Worcestershire Acute Hospitals NHS Trust

Nurse-Led DC Cardioversion Guideline

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

The nurse-led elective outpatient cardioversion service has been established to provide direct current cardioversion to stable patients who are diagnosed with a supraventricular dysrhythmia by a Cardiologist and referred to the services by them.

This guideline is for use by the following staff groups :

All clinical staff

Lead Clinician(s)

Dr Helen Routledge	Consultant Cardiologist
Approved by Cardiology Directorate Meeting on:	29th April 2020
Approved by Medicines Safety Committee on:	
Review Date: This is the most current document and is to be used until a revised version is in place	29thApril 2023

Key amendments to this guideline

Date	Amendment	Approved by:
July 2013	New Guideline	
October 2015	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
October 2016	Further extension as per TMC paper approved on 22nd July 2015	TMC
February 2018	Document reviewed and amended to include the increased amount of Midazolam to 10mg, which is an increase from 7.5mg. Document Approved for two years.	Cardiology Business Meeting
April 2020	Document reviewed and approved virtually due to COVID	Cardiology Business meeting/Clinical Lead

Nurse-Led DC Cardioversion Guideline

Aim:

- To provide a sustained DC cardioversion list in the safest possible way
- To reduce waiting times
- Cost effectiveness

Team of Staff

2 Cardiac specialist Nurses, 1 day case nurse.

Competencies

- 5 supervised DC Cardioversions: - The Cardiac specialist Nurses will lead this service. Competence will be assessed by individuals performing 5 DC Cardioversion each and being assessed by Lead CNS for DC cardioversion.
- Advance Life Support
- Advanced ECG interpretation skills
- Health assessment
- Non-Medical Prescribing
- Cannulation skills.
- In depth knowledge of conscious sedation
- PGD competencies (Midazolam & Flumazenil)

Accountability

NMC
NICE
Local Trust policy

Location – Alexandra General Hospital

Birch unit (day case)
Pacing room (Coronary care)

Location – Worcestershire Royal Hospital

Medical day case unit
Pacing room (Laurel 1)

Guideline

- Patients will initially be referred to a Cardiologist where Atrial Fibrillation/flutter will be identified.

- Echocardiogram may be requested and reviewed by the Cardiologist to assess structure and cardiac function- the patient will be referred to the Cardiac Nurse Specialists for elective DC Cardioversion by the cardiology secretaries.

- The GP will be requested to commence anticoagulation therapy for the patient to help reduce their thrombotic risk.

- If the patient is prescribed a novel oral anticoagulant (NOAC) e.g. dabigatran, rivaroxaban, apixaban or edoxaban they can be added to the DC Cardioversion list after 3 weeks of uninterrupted anticoagulation

- Patients who are treated with warfarin must have weekly blood tests for INR and can be listed for DC Cardioversion when their INR has been >2.0 for 3 consecutive weeks. They are advised to contact the cardiology secretaries who will allocate the next available date. They must continue to have weekly INR checks to ensure that they remain within therapeutic range. Any concerns about their INR should be reported to the cardiology secretaries.

- The patient will be offered a Pre-assessment clinic appointment. If the patient has had multiple attendances for DC Cardioversion or travel to appointments is difficult, a telephone pre-assessment May be sufficient.

- The patient’s details will be entered on a database for audit purposes

- Patients will be asked to attend day-case unit either at the Alexandra general hospital or the Worcestershire Royal Hospital

- Patients that have ICD and CRT-D devices will have their DC Cardioversion at the Worcestershire Royal Hospital. Device interrogation will be performed post procedure

- Consent will be discussed at pre assessment and a consent form with patient information leaflet will be given at the same appointment. Consent will be confirmed on the day of the procedure.

- Baseline observations and ECG will be performed by the staff. If the ECG still demonstrates Atrial fibrillation/flutter then the patient will require Cannulation. All documentation will be via the DC Cardioversion care pathway.

- Once the patient is cannulated they will be transferred via a trolley to the pacing room for their DC Cardioversion.

- They will be attached to the cardiac defibrillator via the three leads for monitoring the heart rhythm and the defibrillations pads applied (once excess hair removed and skin prepared) anterior posterior or anterior lateral position. The defibrillator with be **set to synchronised** mode.

- BP cuff and SPO2 monitoring will be attached to the patient during the procedure and Oxygen therapy initiated if oxygen saturations are <95%.

- Cannula will be flushed with 0.9% sodium chloride followed by IV Midazolam. Midazolam will be administered as described in local guideline and National Patient Safety Association Guidance (Maximum total of 10 mg) If the patient requires further amounts of Midazolam this will be discussed with a member of the Cardiology team (Consultant/Registrar). Flumazenil and atropine will be available during the procedure.

- Once the patient has been adequately sedated 100-150 joules will be selected for atrial flutter patients, 120-200 joules for atrial fibrillation patients and delivered safely. A clinical judgement is made for individual patients in terms of energy selection and pad position. A rhythm strip will be obtained. If the first shock has not been successful the energy will be increased incrementally and further shocks delivered – up to a maximum of 3. Further sedation will be given if necessary. If the patient does not revert to normal sinus rhythm the activity will be deemed as unsuccessful DC Cardioversion; they will be reviewed in cardiology outpatients. (Any deviation from the guideline will be discussed with the Cardiologist and documented in the care pathway).

- Once the procedure is completed, the patient will be recovered in either day case unit or in the pacing room.

- Vital parameters are monitored every 15 minutes in the first hour followed by 30 minute observations until patient is fully awake. If the patient is not waking adequately after 45 minutes the Cardiac Nurse Specialists will be notified; Flumazenil may be indicated to reverse the Midazolam effect.

- Once the patient is alert food and drink will be offered. The patient will be encouraged to mobilise

- An ECG will be repeated post procedure. Patients will be seen by the Cardiac Nurse Specialist prior to discharge.

- Safe discharge will be facilitated by the recovery staff. Patients should be accompanied home by a responsible adult who should stay with them for at least 12 hours if they live alone. **Prior to discharge patients should have returned to their baseline level of consciousness.** The patient will be advised that they must not drive a car, operate machinery, sign legal documents or consume any alcohol for 24 hours after sedation.

- Cardiac Nurse Specialist will communicate the outcome of the procedure to the patient's GP via letter; a copy will be given to the patient.

MONITORING TOOL

How will monitoring be carried out?

- The service will be audited over a 6 month period. The results will be presented at the cardiology directorate meeting

- The lead for Nurse-led Cardioversion will monitor the compliance with the guideline with the aid of competency portfolio and will direct users to utilise the guideline and document any deviation

References:

- British National Formulary 2020
- Department of Health (2009) Reference guide to consent for examination or treatment 2nd edition. www.gov.uk
- National Institute for Health and Care Excellence (2014) Atrial Fibrillation: Management CG 180 www.nice.org.uk
- National patient safety agency (2008) Reducing the risk of overdose with midazolam injection in adults. www.npsa.nhs.uk/rrr NPSA/2008/RRR011:
- Cullinane M. Gray A J G (2004) NCEPOD scoping our practice. www.ncepod.org.uk
- Worcestershire Acute Hospitals NHS Trust (2015) Patient group directions. Midazolam injection 5mg/ml
- Worcestershire Acute Hospitals NHS Trust (2017) Guideline for conscious sedation practice in adult endoscopy
- Worcestershire Acute Hospitals NHS Trust (2015) Patient group directions. Flumazenil 100mcg/ml
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CONTRIBUTION LIST

Key individuals involved in developing the document

Name	Designation
Kerry O'Dowd	Cardiology nurse specialist
Dr Helen Routledge	Consultant Cardiologist
Dr William Foster	Consultant Cardiologist
Dr Bashar Aldhoon	Consultant Cardiologist
Dr David Smith	Consultant Cardiologist
Dr D Wosomu- Abban	Consultant Cardiologist

Circulated to the following individuals for comments

Name	Designation
Clare Alexandra	Matron
Jo Kenyon	Manager for Cardiology
Kelly Fee Dr Jasper Trevelyan Katherine Smith	Ward Manager CCU/Laurel 1 Medical Director Cardiology Pharmacist

Circulated to the following CD's/Heads of dept for comments from their directorates / departments

Name	Directorate / Department
	Director of Nursing

Circulated to the chair of the following committee's / groups for comments

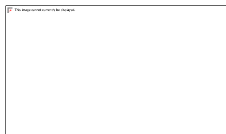
Name	Committee / group

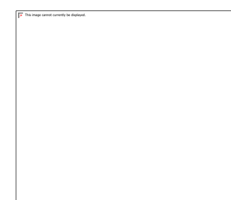
Supporting Document 1 – Equality Impact Assessment form

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;

NHS Worcestershire Acute Hospitals NHS Trust





Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust		Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
Date assessment completed			

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title:**
What is the aim, purpose and/or intended outcomes of this Activity?	
Who will be affected by the development & implementation of this activity?	❑ Service User ❑ Patient ❑ Carers ❑ Visitors ❑ Staff ❑ Communities ❑ Other __________________________ ❑
Is this:	❑ Review of an existing activity ❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?
What information and evidence	

have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	
Summary of relevant findings	

Section 3
Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age				
Disability				
Gender Reassignment				
Marriage & Civil Partnerships				
Pregnancy & Maternity				
Race including Traveling Communities				
Religion & Belief				
Sex				
Sexual Orientation				
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless;				

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Social/Economic deprivation, travelling communities etc.)				
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)				

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?				
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)				

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	
Date signed	
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	**Yes/No**
1.	Does the implementation of this document require any additional Capital resources	N
2.	Does the implementation of this document require additional revenue	N
3.	Does the implementation of this document require additional manpower	N
4.	Does the implementation of this document release any manpower costs through a change in practice	N
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	N
	Other comments: By this activity being taken over by the Cardiac sisters, it free up trolleys in cardiac catheter lab, cardiac lab staff and cardiologists and registrars time performing the activity and follow up letter.	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval