Algorithm for the Management of Type 2 Diabetes Mellitus

STEP-1
Lifestyle advice + Living with Diabetes + Metformin

If HbA1c>6.5% (48 mmol/mol) or individually agreed target after lifestyle advice

STEP-2			
If hypo risk a major issue consider the following, based on individual assessment of patient:			For non-obese younger patients consider
SGLT-2 inhibitors	DPP-4 inhibitors Suitable for elderly	Pioglitazone	Sulphonylureas
SGLT-2 inhibitors - do not initiate if eGFR <60			*Blood glucose monitoring required in view of hypoglycaemia risk* *If BMI <25kg/m^2 and osmotic symptoms – consider straight to insulin*

If HbA1c>7.5% (58 mmol/mol) or individually agreed target

	STEP-3		
Triple OHA Therapy	OHA + GLP-1RA*	OHA + insulin	OHA + GLP-1RA* + insulin
Metformin, SGLT-2i DPP-4i, sulphonylureas and pioglitazone in any triple combination (rarely 4 agent combinations can be used)	Metformin, SGLT-2i, sulphonylureas and pioglitazone in any combination with GLP-1RA	Metformin, SGLT-2i, DDP-4i and sulphonylurea in any combination with insulin	GLP-1RA + OHA (excluding DPP4-i and pioglitazone) + insulin

**If BMI ≥35kg/m^2 or ≥32kg/m^2 and If occupational issues or co-morbidities likely to benefit from weight loss*

OHA – oral hypoglycemic agents
SGLT-2i – SGLT-2 inhibitor
DPP4i – DPP-4 inhibitors
GLP-1RA – Glucagon like peptide -1 receptor agonist;

Metformin, Empagliflozin, Liraglutide and Semaglutide has shown to reduce cardiovascular risk

Preference of SGLT-2i – Empagliflozin, Canagliflozin, Dapagliflozin

Preference of DPP4i – Sitagliptin, Linagliptin, Alogliptin (unlicensed for monotherapy), Saxagliptin (for existing patients only)

Preference of GLP-1RA – Once daily - Liraglutide

Once weekly - Semaglutide, Dulaglutide

- Lixisenatide & Exenatide MR (for existing patients only)

First line insulin basal insulin – Humulin I, Insulatard or Insuman Basal

If initiating premixed insulin consider stopping sulphonylureas

Choosing agents for STEP-2

Assess the response of any new class of drug at 6 months – if there is no reduction of at least 0.5% in HbA1c in 6 months or if there any concerns regarding side effects stop the chosen medication and move to an alternative class or go to step 3.
Liaise/refer to specialist services before moving on to Step 3 if difficult to decide

Agents	Sulphonylurea	DPP-4 inhibitors	Pioglitazone	SGLT-2 inhibitors*
Positive reasons to use this class	• Low cost • Rapid clinical effect • Long established profile • Agent of choice in MODY	• Low hypoglycaemia risk • Weight neutral • License in patients with CKD with dose reduction • Fewer drug interactions	• Low hypoglycaemia risk • Reduces insulin resistance • Slower progression to insulin treatment compared with other agents	• Low hypoglycaemia risk • Weight loss
Reasons not to use this class	• Risk of hypoglycaemia (increased in CKD) • Need blood glucose monitoring which could incur a cost • Weight gain	• Relatively new class – unexpected long term side effects may yet to be recognised.	• Weight gain • Slow onset of action • Contraindicated in CCF, left ventricular dysfunction. • Risk of fractures (women) • Possible small increase in incidence of bladder cancer	• eGFR <45 • UTI, genital thrush • Relatively new class – unexpected long-term side effects yet to be recognised. • Active foot ulceration • Increased risk of ketosis especially if insulin deficient
Good choice for	• Better than metformin for patients with osmotic symptoms	• In patients whom further weight gain would cause of exacerbate significant problems associated with high body weight • Elderly patients • Any patients whom hypoglycaemia is a particular concern	• Most likely to benefit patients who wish to delay progression to insulin eg group 2 (LGV) and C1 licence holders	• Intolerant to DPP-4 inhibitors • In patients whom further weight gain would cause of exacerbate significant problems associated with high body weight • Patients whom hypoglycaemia is a particular concern

* Advise patients on SGLT-2i about the importance of routine preventative foot care and adequate hydration.

Consider stopping canagliflozin if patient develop foot complications such as infection, skin ulcers, osteomyelitis or gangrene.
Do not initiate gliflozins if eGFR < 60.
Stop glifozins if eGFR falls to <45 on treatment.
Reduce dose of canagliflozin and empagliflozin if eGFR falls to < 60.
Reduce dose of DPP4i in renal impairment.