Perioperative Planning for Plastic Surgery LA Skin Procedures at Manchester Foundation Trust

Overview

The aim of this document is to collate the information on common factors influencing surgical planning for local anaesthetic skin surgery patients. The factors addressed herein represent reasons frequently reported for cancellation of surgery. Therefore, access to, and awareness of, these factors may help to reduce on-the-day cancellations in future. A review on optimising patient safety in skin surgery has been published by Smith et al. [1] which provides a summary of the issues and their suggested management.

This document specifically addresses:

- Anticoagulation
- Cardiac rhythm devices
- Hypertension
- Diabetes
- Dementia / Lack of mental capacity

Procedure(s) applicable:

- Excision lesion and direct closure under LA
- Excision lesion and STSG reconstruction under LA
- Excision lesion and FTSG reconstruction under LA
- Excision lesion and local flap reconstruction under LA
- Excision lesion and leave to heal by secondary intention under LA
- Secondary reconstruction of skin defect with skin graft or local flap under LA

These guidelines are applicable to all cutaneous anatomical sites.

Anticoagulation

Skin cancer surgery using skin graft and local flap reconstruction is common. Development of a haematoma is a major determinant in failure of these procedures. However, there are significant risks associated with perioperative cessation of anticoagulants [2–5].

- *The risk of discontinuing antithrombotic medication is said to outweigh the risks of continued anticoagulation for skin surgery and as such one should aim to continue anticoagulation for as many procedures as possible.* [6–11],
- *Direct closure, local flaps and compressible sites are moderate to low risk hence changing antiplatelet/anticoagulant medication is not mandated whereas healing by secondary intention, grafting, non-compressible sites are high risk hence may need a reduction/ stoppage of anti-platelet/ anti-coagulant.*

Patients on antiplatelet monotherapy alone should have a VTE risk calculated (CHA_2DS_2VASc).

* Obtain Creatinine Clearance (CrCl) and consider discussing with Haematology if abnormal

Abbreviation	Risk Factor	Points
C	Congestive Heart Failure (LVEF<40%)	1
H	Hypertension	1
A	Age≥75 years	2
D	Diabetes Mellitus	1
S	Stroke/TIA or systemic embolism	2
V	Vascular Disease	1
A	Age 65-74 years	1
Sc	Sex category (female)	1

[13].

In practice, surgeons must consider anatomic location of the surgery, procedure type, and other related factors on a case-by case basis when deciding whether to continue or stop anticoagulation [1]. Where possible, surgeons should prioritise meticulous haemostasis over agent cessation [12].

Procedure and drug specific management below:

Anticoagulation Guidance: Local Anaesthetic Plastic Surgery

All Low to Moderate* Risk Procedures? Anticoagulation to continue as normal	
High^ Risk Procedure? Check patient medication below for peri-operative advice	
Medication	**Guidance**
Aspirin or **Clopidogrel**	Stop for 1-week prior procedure
Warfarin (Patient taking for AF/DVT/PE > 12 months)	Aim INR 2.0-2.5
Warfarin (Patient taking for CVA, MI, DVT, PE < 12 months)	Bridging protocol with LMWH - (Enoxaparin/ Dalteparin)
Dual Therapy Warfarin AND _____ **Aspirin / Clopidogrel / Ticagrelor / Prasugrel**	Warfarin- please see above 2nd agent - Continue as normal
Apixaban / Rivaroxaban / Dabigatran	Stop 1 day before

Low Risk Procedures*	Moderate Risk Procedures*	High Risk ProceduresΔ
Curettage	Excision and direct closure on non-compressible areas (neck, lip, genitals)	Secondary intention wounds on non-compressible areas
Punch biopsy	Wide excision and direct closure on trunk and limbs	Excision within the orbit (e.g. Eyelids)
Incisional biopsy – scar length <10cm	Secondary intention wounds on compressible sites	Where bone is involved
Excision and direct closure on trunk, limbs or compressible head and neck sites (Scar length <10cm)	Grafts on compressible sites (Split thickness graft donor sites)	Local flaps on head and neck with wide undermining (e.g. Forehead, periocular – especially orbital, cheek, large nose flaps, neck)
	Small local flaps (e.g. Rhomboid on nose or wedge helical rim advancement on ear)	Local interpolated flaps (e.g. Paramedian forehead flap)
		Wide excision and direct closure on non-compressible sites (e.g. neck)
		Grafts on non-compressible sites

Cardiac devices

No specific national guidance for clinicians performing cutaneous surgery in patients with cardiac rhythm devices exists, however the British Society for Dermatological Surgery (BSDS) & British Heart

Rhythm Society (BHRS) have a joint statement [14] and produced an algorithm [15].

Local Trust guidance is also available [16], but does not distinguish between cutaneous surgery and other, more invasive procedures. These guidelines differ slightly from the BSDS/BHRS.

- For all patients with cardiac rhythm devices, the type of device should be confirmed in clinic or at pre-assessment, along with the hospital where it is usually checked.

- For a standard pacemaker (PPM) under regular routine review, no additional pre- or post-op checks are usually required.

- If a patient has a defibrillator (ICD) then the patient will need pre-op check, deactivation before 'knife to skin' and immediate reactivation post-surgery.

- During surgery the patient should undergo standard monitoring with pulse oximeter. Bipolar diathermy should be used in short bursts and be kept to a minimum.

The above protocol is safe to adhere to, but we are trialling the use of thermocautery to replace the need for diathermy which would allow patients with PPM/ICDs to be operated without interference with their cardiac device.

The Trust protocol is below [16]:

Use Thermocautery device for patients with ICD/ Pacemaker if suitable.

Patient has cardiac device: **If thermocautery NOT available**, follow advice below			
Check peri-operative management below depending on cardiac device			
Cardiac Device	**Pre-op**	**Intra-op**	**Post-op**
Cardiac loop	**No Action required**		
Pacemaker 1.Patient up to date with routine follow - up? 2.Diathermy to be used on lower abdomen / lower limbs / arms distal to elbow?	If **Yes to both** – no action	Monitor during surgery to ensure no inhibition	No action unless adverse event
	If **No to either question** • EPR Request Pre-op • Check with Pacemaker dept. on day of surgery regarding awareness of surgery • Call again when patient in anaesthetic room • Cardiac physiologist will advise and document need for post op check		Post op check
ISC/SICD	EPR request to deactivate prior to surgery and for re-activation post-surgery		Device to be re-activated

Hypertension:

The British Hypertension Society (BHS) and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) have published a joint guideline for management of hypertension before elective surgery' in the journal *Anaesthesia (Hartle A, McCormack T, Carlisle J, et al. Anaesthesia, 2016; 71(3): 326–337)*

The actual evidence of an association between high blood pressure and perioperative complications is based on several old, small studies involving patients with severe hypertension. None of them showed any significant difference in postoperative complications or any evidence that reducing blood pressure helps. The concept that raised blood pressure is a risk factor for complications during anaesthesia has sparse evidence to support it.

The largest ever intervention study where beta-blockers were used to reduce blood pressure preoperatively suggested it did more harm than good. There is no evidence of harm in people with stage 1 or stage 2 hypertension, that is, people with a blood pressure less than 160 mmHg systolic or 100 mmHg diastolic. Despite this, hospital departments are reluctant to procced with elective surgery if the patient has a raised blood pressure, hence it is of paramount importance to recognise that stage 1 and stage 2 blood pressure rises have little impact on acute surgery outcomes. We ought to trust and rely on the measurements taken in primary care because that is where it is best done. The guidelines are:

- *secondary care should accept referrals that document blood pressures <160 mmHg systolic and <100 mmHg diastolic in the past 12 months; surgeons should ask GPs to supply primary care blood pressure readings from the last 12 months if they are undocumented in the referral letter*

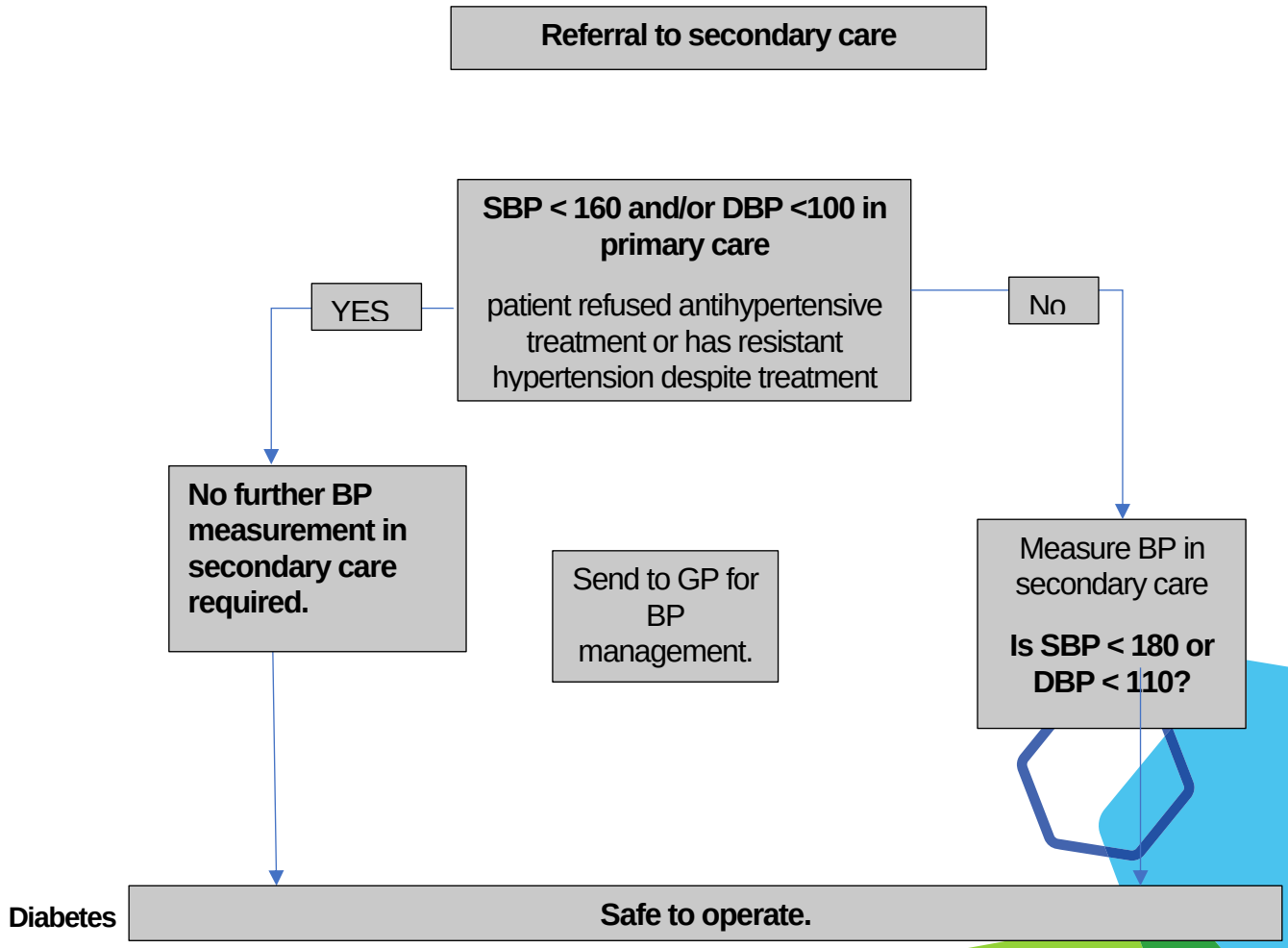
- *GPs should refer hypertensive patients for elective surgery after the blood pressure readings are <160 mmHg systolic and <100 mmHg diastolic. Patients may be referred for elective surgery if they remain hypertensive despite optimal antihypertensive treatment or if they decline antihypertensive treatment.*

- *elective surgery should proceed for patients who attend the preoperative assessment clinic without documentation of normotension in primary care if their blood pressure is <180 mmHg systolic and <110 mmHg diastolic when measured in clinic.*

The background for the above recommendations is as detailed below:

1. There is no evidence that perioperative blood pressure reduction affects rates of cardiovascular events beyond that expected in a month in primary care.
2. Blood pressure measurements might be more accurate in primary care than secondary care, due to a less stressful environment and a more practised technique.
3. The disparity between the blood pressure thresholds for primary care (160/100 mmHg) and secondary care (180/110 mmHg) allows for several factors.
4. Blood pressure reduction in primary care is based on good evidence that the rates of cardiovascular morbidity, stroke, are reduced over years and decades.

Flow chart to manage antihypertension in pre-op patient.



There is evidence that uncontrolled diabetes leads to an increased risk of perioperative wound problems and infection following plastic surgery procedures (REF PMID 28894673 & 27301370). However, these studies have been based on larger reconstructive cases requiring general anaesthesia, and there is little by the way of guidance for day case skin surgery under local anaesthetic.

The following has been compiled from national guidelines pertaining to the management of diabetes perioperatively. (REF Joint British Diabetes Society for Inpatient care. Management of adults with diabetes undergoing surgery and elective procedures: improving standards, March 2016).

Pre-operatively:

- Diabetic control should be optimised pre-operatively if it is safe to do so
    - Patients that have had a $HBA1_c$ within the last 3 months <69 mmol/mol (8.5%) require no further optimisation.
    - Patients requiring stabilisation should be referred to their GP or diabetes clinic.

Day of surgery:

- Patients should take all diabetic medications, including insulin, as normal prior to local anaesthetic procedures because they are not required to starve.
- Patients with diabetes should take priority on the list so that they do not miss their usual mealtimes.
- Recognition of the need for monitoring of glucose levels forms part of the WHO surgical safety checklist. Glucose levels should be checked hourly intra-operatively and in the perioperative period.

Acceptable perioperative blood glucose levels:

- 6-12 mmol/L is acceptable for those normally treated with insulin or sulphonylureas
- 3.5-12 mmol/L is acceptable in awake patients not taking these medications and providing they have not been given insulin to lower their blood glucose level.

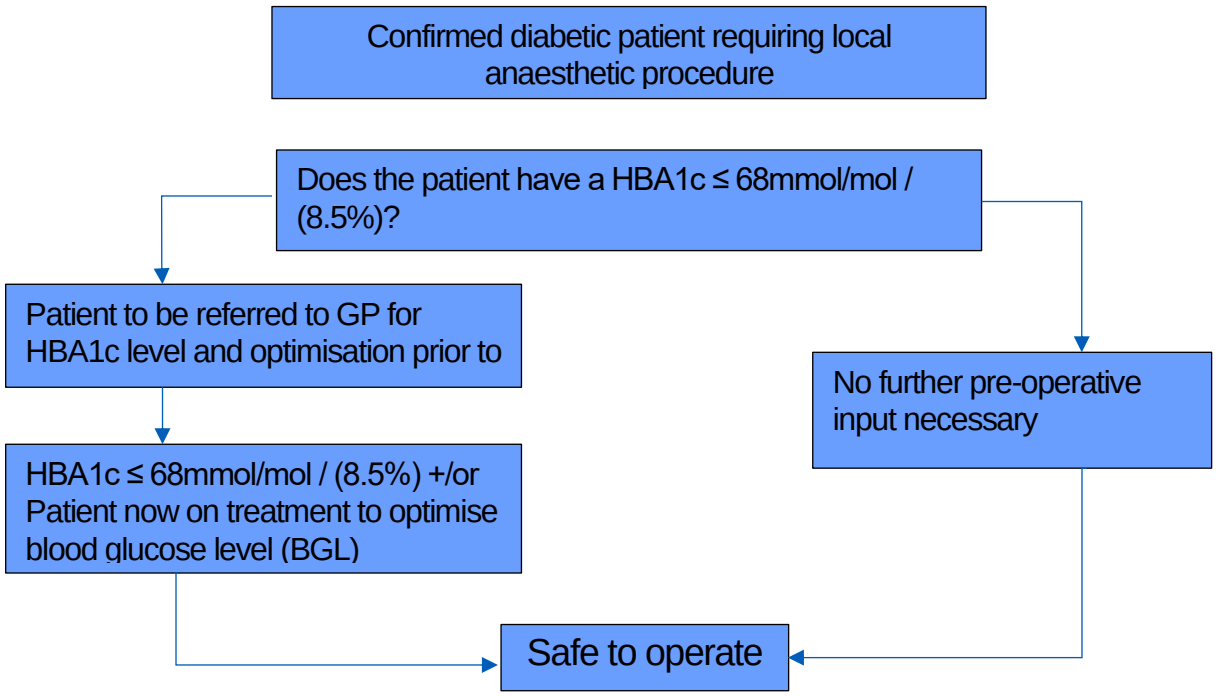
Management of hyperglycaemia / hypoglycaemia:

Discuss with diabetes specialist team. If the patient has not been previously optimised and it is safe to do so, consider postponing surgery until the patient's blood glucose is well controlled.

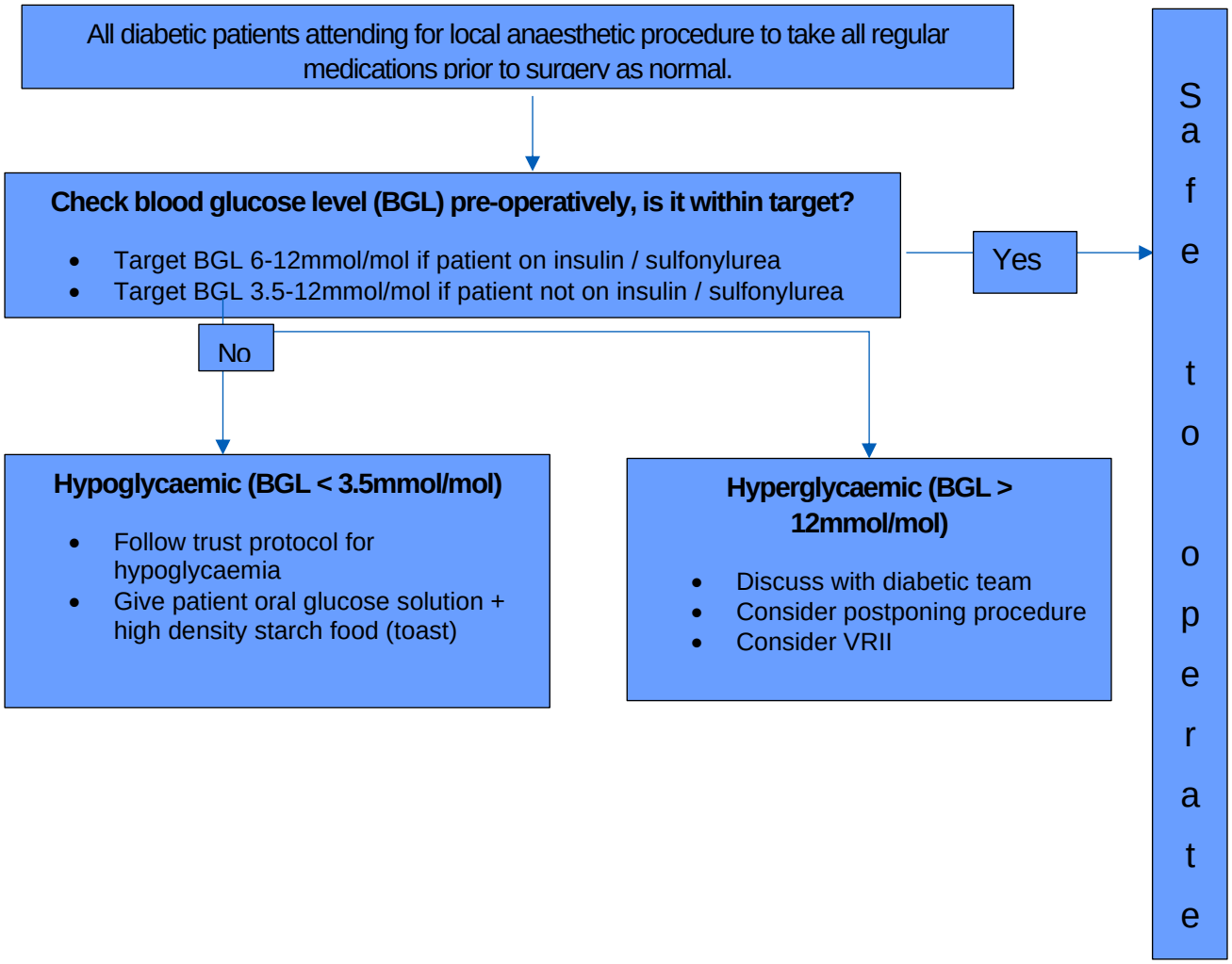
If patient is hypoglycaemic – follow trust protocol (glucose drink / toast)

If patient hyperglycaemic – Discuss with diabetic specialist team. ***Proceed with caution?***

FLOW CHARTS FOR PERI-OPERATIVE DIABETIC MANAGEMENT PREOPERATIVE CHART



DAY OF SURGERY CHART



All diabetic patients to have their BGL monitored hourly during procedure and in the post-operative period

Dementia/ lack of mental capacity Pathway

The Dementia pathway is designed to target dementia or lack of mental capacity related delay in management of skin cancer patients.

The Clinical decision-making should consider patient co-morbidities, the family or health care proxy's wishes, and the effect the tumour may have on the patient, as it grows.

This includes a geriatric assessment, prioritizing patient-based factors and efficiently differentiating fit from frail cancer patients.

Mental capacity assessment:

- **The MCA states that a person lacks capacity if they are unable to:**
  - ❑ understand the information relevant to the decision.
  - ❑ retain that information.
  - ❑ use or weigh up that information as part of the process of making the decision.
- *People can lack capacity to make some decisions but have capacity to make others.*
- *Mental capacity can also fluctuate with time – someone may lack capacity at one point in time but may be able to make the same decision at a later point in time.* [21-22]

The Mental Capacity Act (MCA) ***is designed to protect and empower people who may lack the mental capacity to make their own decisions about their care and treatment. It applies to people aged 16 and over.***

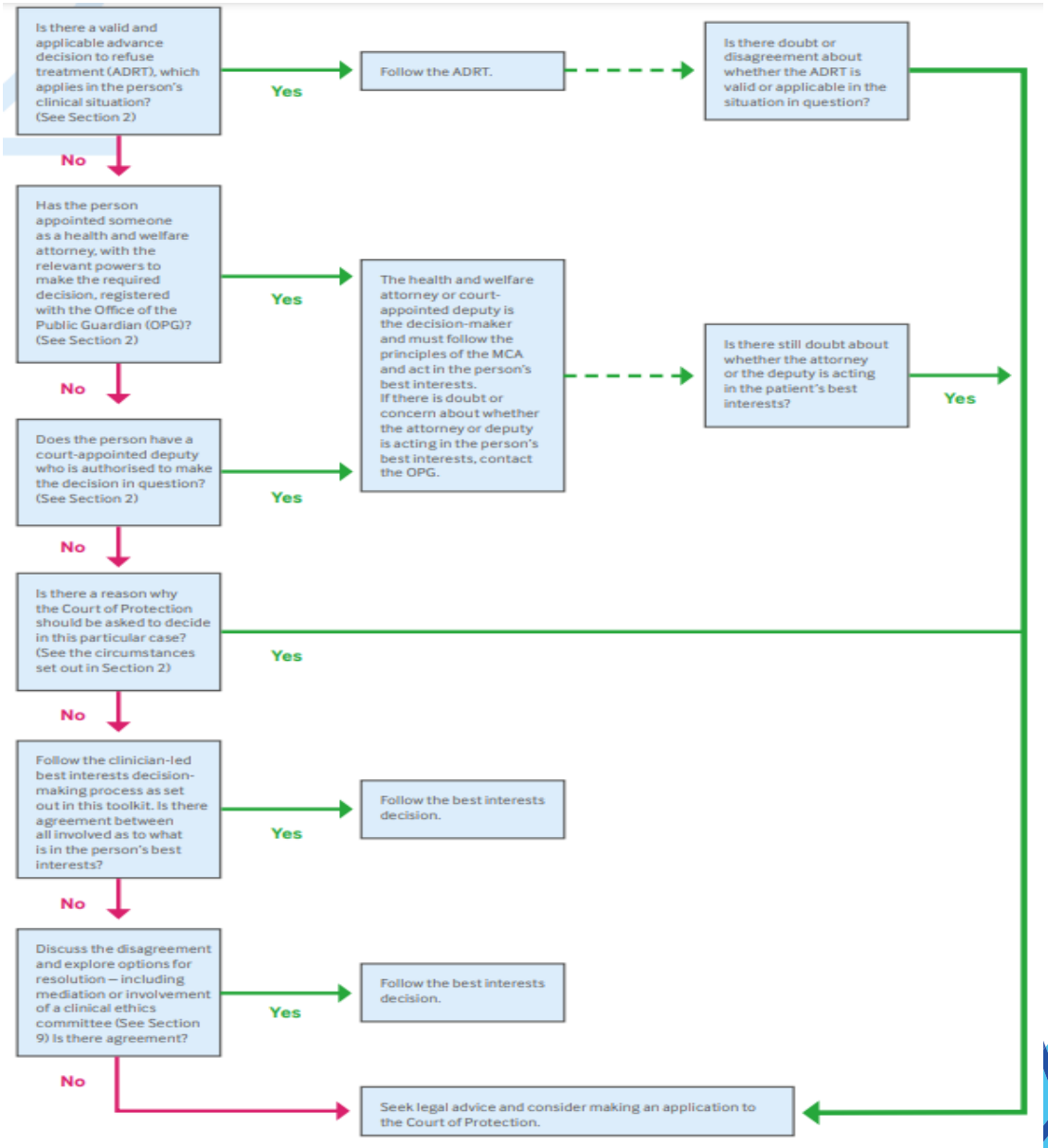
The MCA says:

- assume a person has the capacity to decide themselves, unless it's proved otherwise.
- wherever possible, help people to make their own decisions.
- if you decide for someone who does not have capacity, it must be in their best interests.
- treatment and care provided to someone who lacks capacity should be the least restrictive of their basic rights and freedoms. [21-22]

Professionals' duties under the Mental Capacity Act –

- The MCA allows people to express their **preferences** for care and treatment, and to **appoint** a trusted person to decide on their behalf should they lack capacity in the future.

- The Mental Capacity Act applies to all professions – doctors, nurses, social workers, occupational therapists, healthcare assistants, and support staff.
- These staff and their employers have a duty to ensure they know how to use it.
- Most trusts and local authorities will have a Mental Capacity Act lead who provides specialist advice on how the Act works. [21-22] [27]



Best interests meeting

- MCA states if someone lacks the capacity to decide and the decision needs to be made for them, *the decision must be made in their best interests.*
- There is no single definition of best interests. Instead, the Mental Capacity Act 2005 (MCA) sets out a checklist of factors to be considered when making a best interest's decision:
  - ✓ encourage participation – do whatever's possible to permit or encourage the person to take part.
  - ✓ identify all relevant circumstances – try to identify the things the individual lacking capacity would consider themselves.
  - ✓ find out the person's views – including their past and present wishes and feelings, and any beliefs or values.
  - ✓ avoid discrimination and bias.
  - ✓ assess whether the person might regain capacity – if they might, the decision to be postponed for a later date. [23] [25-26]

- Best interests' assessments are the responsibility of everyone involved in caring for the person.
- Decision-making should be multi-disciplinary and seek to involve and hear from all members of the care team who can contribute.
- Except for someone with a lasting power of attorney, or a court appointed deputy, the Mental Capacity Act 2005 (MCA) does not identify a particular individual as having legal responsibility for decision-making. Instead, it focuses on a collaborative approach to decision-making.
- Delays can be caused by no-one taking overall responsibility for decision making.
- It is therefore important to establish early on who the "decision maker" is, and to communicate this to those close to the person and everyone else involved in his or her care. [23] [25-26]

Best Interests Meeting Documentation

- A Best interest meeting (remote/F2F) with the patient, next of kin/legal power of attorney- and anyone else involved in the patient's care is arranged by the operational manager within 2 weeks of referral.
- The condition and treatment options are discussed, and the best interest meeting outcome is documented by the decision maker/ Consultant on the Electronic patient records (HIVE) under safeguarding module in Chart review.

Court of Protection

- The Court of Protection appoint deputies who oversees and take decisions on financial, and health and welfare matter if the person concerned lacks mental capacity to make their own decisions.
- The court also tries to resolve all disputes when the person's carer, healthcare worker or social worker disagree about what's in the person's best interests, or when the views of the attorney's conflict in relation to property and welfare.
- The court hears important cases, such as whether the NHS should withdraw treatment/ serious medical treatment decision is in a person's best interests, or whether it's in a person's best interests to be deprived of their liberty. [24]

Deprivation of Liberty (DoLS)

In certain cases, the restrictions placed upon a person who lacks capacity may amount to "deprivation of liberty". This must be judged on a case-by-case basis.

- Provider of care (usually a hospital or a care home) must apply to their local authority.
- LA will arrange assessment of the person's care and treatment to decide if the deprivation of liberty is in the best interests of the individual concerned.
- If it is, the local authority will grant a legal authorization.
- If it is not, the care and treatment package must be changed – otherwise, an unlawful deprivation of liberty will occur. This system is known as the *Deprivation of Liberty Safeguards.* [27]

Independent Mental Capacity Act (IMCA):

- The Mental Capacity Act 2005 introduced the role of the independent mental capacity advocate (IMCA) to support people when they are assessed to lack capacity to make a best interest decision and they do not have family or friends appropriate to consult about the decision.

- Responsible bodies, the NHS and Local Authorities all have a duty to make sure that IMCAs are available to represent people who lack capacity to make specific decisions, so staff affected will need to know when an IMCA must be involved. [21-22]

References

[1] C. Smith, D. Srivastava, R.I. Nijhawan, Optimizing Patient Safety in Dermatologic Surgery, Dermatol Clin. 37 (2019) 319–328. https://doi.org/10.1016/j.det.2019.02.006.

[2] M.R. Khalifeh, R.J. Redett, The management of patients on anticoagulants prior to cutaneous surgery: case report of a thromboembolic complication, review of the literature, and evidence-based recommendations, Plast. Reconstr. Surg. 118 (2006) 110e–117e. https://doi.org/10.1097/01.prs.0000221114.01290.85.

[3] M. Alam, L.H. Goldberg, Serious adverse vascular events associated with perioperative interruption of antiplatelet and anticoagulant therapy, Dermatol Surg. 28 (2002) 992–998; discussion 998. https://doi.org/10.1046/j.1524-4725.2002.02085.x.

[4] O. Kovich, C.C. Otley, Thrombotic complications related to discontinuation of warfarin and aspirin therapy perioperatively for cutaneous operation, J. Am. Acad. Dermatol. 48 (2003) 233–237. https://doi.org/10.1067/mjd.2003.47.

[5] J.P. Collet, G. Montalescot, B. Blanchet, M.L. Tanguy, J.L. Golmard, R. Choussat, F. Beygui, L. Payot, N. Vignolles, J.P. Metzger, D. Thomas, Impact of prior use or recent withdrawal of oral antiplatelet agents on acute coronary syndromes, Circulation. 110 (2004) 2361–2367. https://doi.org/10.1161/01.CIR.0000145171.89690.B4.

[6] BSDS Guidance on Antithrombotics and Skin Surgery, (2016). https://www.bsds.org.uk/uploads/pdfs/Resources/BSDS%20Guidance%20on%20Antithrombotics%20and%20Skin%20Surgery%2C%20August%202016.pdf (accessed June 11, 2020).

[7] M. Hasselgren, T. Runer, P. Janson, M. Ekström, Antithrombotic treatment and risk of complications after head and neck full thickness skin graft surgery, J Plast Surg Hand Surg. 52 (2018) 333–337. https://doi.org/10.1080/2000656X.2018.1498789.

[8] J. Alcalay, R. Alkalay, Controversies in perioperative management of blood thinners in dermatologic surgery: continue or discontinue?, Dermatol Surg. 30 (2004) 1091–1094; discussion 1094. https://doi.org/10.1111/j.1524-4725.2004.30333.x.

[9] J.S. Bordeaux, K.J. Martires, D. Goldberg, S.F. Pattee, P. Fu, M.E. Maloney, Prospective evaluation of dermatologic surgery complications including patients on multiple antiplatelet and anticoagulant medications, J. Am. Acad. Dermatol. 65 (2011) 576–583. https://doi.org/10.1016/j.jaad.2011.02.012.

[10] A. Nast, H. Ernst, S. Rosumeck, R. Erdmann, A. Jacobs, B. Sporbeck, Risk of complications due to anticoagulation during dermatosurgical procedures: a systematic review and meta-analysis, J Eur Acad Dermatol Venereol. 28 (2014) 1603–1609. https://doi.org/10.1111/jdv.12611.

[11] I. Palamaras, K. Semkova, Perioperative management of and recommendations for antithrombotic medications in dermatological surgery, Br. J. Dermatol. 172 (2015) 597–605. https://doi.org/10.1111/bjd.13362.

[12] A. Isted, L. Cooper, R.J. Colville, Bleeding on the cutting edge: A systematic review of anticoagulant and antiplatelet continuation in minor cutaneous surgery, Journal of Plastic, Reconstructive & Aesthetic Surgery. 71 (2018) 455–467. https://doi.org/10.1016/j.bjps.2017.11.024.

[13] H. Tehrani, Mersey Plastic Surgery Coagulation Guidance, (2019).

[14] BSDS BHRS Implanted Cardiac Devices Skin Surgery, (2017). https://www.bsds.org.uk/uploads/BSDS%20BHRS%20Implanted%20Cardiac%20Devices%20Skin%20Surgery%20Oct17.pdf.

[15] BSDS BHRS Cardiac Devices Protocol Flowchart V1.6, (2017). https://www.bsds.org.uk/uploads/Cardiac%20Devices%20Protocol%20Flowchart%20V1.6.pdf.

[16] B. Morris, A. Burt, SOP for device management for hospital procedures v2, (2019).

[17] R.J. Larson, J. Aylward, Evaluation and management of hypertension in the perioperative period of Mohs micrographic surgery: a review, Dermatol Surg. 40 (2014) 603–609. https://doi.org/10.1111/dsu.0000000000000012.

[18] S.J. Howell, J.W. Sear, P. Foëx, Hypertension, hypertensive heart disease and perioperative cardiac risk, Br J Anaesth. 92 (2004) 570–583. https://doi.org/10.1093/bja/aeh091.

[19] J. Wilde, D. Hauser, B. Leshin, Perioperative care of the surgical patient, Semin Cutan Med Surg. 23 (2004) 203–206. https://doi.org/10.1016/j.sder.2004.06.007.

[20] C.G. Bunick, S.Z. Aasi, Hemorrhagic complications in dermatologic surgery, Dermatol Ther. 24 (2011) 537–550. https://doi.org/10.1111/j.1529-8019.2012.01454.x.

[21] External links Mental Capacity Act 2005 – www.legislation.gov.uk/ukpga/2005/9/contents

[22] Mental Capacity Act Code of Practice – assets.publishing.service.gov.uk/ government/uploads/system/uploads/attachment data/file/497253/ Mental-capacity-act-code-of-practice.pdf

[23] Best interests decision-making for adults who lack capacity, A toolkit for doctors working in England and Wales https://www.bma.org.uk/media/1850/bma-best-interests-toolkit-2019.pdf

[24] Court of Protection – www.gov.uk/courts-tribunals/court-of-protection

Office of the Public Guardian – www.gov.uk/government/organisations/ office-of-the-public-guardian

[25] Social Care Institute for Excellence: www.scie.org.uk/mca 39 Essex Chambers – A brief guide to carrying out best interest's assessments. This resource is regularly updated and can be found at: www.39essex.com/ resources-and-training/mental-capacity-law/

[26] BABEL (Balancing best interests in healthcare ethics and law) – the interdisciplinary BABEL project explores healthcare decisions for individuals who are unable to make decisions for themselves, with a focus on the nature, purpose, and operation of the best interests' standard in decision-making: www.bristol.ac.uk/BABEL

[27] NICE guidance for decision-making and mental capacity (2018) – www.nice.org.uk/guidance/ng108 GMC guidance on mental capacity – www.gmc-uk.org/ethical-guidance/ ethical-hub/mental-capacity