tests, responsible clinician, transport and supervision confirmed with teach-back.

ANNEX M. Transfer and handover minimum dataset

[ ] Agent, formulation, amount, route, exposure time range, intent and co-ingestants.
[ ] Poison-centre case number, toxicologist recommendations and next consultation time.
[ ] Initial and latest airway, ventilation, GCS, temperature, glucose, ECG and haemodynamics.
[ ] Serial pH, lactate, electrolytes, acetaminophen / salicylate and agent-specific levels.
[ ] Decontamination, charcoal / irrigation and contamination status.
[ ] Antidotes, boluses, infusions, concentration, rates, response and adverse effects.
[ ] Next tests, antidote dose, glucose / ECG check, airway or dialysis contingency due.
[ ] Mental-health, safeguarding, custody / restraint, family and capacity information.
[ ] Receiving clinician, transport team capability, drugs / equipment sent, and responsibility during delay.

ANNEX N. Audit tool

Audit item	Met / not met / N/A
Contamination and PPE risk assessed	
Airway / ventilation and glucose assessed promptly	
ECG completed for significant / unknown exposure	
Agent, dose, time, route and intent documented	
Acetaminophen and salicylate risk addressed	
Poison-centre / toxicology advice documented when indicated	
Charcoal contraindications / airway documented	
Antidote dose and response documented	
Serial monitoring completed to defined endpoint	
Withdrawal pathway and thiamine used appropriately	
Psychosocial / safeguarding assessment completed	
Discharge / transfer handover complete	

ANNEX O. Local configuration checklist

[ ] 24-hour poison-centre / toxicologist contact and backup process.

[ ] Designated contaminated-patient route, PPE, shower / irrigation and hazardous-waste arrangements.

[ ] Approved activated-charcoal, whole-bowel irrigation and body-packer pathways.

[ ] Naloxone dosing / infusion and take-home naloxone programme.

[ ] Acetaminophen / N-acetylcysteine and salicylate / bicarbonate order sets.

[ ] High-dose insulin euglycaemia therapy, digoxin Fab, organophosphate, toxic alcohol, cyanide, methemoglobin and LAST protocols.

[ ] Critical laboratory turnaround, co-oximetry, osmolality and toxin-level access.

[ ] Haemodialysis, ECMO, hyperbaric oxygen, transplant and regional transfer agreements.

[ ] Alcohol withdrawal, opioid withdrawal / buprenorphine, sedative withdrawal and Wernicke treatment pathways.

[ ] Mental-health, safeguarding, security, observation and post-overdose follow-up pathways.

[ ] Antidote stock quantities, storage, expiry, shortage and borrowing procedures.

ANNEX P. References and source tools

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5. Dart RC, Mullins ME, Matoushek T, et al. Management of Acetaminophen Poisoning in the US and Canada: A Consensus Statement. JAMA Network Open. 2023;6:e2327739.

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7. Extracorporeal Treatments in Poisoning Workgroup. Substance-specific EXTRIP recommendations for methanol, ethylene glycol, lithium, salicylates, valproate, theophylline, metformin and other toxins; current access June 2026.

8. American Society of Addiction Medicine. The ASAM Clinical Practice Guideline on Alcohol Withdrawal Management. Journal of Addiction Medicine. 2020;14 Supplement 1:1-72.

9. American Society of Addiction Medicine. National Practice Guideline for the Treatment of Opioid Use Disorder: 2020 Focused Update; and SAMHSA Buprenorphine Quick Start Guide.

10. Centers for Disease Control and Prevention. Clinical Guidance for Carbon Monoxide Poisoning Following Disasters and Severe Weather. Updated July 2024; accessed June 2026.

11. Dart RC, Goldfrank LR, Erstad BL, et al. Expert Consensus Guidelines for Stocking of Antidotes in Hospitals That Provide Emergency Care. Annals of Emergency Medicine. 2018;71:314-325.e1.

12. Local source tools to attach before approval: poison-centre directory; antidote formulary and stock list; naloxone, N-acetylcysteine, bicarbonate, high-dose insulin, pesticide, toxic alcohol, cyanide, methaemoglobinaemia and lipid-emulsion protocols; laboratory directory; withdrawal order sets; dialysis / ECMO / hyperbaric / transplant transfer directory; psychosocial and safeguarding forms.