NHS Grampian

Patient Group Direction for the Administration of Medicines Included in the Coronary Care Unit (CCU) PGD Formulary by Nurses Working Within the CCU in NHS Grampian

Lead Author: Senior Staff Nurse, Coronary Care Unit, ARI	**Consultation Group:** See relevant page in the PGD	**Approver:** Medicines Guidelines and Policies Group **Authorisation:** NHS Grampian

Signature:		**Signature:**

NHSG Identifier: NHSG/PGD/CCU/ MGPG1314	**Review Date:** August 2024 **Expiry Date:** August 2025	**Date Approved:** August 2022

NHS Grampian have authorised this Patient Group Direction to help individuals by providing them with more convenient access to an efficient and clearly defined service within the NHS Board. This Patient Group Direction cannot be used until Appendix 1 and 2 are completed.

Uncontrolled when printed

Version 1

Revision History:

Reference and approval date of PGD that has been adapted and/or superseded	New PGD adapted from NHSG/PGD/atrCCU/MGPG991 and NHSG/PGD/AdrCCU/MGPG990.	
Date of change	**Summary of Changes**	**Section heading**
May 2022	New PGD formulary.	

NHGS Identifier: NHSG/PGD/CCU/MGPG1314
Keyword(s): PGD Patient Group Direction nurse atropine bradycardias adrenaline cardiac arrest nurse CCU coronary care unit

Policy Statement: It is the responsibility of the individual healthcare professionals and their line managers to ensure that they work within the terms laid down in this PGD and to ensure that staff are working to the most up to date PGD. By doing so, the quality of the services offered will be maintained, and the chances of staff making erroneous decisions which may affect individual, staff or visitor safety and comfort will be reduced. Supervisory staff at all levels must ensure that staff using this PGD act within their own level of competence.

The lead author is responsible for the review of this PGD and for ensuring the PGD is updated in line with any changes in clinical practice, relevant guidelines, or new research evidence.

Review date: The review date for a PGD needs to be decided on a case-by-case basis in the interest of safety. The expiry date should not be more than 3 years, unless a change in national policy or update is required.

Document:	Drafted:	May 2022
	Completed:	August 2022
	Approved:	August 2022 (published – October 2022)
	Amended and re-authorised:	

Organisational Authorisations

This PGD is not legally valid until it has had the relevant organisational authorisation.

PGD Developed/Reviewed by;

Medical practitioner	**Name:** Dr Jonathan Affolter **Title:** Consultant Cardiologist **Contact email:** jonathan.affolter@nhs.scot **Signature:** ..... J AFFOLTER ..... **Date:** 04/10/2022
Senior representative of the professional group who will provide care under the direction	**Name:** Joanne Murray **Title:** Senior Staff Nurse CCU **Contact email:** joanne.murray13@nhs.scot **Signature:** ..... JMurray ..... **Date:** 12/10/2022
Lead author	**Name:** Fiona Stirton **Title :** Senior Charge Nurse CCU **Contact email:** fiona.stirton@nhs.scot **Signature:** ..... **Date:** 05/10/2022
Pharmacist	**Name:** Lynne Davidson **Title :** Cardiology Pharmacist **Contact email:** lynne.davidson@nhs.scot **Signature:** ..... **Date:** 04/10/2022

Approved and authorised for use within NHSG by;

Medicines Guidelines and Policies Group Chair	Signature	Date Signed
Lesley Coyle		27/09/2022

Management and Monitoring of Patient Group Direction

PGD Consultative Group

The consultative group is legally required to include a medical practitioner, a pharmacist and a representative of the professional group who will provide care under the direction.

Name:	Title:
Fiona Stirton	**Lead Author:** Senior Charge Nurse CCU
Lynne Davidson	**Pharmacist:** Cardiology Pharmacist
Dr Jonathan Affolter	**Medical Practitioner:** Consultant Cardiologist
Joanne Murray	**Senior Representative:** Senior Charge Nurse
Louise Waldie	Resuscitation Officer
Aimi Stewart	Senior Staff Nurse CCU
Dr Nicola Ryan	Consultant Cardiologist

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Clinical indication to which this PGD applies

Definition of situation/Condition	This Patient Group Direction (PGD) will authorise registered nurses working within the Coronary Care Unit (CCU) to administer medicines included in the CCU PGD Formulary to individuals aged ≥ 16 years in the event of a life threatening illness where medical intervention is necessary and in the absence of a doctor being immediately available in the CCU. This PGD should be used in conjunction with the recommendations in the current British National Formulary (BNF), British National Formulary for Children (BNFC), and the individual Summary of Product Characteristics (SmPC).
Inclusion criteria	Any individual ≥ 16 years of age who requires emergency medical intervention in the absence of a doctor being immediately available in the CCU. **NOTE:** Medical help must be sought immediately in the case of life threatening bradycardias or cardiac arrest. See the individual medicine monographs for further specific inclusion information. Prior to the administration of the medicine, valid consent to receiving treatment under this PGD must be obtained. Consent must be in line with current NHSG consent policy.
Exclusion criteria	• Contra-indications are relative as these products are intended for use in life-threatening emergencies. • Individuals who have a Do Not Attempt Cardiopulmonary Resuscitation (DNA CPR) in place. • Individuals for whom no valid consent has been received. See the individual medicine monographs for further specific exclusion information.
Precautions and special warnings	See individual medicine monographs.
Action if excluded from treatment	**Not considered likely however;** Dial 2222 (hospital internal) according to local procedure, or seek urgent medical advice. Ensure all actions/decisions are documented.

	The reason why the patient was excluded under the PGD will be documented in the patient's medical notes.
Action if treatment is declined	Contact medical staff immediately. The individual should be advised of the risks and consequences of not receiving treatment. Record outcome in Patient Administration Record if appropriate, or relevant clinical record.

Description of treatment available under the PGD

Name form and strength of medicine	See individual medicine monographs.
Legal status	Medicines included in this PGD are all Prescription-only Medicines (POM).
Is the use out with the SmPC?	No.
Dosage/Maximum total dose	See individual medicine monographs.
Frequency of dose/Duration of treatment	See individual medicine monographs.
Maximum or minimum treatment period	See individual medicine monographs.
Route/Method of administration	See individual medicine monographs.
Quantity to be administered	See individual medicine monographs.
Storage requirements	See individual medicine monographs.
Follow-up (if applicable)	Urgently refer to a member of the medical staff for further management. See individual medicine monographs.
Advice (Verbal)	It is not possible to offer individual advice as these medicines will be administered during a clinical emergency.

Advice (Written)	It is not possible to offer individual written advice as these medicines will be administered during a clinical emergency.
Identifying and managing possible adverse reactions	See individual medicine monographs. **This list is not exhaustive. Please also refer to current BNF and manufacturers SmPC for details of all potential adverse reactions.** **BNF**: BNF British National Formulary - NICE BNF for Children British National Formulary - NICE **SmPC/PIL/Risk Minimisation Material:** Home - electronic medicines compendium (emc) MHRA Products | Home RMM Directory - (emc) If an adverse reaction does occur give immediate treatment and inform relevant medical practitioner as soon as possible. Document in accordance with locally agreed procedures in the individual's record. Report any suspected adverse reactions using the Yellow Card System. Yellow Card Scheme - MHRA.
Facilities and supplies required	The following are to be available at sites where the medicines are to be administered: • Appropriate storage facilities • An acceptable level of privacy to respect individual's right to confidentiality and safety • Basic airway resuscitation equipment (e.g. bag valve mask, supraglottic airway) • Immediate access to Epinephrine (Adrenaline) 1 in 1000 injection • Access to a working telephone • Another competent adult, who can summon urgent emergency support if required should ideally be present • Access to medical support (this may be via the telephone) • Approved equipment for the disposal of used materials • Clean and tidy work areas, including access to hand washing facilities or alcohol hand gel • A copy of this current PGD in print or electronically.

Characteristics of staff authorised to administer medicine(s) under PGD

Professional qualifications	Registered Nurses as recognised by the Nursing and Midwifery Council (NMC).
Specialist competencies	**Approved by the organisation as:** • Competent to assess the individual's capacity to understand the nature and purpose of the medicine administration in order to give or refuse consent • Aware of current treatment recommendations and be competent to discuss issues about the medicine with the individual • Having undertaken appropriate training to carry out clinical assessment of individuals identifying that treatment is required according to the indications listed in the PGD. • Competent to undertake administration of the medicine • Competent in the recognition and management of anaphylaxis or under the supervision of persons able to respond appropriately to immediate adverse reactions • Competent to work under this PGD and authorised by name as an approved person to work under the terms of the PGD.
Ongoing training and competency	**All professionals working under this PGD must:** • Have undertaken NoS PGD module training on TURAS Learn • Have attended basic life support training either face to face or online and updated in-line with Board requirements • Have undertaken NHS e-anaphylaxis training or equivalent which covers all aspects of the identification and management of anaphylaxis in-line with Board requirements • Maintain their skills, knowledge and their own professional level of competence in this area according to their Code of Professional Conduct. **Note:** All practitioners operating under the PGD are responsible for ensuring they remain up to date with the use of the medicine. If any training needs are identified these should be discussed with those responsible for authorisation to act under the PGD. • Have knowledge and familiarity of the following; o SmPC for the medicine(s) to be administered in accordance with this PGD.
Responsibilities of professional manager(s)	**Professional manager(s) will be responsible for;** Ensuring that the current PGD is available to all staff providing care under this direction.

	Ensuring that staff have received adequate training in all areas relevant to this PGD and meet the requirements above. Maintain up to date record of all staff authorised to administer the medicine(s) specified in this direction.

Documentation

Authorisation of administration	Registered Nurses working in the CCU within NHS Grampian can be authorised to administer the medicines specified in this PGD by their Senior Charge Nurse or Consultant. All authorised staff are required to read the PGD and sign the Agreement to Administer Medicines Under PGD (Appendix 1). A Certificate of Authorisation (Appendix 2) signed by the authorising professional/manager should be supplied. This should be held in the individual health professional's records, or as agreed locally.
Record of administration	An electronic or paper record must be completed to allow audit of practice. An electronic/HEPMA record of the screening and subsequent administration, or not of the medicine(s) specified in this PGD should be made in accordance with individual Health Board electronic/HEPMA recording processes. If a paper record is used for recording the screening of individuals and the subsequent administration, or not of the medicine(s) specified in this PGD, it should include as a minimum: • Date and time of administration • Individuals name and CHI • Exclusion criteria, record why the medicine was not administered (if applicable) • Record that valid consent to treatment under this PGD was obtained • The name, dose, form, route (batch number, expiry date and anatomical site where appropriate for injectable medicines) of the medicine administered • Advice given, including advice given if excluded or declined treatment under this PGD • Signature and name in capital letters of the healthcare professional who administered the medicine, and who undertook the assessment of the individual's clinical suitability for the administration/supply of the medicine

<table>
<tr><td></td><td>

- Record of any adverse effects and the actions taken (advise individuals' GP/relevant medical practitioner).

Depending on the clinical setting where administration is undertaken, the information should be recorded manually or electronically, in one (or more) of the following systems, as appropriate:

- Secondary Care Medical Notes
- HEPMA
- Individual service specific systems.

Local policy should be followed with respect to sharing information with the individual's General Practitioner.

All records should be clear, legible and contemporaneous and in an easily retrievable format.
</td></tr>
<tr><td>Audit</td><td>All records of the medicine specified in this PGD will be filed with the normal records of medicines in each practice/service. A designated person within each practice/service where the PGD will be used will be responsible for annual audit to ensure a system of recording medicines administered under a PGD.</td></tr>
<tr><td>References</td><td>
Electronic Medicines Compendium http://www.medicines.org.uk Adrenaline (Epinephrine) Injection 1:10,000 (glass prefilled syringe) – Date of revision of text 11/03/19, accessed 10/05/22.

<table>
<tr><th>Medicine</th><th>Date of Revision</th><th>Date Accessed</th></tr>
<tr><td>Atropine Sulfate 1mg/5mL, solution for injection in pre-filled syringe (Aguettant Ltd)</td><td>13/05/16</td><td>10/05/22</td></tr>
<tr><td>Atropine Sulfate 0.5mg/5mL, solution for injection in pre-filled syringe (Aguettant Ltd)</td><td>17/06/15</td><td>10/05/22</td></tr>
<tr><td>Atropine Sulfate Injection 600mcg in 1mL (Martindale Pharma)</td><td>10/01/17</td><td>10/05/22</td></tr>
</table>

British National Formulary https://about.medicinescomplete.com/ accessed 10/05/22.
</td></tr>
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	UK Resuscitation Council Adult advanced life support 2021 Guideline. UK Resuscitation Council Bradycardia Algorithm 2021.

Appendix 1

Healthcare Professional Agreement to Administer Medicine(s) Under Patient Group Direction

I: _____ (Insert name)

Working within: _____ e.g. Area, Practice

Agree to administer the medicine(s) contained within the following Patient Group Direction:

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I have completed the appropriate training to my professional standards enabling me to administer the medicine(s) under the above direction. I agree not to act beyond my professional competence, nor out with the recommendations of the direction.

Signed: _____

Print Name: _____

Date: _____

Profession: _____

Professional Registration number/PIN: _____

Appendix 2

Healthcare Professionals Authorisation to Administer Medicine(s) Under Patient Group Direction

The Lead manager/Professional of each clinical area is responsible for maintaining records of all clinical areas where this PGD is in use, and to whom it has been disseminated.
The Senior Nurse/Professional who approves a healthcare professional to administer the medicine(s) under this PGD is responsible for ensuring that they are competent, qualified and trained to do so, and for maintaining an up-to-date record of such approved persons.
The Healthcare Professional that is approved to administer the medicine(s) under this PGD is responsible for ensuring that they understand and are qualified, trained and competent to undertake the duties required. The approved person is also responsible for ensuring that administration is carried out within the terms of the direction, and according to his or her individual code of professional practice and conduct.
Patient Group Direction for the Administration of Medicines Included in the Coronary Care Unit (CCU) PGD Formulary by Nurses Working Within the CCU in NHS Grampian
Local clinical area(s) where the listed healthcare professionals will operate under this PGD:

Name of Healthcare Professional	Signature	Date	Name of Manager	Signature	Date

Patient Group Direction for the Administration of Medicines Included in the Coronary Care Unit (CCU) PGD Formulary by Nurses Working Within the CCU in NHS Grampian					
Name of Healthcare Professional	**Signature**	**Date**	**Name of Manager**	**Signature**	**Date**

Appendix 3

Medicine Monographs

CCU PGD Formulary

Adrenaline (Epinephrine) 1mg/10mL (1:10,000) For Injection Aurum - 1:10,000 (1mg in 10mL) pre-filled syringe Aguettant - 1:10,000 (1mg in 10mL) pre-filled syringe	
Legal Status	POM
Indication	Cardiac arrest.
Inclusion Criteria	As per main PGD inclusion criteria and additionally; • Patients in cardiac arrest and where there is no doctor immediately available in the Coronary Care Unit. • Cardiac arrest is diagnosed when the patient: o Is in asystole (defined as the absence of electrical activity from the ECG); pulseless electrical activity, pulseless ventricular tachycardia or ventricular fibrillation. o Has no palpable pulse or heartbeat.
Exclusion Criteria	As per main PGD exclusion criteria.
Precautions and Special Warnings	Adrenaline should be used as soon as possible when the cardiac arrest rhythm is non-shockable, and after 3 defibrillation attempts for a shockable cardiac arrest rhythm. Monitor the response, start with a safe dose and give further doses if a greater response is needed, i.e. titrate the dose according to effect. These should be regarded as relative and **not absolute contraindications** in life threatening emergency situations. • Adrenaline is contraindicated in patients with shock (other than anaphylactic shock), organic heart disease, or cardiac dilatation, as well as most patients with arrhythmias, organic brain damage, or cerebral arteriosclerosis. • Adrenaline injection is contraindicated in patients with narrow angle glaucoma. • Adrenaline is contraindicated for use in fingers, toes, ears, nose or genitalia and must always be administered intravenously or intraosseously only.
Dose/Maximum total dose	1mg (i.e. 10mL of 1:10,000) adrenaline (epinephrine) is given as intravenous bolus using a central line if available.

Adrenaline (Epinephrine) 1mg/10mL (1:10,000) For Injection Aurum - 1:10,000 (1mg in 10mL) pre-filled syringe Aguettant - 1:10,000 (1mg in 10mL) pre-filled syringe	
	Flush with 10mL (20mL if peripheral line) 0.9% sodium chloride injection following each administration (refer to the Patient Group Direction for the administration of sodium chloride 0.9% injection for flushing intravenous catheters/cannulae). Give as soon as possible having determined asystole or pulseless electrical activity. Repeat, if necessary, every 3 to 5 minutes having assessed rhythm before administration (as per current UK Resuscitation Council Guidelines 2015, Advanced Adult Life Support). Give after the third shock when treating ventricular fibrillation or pulseless ventricular tachycardia. Repeat, if necessary (after alternate shocks), every 3 to 5 minutes having assessed rhythm before administration (as per current UK Resuscitation Council Guidelines 2015, Adult Advanced Life Support). Maximum number of treatments: No limit – (determined by patient response).
Frequency of dose/Duration of treatment	The same dose can be repeated as necessary at intervals as described above if there is no improvement in the patient's condition. Continue treatment until the patient's condition improves and no further doses of adrenaline are deemed necessary, or until medical help arrives.
Maximum or minimum treatment period	See Frequency of dose/Duration of treatment section above.
Route/Method of Administration	Intravenous
Quantity to be administered	See Dose/Maximum total dose section above.

Adrenaline (Epinephrine) 1mg/10mL (1:10,000) For Injection Aurum - 1:10,000 (1mg in 10mL) pre-filled syringe Aguettant - 1:10,000 (1mg in 10mL) pre-filled syringe	
Potential Adverse Reactions	Refer to the product Summary of Product Characteristics (SmpC) for full details of known adverse effects. The below list details only commonly reported adverse effects (>1 in 100) and does not represent all the product's known adverse effects: Side effects such as anxiety, dyspnoea, hyperglycaemia, restlessness, palpitations, tachycardia, tremors, weakness, dizziness, headache, and coldness of the extremities may occur even with small doses of adrenaline. Other side effects include; cerebral haemorrhage, nausea vomiting, sweating and pulmonary oedema (on excessive dosage or extreme sensitivity).
Advice	It is not possible to offer patient advice as this medicine will be administered during a clinical emergency.
Follow up (If applicable)	Urgently refer to a member of the medical staff for further management.
Storage	Store at less than 25°C and protect from light. Do not freeze.

Atropine as either a 600microgram/mL pre-filled syringe Or 1mg in 5mL pre-filled syringe Or 500microgram in 5mL pre-filled syringe	
Legal Status	POM
Indication	Treatment of life threatening bradycardia.
Inclusion Criteria	As per main PGD inclusion criteria and additionally; Any individual ≥ 16 years of age who develops bradycardia with adverse signs as per UK resuscitation flowchart for bradycardia and in the absence of a doctor immediately available in the CCU. Administration of atropine for the treatment of arrhythmia with output as considered appropriate for individuals even in the existence of a DNACPR, Living Will (advanced directive). All individuals above who: • Have given consent. • Do not have the capacity to consent due to medical condition. **N.B.** Ask another member of staff to contact the medical staff immediately.
Exclusion Criteria	As per main PGD exclusion criteria and additionally: • Previous allergy to atropine (if known about) • Use is contraindicated in cardiac transplant individuals – hearts are denervated and will not respond to vagal blockade by atropine, which can cause paradoxical sinus arrest or high grade AV block. • Use is contraindicated in individuals with known hypersensitivity to the drug, obstruction of the bladder neck, e.g. due to prostatic hypertrophy, reflux oesophagitis, closed angle glaucoma, myasthenia gravis (unless used to treat the adverse effects of an anticholinesterase agent), paralytic ileus, severe ulcerative colitis and obstructive disease of the gastrointestinal tract. **NOTE:** Contraindications are relative as this product is intended for use in life-threatening emergencies.

Atropine as either a 600microgram/mL pre-filled syringe Or 1mg in 5mL pre-filled syringe Or 500microgram in 5mL pre-filled syringe	
Precautions and Special Warnings	Acute coronary ischaemia or myocardial infarction (increase in heart rate may worsen ischaemia or increase in zone of infarction). The following should be regarded as relative and **not absolute precautions** in life threatening emergency situations. • Antimuscarinic agents should be used with caution in the elderly and children since these individuals may be more susceptible to adverse effects. • Atropine should also be used with caution in individuals with hyperthyroidism, hepatic or renal disease or hypertension. • Use with caution in febrile individuals or when ambient temperature is high since antimuscarinics may cause an increase in temperature. • Antimuscarinics block vagal inhibition of the SA nodal pacemaker and should thus be used with caution in individuals with tachyarrhythmias, congestive heart failure or coronary heart disease. • Parenterally administered atropine should be used cautiously in individuals with chronic pulmonary disease since a reduction in bronchial secretions may lead to formation of bronchial plugs. • Antimuscarinics should be used with extreme caution in individuals with autonomic neuropathy. • Antimuscarinics decrease gastric motility, relax the lower oesophageal sphincter and may delay gastric emptying; they should therefore be used with caution in individuals with gastric ulcer, oesophageal reflux or hiatus hernia associated with reflux oesophagitis, diarrhoea or GI infection.
Dose/Maximum total dose	An initial 500microgram or 600microgram dose should be administered; however it is vital that medical help is sought prior to the administration of further doses. If no medical assistance is available and the condition of the individual continues to deteriorate repeat the dose as instructed below. Life threatening bradycardias with adverse clinical signs: • Administer 500microgram or 600microgram bolus intravenously.

Atropine as either a 600microgram/mL pre-filled syringe Or 1mg in 5mL pre-filled syringe Or 500microgram in 5mL pre-filled syringe	
	NOTE: Dose depends on the availability of certain atropine preparations within NHSG as some will be 500microgram and others 600microgram. • Flush with 10mL of 0.9% sodium chloride injection (refer to the PGD for the administration of sodium chloride 0.9% injection for flushing intravenous catheters/cannulae). • Repeat dose, in response to clinical change/condition, as required every 3 – 5 minutes up to a total dose of 3mg. **Maximum total dose of 3mg allowed under this PGD.**
Frequency of dose/Duration of treatment	Repeat dose, in response to clinical change/condition, as required every 3 – 5 minutes up to a total dose of 3mg.
Maximum or minimum treatment period	See Frequency of dose/Duration of treatment section above.
Route/Method of Administration	Parenteral administration.
Quantity to be administered	See Dose/Maximum total dose section above.
Potential Adverse Reactions	Refer to the product Summary of Product Characteristics (SmPC) for full details of known adverse effects. The below list details only commonly reported adverse effects (>1 in 100) and does not represent all the product's known adverse effects: • Tachycardia (rarely arrhythmias). • Urinary retention and urgency, dry mouth, thirst, blurred vision and glaucoma, constipation, flushing, dryness of skin, hypersensitivity reactions. • Higher doses may cause agitation, confusion, hallucinations, hypertension, increased body temperature, photophobia, delirium, nausea, tremors, vomiting and pupil dilation.

Atropine as either a 600microgram/mL pre-filled syringe Or 1mg in 5mL pre-filled syringe Or 500microgram in 5mL pre-filled syringe	
Advice	It is not possible to offer patient advice as this medicine will be administered during a clinical emergency.
Follow up (If applicable)	Urgently refer to a member of the medical staff for further management. ECG must be performed as soon as able.
Storage	Store below 25°C. Protect from light.