BLMK Primary Care Prescribing Support Information for SGLT2 inhibitors in chronic kidney disease (CKD) in adults

Category	Sodium-glucose co-transporter 2 (SGLT2) inhibitors work by blocking the SGLT2 protein in the renal proximal convoluted tubule to reduce glucose reabsorption and increase urinary glucose and sodium excretion. Blocking this protein alleviates kidney damage by reducing pressure and inflammation in the kidneys independent of the glucose lowering effects.
Therapeutic indications	Dapagliflozin and empagliflozin are both SGLT2 inhibitors approved by the National Institute for Health and Care Excellence (NICE) for use in patients with CKD with or without type 2 diabetes (T2DM). Canagliflozin, another SGLT2 inhibitor, is an alternative option for CKD in patients with T2DM only in line with offer recommendations in NICE guideline NICE NG28. Locally, Dapagliflozin is now formulary approved first choice SGLT2 inhibitor.
Pharmaceutical form	• Dapagliflozin (5mg & 10mg) Tablets x 28 • Empagliflozin (10mg & 25mg) Tablets x 28 • Canagliflozin (100mg) tablets x 30 {alternative option for CKD with T2DM only}
NICE guidance	• Dapagliflozin for treating chronic kidney disease NICE TA1075 (replaces NICE TA775 on dapagliflozin for treating CKD) • Empagliflozin for treating chronic kidney disease NICE TA942 • NICE Guideline Type 2 diabetes in adults: management NICE NG28 • For NICE Guideline CKD: Assessment and Management seeNICE NG203
Initiation criteria	**Dapagliflozin** - *(formulary approved 1st Choice SGLT2 inhibitor)* NICE TA1075 recommends prescribing dapagliflozin as an option for treating chronic kidney disease (CKD) in adults, only if: • it is an add-on to optimised standard care including the highest tolerated licensed dose of angiotensin-converting enzyme (ACE) inhibitors or angiotensin-receptor blockers (ARBs), unless these are contraindicated, and • people have an estimated glomerular filtration rate (eGFR) of:

The following organisations contribute to and participate in the BLMK APC – Bedfordshire, Luton and Milton Keynes Integrated Care Board; Bedfordshire Hospitals NHS Foundation Trust; Cambridgeshire Community Services NHS Trust; Central and North West London NHS Foundation Trust; East London NHS Foundation Trust; Milton Keynes University Hospital NHS Foundation Trust

	– 20 ml/min/1.73m^2 to less than 45 ml/min/1.73m^2 or – 45 ml/min/1.73m^2 to 90 ml/min/1.73m^2 and either: • a urine albumin-to-creatinine ratio(uACR) of 22.6 mg/mmol or more, or • type 2 diabetes **Empagliflozin** {second line option to dapagliflozin for CKD} NICE TA942 recommends prescribing empagliflozin *(in the same population to dapagliflozin)* as an option for treating chronic kidney disease (CKD) in adults. **Canagliflozin** {alternative option for CKD with T2DM only} In line with product license with urine albumin-to-creatinine ratio (uACR) of 3 mg/mmol or more and eGFR 30-90 ml/min/1.73m².
Referral pathway	The nephrology team have proposed the following referral pathway: **Patients** with proteinuria who do not meet nephrology referral criteria based on NICE NG203 but meet the criteria set out in NICE TA1075 and NICE TA942, can have treatment initiated in primary care by GPs/clinicians. Choice of SGLT2 inhibitor will be dependent on local formulary choice, eGFR and product license. For patients who fall outside recommendations in the NICE TAs and /or have kidney conditions listed below*, initial discussion with nephrology will be via **Advice and Guidance**. The nephrologist can make recommendations for starting appropriate SGLT2 inhibitor to the primary care physician or convert the **Advice and Guidance** correspondence to an outpatient referral and see the patient in clinic if appropriate. Patients requiring referral to the nephrologists for specialist assessment will need to meet the criteria set out in NICE CKD guidance NICE NG203.
Dose	**Dapagliflozin -** The recommended dose of dapagliflozin for CKD in adults is 10 mg once daily (dose reduction to 5mg in severe liver impairment, increased if tolerated to 10 mg daily). **Empagliflozin -**The recommended dose of empagliflozin for CKD in adults is 10 mg once daily (Not in patients >85years or severe hepatic impairment). **Canagliflozin** {alternative option for CKD with T2DM only} - the recommended dose is 100 mg once daily, with eGFR ≥30 ml/min/1.73 m² (avoid in severe liver impairment).
Formulary designation	**GREEN –** Recommended for initiation in primary care for patients in line with NICE NG28, NICE TA1075 and NICE TA942 except those cases mentioned below under SpA initiation. Dapagliflozin is formulary approved first choice SGLT2 inhibitor.

	SpA - Nephrology specialists to advise (e.g., via **Advice and Guidance** prior to initiation in Primary Care for the following categories* (as there is no data from large randomised controlled trials for these cohorts) • Kidney transplant recipients • Polycystic kidney disease • Lupus nephritis • ANCA associated vasculitis. • Kidney disease where patient takes drugs which suppress the immune system
Special patient population	**Dapagliflozin -** no dose adjustment is required based on renal function. It is not recommended to initiate treatment with dapagliflozin in patients with an estimated glomerular filtration rate (eGFR) < 15 mL/min/1.73m^2 but if already taking, continue to eGFR 15 mL/min/1.73m^2, dialysis or transplantation (**Seek specialist advice**). Dose reduction to 5mg in severe liver impairment, increased if tolerated to 10 mg daily. **Empagliflozin** - In patients with an eGFR <60 ml/min/1.73 m^2 the daily dose of empagliflozin is 10 mg. Due to limited experience, it is not recommended to initiate treatment with empagliflozin in patients with an eGFR <20 ml/min/1.73m^2. (**Seek specialist advice**). Cautioned in patients >85 years old and severe hepatic impairment. **Canagliflozin** {alternative option for CKD with T2DM only}- not to be initiated in patients with an eGFR <30 ml/min/1.73 m^2 and avoid in severe hepatic impairment.
Monitoring	There is no requirement to check renal function following initiation of SGLT2 inhibitors. The advice is not to check for 4-6 weeks unless required for another clinical reason. Clinicians may wish to do an early clinical review to see whether there needs to be any reduction in antihypertensive (ACE inhibitors/ARBs) or diuretic medications in individuals at risk of hypovolaemia. A modest initial decline in eGFR that is hemodynamic in nature and reversible is characteristic of SGLT2 inhibitors and would generally not be an indication to discontinue therapy. For CKD patients, minimum frequency of renal function (creatinine, eGFR) monitoring checks should be based on a person's individual characteristics, risk of progression and whether a change in ACR is likely to lead to a change in management (NICE CKD guidance (NICE NG203) Renal Monitoring recommendations).
Cautions and Contraindications	SGLT2 inhibitors are contraindicated in the following: • Pregnancy or breastfeeding • Type 1 diabetes • Previous history of ketoacidosis See individual Summary of Product Characteristics (SPC) for full details. People with any of these kidney conditions* require nephrology specialist advice and guidance ***(People with these conditions were not included in clinical trials of SGLT2 inhibitors in CKD):*** • ***Kidney transplant recipients*** • ***Polycystic kidney disease*** • ***Lupus nephritis*** • ***ANCA associated vasculitis.***

	• ***Kidney disease where patient takes drugs which suppress the immune system.***
Adverse effects	**Important side effects and additional Patient Counselling:** ○ Increased urination and dehydration - caution in elderly as more prone to dehydration, postural hypotension, or falls. ○ Genital and urinary tract infection - **advise on increased risk of genital thrush and UTIs.** ○ Fournier's gangrene – rare infection in the genital or perineal area, area. Advise patient to seek immediate medical attention if experiencing symptoms. (**Add SNOMED code: *Education about Fournier's gangrene (1659441000000104)*)** ○ Peripheral vascular disease / foot ulcers: Advise patients to stop SGLT2i and seek review with primary care physician if they have an active foot problem (e.g., infected ulcer, circulation problems causing pain at rest or change in skin colour). ○ Allergic reactions including rash / urticaria / angioedema. ○ **An increase of acid in the blood** – ketoacidosis. This event occurs rarely in people without diabetes. Ketoacidosis requires urgent medical assessment (Diabetic ketoacidosis in patient with diabetes) - **discontinue immediately and DO NOT restart.** ○ **Sick day rules** – SGLT2 inhibitors should be temporarily withheld in the following situations: Stop during acute illness especially if too unwell to eat and drink. Stop 3 days prior to major surgery. Stop if patient develops volume depletion. Restart when fully recovered and eating and drinking normally. **Sick day rules counselling available on SystmOne via SGLT2 inhibitor Drug Review template.** ○ Advise patients not to start a very low carbohydrate diet or ketogenic diet without discussing with their health professional, because they may need to suspend the SGLT2 inhibitor treatment. Patient information leaflet developed by UK Kidney Association (UKKA) available for patients with no diabetes - Link
References	• SPC Dapagliflozin. • SPC Empagliflozin • SPC Canagliflozin • NICE Technology appraisal guidance (TA1075): Dapagliflozin for treating chronic kidney disease. Accessed 05/09/2025. • NICE Technology appraisal guidance (TA942): Empagliflozin for treating chronic kidney disease. Accessed 05/09/2025.

	• Type 2 diabetes in adults: management (nice.org.uk) Accessed 05/09/2025. • NICE NG203 Chronic kidney disease: assessment and management Accessed 05/09/2025. • UK Kidney Association: Getting the most from your SGLT2 inhibitor (for people without diabetes) Patient Information Sheet Accessed 05/09/2025