ISSN 1948-9358 (online)

World Journal of *Diabetes*

World J Diabetes 2021 April 15; 12(4): 306-513

Published by Baishideng Publishing Group Inc

World Journal of Diabetes

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The primary aim of *World Journal of Diabetes* (*WJD*, *World J Diabetes*) is to provide scholars and readers from various fields of diabetes with a platform to publish high-quality basic and clinical research articles and communicate their research findings online.

WJD mainly publishes articles reporting research results and findings obtained in the field of diabetes and covering a wide range of topics including risk factors for diabetes, diabetes complications, experimental diabetes mellitus, type 1 diabetes mellitus, type 2 diabetes mellitus, gestational diabetes, diabetic angiopathies, diabetic cardiomyopathies, diabetic coma, diabetic ketoacidosis, diabetic nephropathies, diabetic neuropathies, Donohue syndrome, fetal macrosomia, and prediabetic state.

INDEXING/ABSTRACTING

The *WJD* is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Current Contents/Clinical Medicine, Journal Citation Reports/Science Edition, PubMed, and PubMed Central. The 2020 Edition of Journal Citation Reports® cites the 2019 impact factor (IF) for *WJD* as 3.247; IF without journal self cites: 3.222; Ranking: 70 among 143 journals in endocrinology and metabolism; and Quartile category: Q2.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Yu-Jie Ma*; **Production Department Director:** *Xiang Li*; **Editorial Office Director:** *Jia-Ping Yan*.

NAME OF JOURNAL
World Journal of Diabetes

ISSN
ISSN 1948-9358 (online)

LAUNCH DATE
June 15, 2010

FREQUENCY
Monthly

EDITORS-IN-CHIEF
Timothy Koch

EDITORIAL BOARD MEMBERS
https://www.wjgnet.com/1948-9358/editorialboard.htm

PUBLICATION DATE
April 15, 2021

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INSTRUCTIONS TO AUTHORS
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ONLINE SUBMISSION
https://www.f6publishing.com

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E-mail: bpgoffice@wjgnet.com https://www.wjgnet.com

World Journal of Diabetes

Submit a Manuscript: https://www.f6publishing.com

World J Diabetes 2021 April 15; 12(4): 407-419

DOI: 10.4239/wjd.v12.i4.407

ISSN 1948-9358 (online)

MINIREVIEWS

Alphabet strategy for diabetes care: A checklist approach in the time of COVID-19 and beyond

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Author contributions: Upreti R performed most of the writing, prepared the figures; Lee JD researched the data and in the early stage published it; Kotecha S and Patel V created the new version of the care plan; Patel V created the Alphabet Strategy for diabetes care, designed the outline and supervised the writing of this paper.

Conflict-of-interest statement: The author declares no conflict of interest.

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Abstract

Chronic disease management requires achievement of critical individualised targets to mitigate again long-term morbidity and premature mortality associated with diabetes mellitus. The responsibility for this lies with both the patient and health care professionals. Care plans have been introduced in many healthcare settings to provide a patient-centred approach that is both evidence-based to deliver positive clinical outcomes and allow individualised care. The Alphabet strategy (AS) for diabetes is based around such a care plan and has been evidenced to deliver high clinical standards in both well-resourced and under-resourced settings. Additional patient educational resources include special care plans for those people with diabetes undertaking fasting during Ramadan, Preconception Care, Prevention and Remission of Diabetes. The Strategy and Care Plan has facilitated evidence-based, cost-efficient multifactorial intervention with an improvement in the National Diabetes Audit targets for blood pressure, cholesterol levels and glycated haemoglobin. Many of these attainments were of the standard seen in intensively treated cohorts of key randomized controlled trials in diabetes care such as the Steno-2 and United Kingdom Prospective Diabetes Study. This is despite working in a relatively under-resourced service within the United Kingdom National Health Service. The AS for diabetes care is a useful tool to consider for planning care, education of people with diabetes and healthcare professional. During the time of the coronavirus disease 2019 pandemic the risk factors for the increased mortality observed have to be addressed aggressively. The AS has the potential to help with this aspiration.

Key Words: Alphabet strategy; COVID-19; Care planning; Chronic disease; Diabetes care; Multifactorial interventions; Patient care

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Manuscript source: Unsolicited manuscript

Specialty type: Endocrinology and metabolism

Country/Territory of origin: United Kingdom

Peer-review report's scientific quality classification

Grade A (Excellent): 0
Grade B (Very good): B
Grade C (Good): C
Grade D (Fair): 0
Grade E (Poor): 0

Received: October 10, 2020
Peer-review started: October 10, 2020
First decision: December 12, 2020
Revised: January 20, 2021
Accepted: March 22, 2021
Article in press: March 22, 2021
Published online: April 15, 2021

P-Reviewer: Fatima SS, Wan TT
S-Editor: Fan JR
L-Editor: A
P-Editor: Liu JH

Core Tip: The alphabet strategy for diabetes care is a very useful tool for the effective long-term management of patients with diabetes. It is based on; advice on lifestyle, blood pressure targets, cholesterol targets and chronic kidney disease prevention, diabetes control, eyecare, footcare, guardian drugs where indicated. This is achieved through an approach that is similar for both health care professionals (HCP) and patients. This is achieved through care planning, HCP guidelines and specialised care plans (for Ramadan, for example). It is an evidence based, patient centred, health care professional assisted, low-cost approach for treatment of diabetes and prevention of long-term diabetes complications.

Citation: Upreti R, Lee JD, Kotecha S, Patel V. Alphabet strategy for diabetes care: A checklist approach in the time of COVID-19 and beyond. *World J Diabetes* 2021; 12(4): 407-419
URL: https://www.wjgnet.com/1948-9358/full/v12/i4/407.htm
DOI: https://dx.doi.org/10.4239/wjd.v12.i4.407

INTRODUCTION

One of the major global public health burdens of this current era, with over 450 million people affected globally, is type 2 diabetes mellitus[1]. Advances in acute care have led to increased life expectancy for patients with diabetes through excellent emergency management of conditions such as acute coronary syndrome, stroke and sepsis. The challenge now is to effectively manage their chronic disease to reduce the other complications of diabetes[1]. This has become especially important as the coronavirus disease 2019 (COVID-19) pandemic continues to spread globally with diabetes mellitus being identified as a significant risk factor for mortality (increased risk: × 2.86 for type 1 diabetes, × 1.80 for type 2 diabetes)[2]. Additionally, poor glycaemic control, obesity, Black and South Asian ethnicities, and chronic kidney disease (CKD) were identified as significant risks for increased mortality in patients with diabetes and COVID-19[3].

A multifactorial approach for diabetes management to reduce complications is encouraged in the United Kingdom through the National Institute for Health and Care Excellence (NICE) guidelines, Scottish Intercollegiate Guidelines Network guidelines and the National Diabetes Audit (NDA). A recent report published by NDA showed that meeting all three treatment targets (glycated haemoglobin, blood pressure, statin prescription) was only achieved in 19.6% for type 1 diabetes and 40.5% for type 2 diabetes patients (In England)[4]. Our institutional average of meeting these targets was 46.5%. It also observed that the percentage of patients receiving NICE recommended care processes has not shown significant improvement from 2012 to 2019.

CONCEPT OF CARE PLANNING

"Care planning" involves the process by which both health care workers and patients have detailed discussions on the condition that the patient has. An individualized plan of management is then agreed based on the patient's personal values and aspirations for their life. The written document after this process of planning is the "Care plan"[5]. The action plan and interventions required to manage an acute condition are very different than what is required to manage a chronic condition. At the same time, all chronic conditions, may if they differ in the involvement of organs of human body, have a common set of problems which need to be addressed by patient, their families and health carers. This concept is motivated by the physical, psychological and social needs which arise due to the chronic conditions of the patients. Care planning may save the enormous expenditure on chronic diseases which usually runs in billions of pounds[6]. It is important to remember that in an average year of 8766 h, a patient with diabetes will only spend approximately 45 to 90 min with a health care professionals (HCP). This could be two to four appointments of 10-30 min each, rest of the 8764.5 h in the year the patient has to self-manage (personal data based on clinic survey).

Care planning is not only being implemented across different countries but also across different specialties. Though care planning can be distinguished in terms for the conditions or for the patients, in usual practice it is most often for a condition-specific

basis[5]. The care planning content can reflect the perspective of health professional or patient, the extent of the plan to which the behaviour change is intended, and the spread of the plan (*i.e.* involving only doctor-patient or involving doctor-patient-multidisciplinary teams/social teams)[7]. Care planning also involves behaviour change and subsequent other techniques to sustain those behaviour changes[8]. Care plans are considered to be one of the best tools for standardisation of care processes[5]. Prompts on electronic records such as those used in general practice in United Kingdom also serve this purpose.

Evidence for multi-factorial intervention

Rawshani *et al*[9] investigated the increased risk of cardiovascular events and mortality in type 2 diabetes patients in comparison to general population[9]. This study was conducted on 271174 patients with type 2 diabetes from the Swedish National Diabetes Register who were matched with 1355870 controls without diabetes. The strongest predictors for combined cardiovascular outcomes and death were- current smoking, blood pressure (BP) ≥ 140/80 mmHg, low-density lipoprotein ≥ 2.5 mmol/L, albuminuria (micro or macro), HbA_1c ≥ 53 mmol/mol. Each of these five factors increased the risk of acute myocardial infarction, stroke, heart failure and mortality in patients with diabetes. The more the number of these risk factors present in a patient with diabetes, the higher was the risk observed for both unfavourable cardiovascular outcomes and mortality in comparison to the control group. This study reflects that multifactorial intervention in patients with diabetes may strongly impact in not only decreasing the adverse cardiovascular outcomes, but also reducing the mortality in diabetic patients. In the cohort < 55 years of age, the results showed that the increased risk in those with none of these five risk factors *vs* those with all 5 of the risk factors was: (1) excess mortality × 4.99; (2) excess myocardial infarction × 11.35; (3) excess stroke × 7.69; and (4) excess heart failure × 7.69.

Similar results were obtained from the follow-up Steno-2 study which recruited 160 patients with type 2 diabetes with microalbuminuria[10,11]. There were two randomized groups- one group receiving conventional multifactorial treatment and other group receiving intensified target driven therapy (targets included HbA_1c, fasting serum total cholesterol and triglyceride levels, systolic and diastolic BP). At the start of the initial trial both groups were similar at baseline but developed significant differences by the end, showing that the intensive therapy was better than conventional therapy in attaining the set targets. In the follow up trial, both groups had received the intensive therapy and the gap of differences was observed to be narrowed by the end of the follow-up trial. The conclusions from the entire trial suggested that there is an absolute risk reduction (ARR) of 20% for death from any cause and an ARR of 29% for cardiovascular events in the intensive therapy group. Moreover, progression of diabetic complications was significantly reduced in the intensive therapy group.

The checklist approach for patient management has been rewarding in other specialties as well. Haynes *et al*[12] used a two-step surgical checklist in eight hospitals eight cities in different geographical parts of the world[12]. Their intervention with the checklist showed marked improvements in outcomes as reduction of major surgical complications and rate of death.

The alphabet strategy for diabetes

Our innovation in diabetes care was the "Alphabet strategy" (AS), which aimed for "simple things to be done right all the time"[13]. It is a mnemonic based checklist incorporating the core diabetes care components[14]; and includes the following (Figure 1): (1) advice on lifestyle: Diet, weight, and physical activity optimisation, not smoking, safe alcohol use, appropriate infection control [and very specifically *vs* severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)], nationally advised vaccinations (such as against influenza, SARS-CoV-2, pneumococcus); (2) BP: < 140/80 mmHg, ≤ 130/80 mmHg if kidneys or eyes affected or any cardiovascular disease; (3) cholesterol and CKD prevention: Total cholesterol ≤ 4 mmol/L, screening for and treating microalbuminuria; (4) diabetes control: HbA_1c ≤ 58 mmol/mol or an individualised target, avoiding hypoglycaemia and hyperglycaemia interventions (for example diabetes ketoacidosis). Individualised glucose monitoring plans; (5) eye examination: check yearly at least, with referral if indicated; (6) foot care: Daily inspection and examination by patient and yearly examination by HCP; and (7) guardian drugs: Aspirin, clopidogrel and angiotensin converting enzyme inhibitors or angiotensin receptor blockers as indicated for primary and secondary preventions of cardiovascular and renal diseases.

The first version of the AS was published in 2002[14]. Since then the clinical guidance and Care Plans have been updated yearly. The strategy has proven to be adaptable

Figure 1 Alphabet Strategy poster for clinics.

and it has been relatively straight forward to adapt it to even the COVID-19 pandemic. Because of the curtailment in services during the COVID-19 pandemic we have incorporated an H for Healthcare Professional advice as follows.

Healthcare Professional advice: Especially for problems such as recurrent hypoglycaemia, recurrent diabetic keto-acidosis, difficulty accessing care (including affordability), Ramadan advice, pre-conception advice, driving and occupational advice, remission of diabetes.

The clinical impact of AS was assessed by two audits done in outpatient settings of a district level hospital in United Kingdom. The first audit involved 420 patients with diabetes who were followed over 5 years. The second audit, performed 2 years after the completion of the first audit, involved 1071 patients with diabetes. Comparison of the outcomes of the two audits showed improvement in all AS components (Table 1). An audit conducted in a low-income country (India), with 100 patients with diabetes in an outpatient clinic, also demonstrated the effectiveness of AS (Table 2).

The potential of AS was globally assessed by a survey carried out in the Global AS Implementation Audit. It involved 4537 patients from 52 centres across 32 countries. The data showed that the strategy was highly acceptable to both patients and their healthcare professionals in high, middle and lower income countries.

This new care plan was developed with the National Health Service (NHS) England and NHS Improvement West Midlands our Region Diabetes Expert Advisory Group, Right Care, and the Pharmacy Local Professional Network Chair (Figure 2).

The AS core training materials (slides, documents and videos) have been created to facilitate and disseminate the programme. The training pack distributed to individual patient groups such as Diabetes United Kingdom (Figure 3) consists of:

Patient education posters: Educate the patients about the AS overall. There is a similar poster for diabetes care for specifically during Ramadan developed with the South Asian Health Foundation (Figure 4).

Patient care plans: Empowering to know their NDA target and improve self-efficacy in attaining these. It also guides the important steps for pregnant patients to reduce complications (maternal and foetal). The main components of the care plan are as follows: (1) background information: Personal targets based on NDA, Diabetes United Kingdom 15 Healthcare Essentials, Key contacts; (2) patient's agenda: Tick section for patients to indicate points for discussion, Questions to reflect on health status and specific goals; (3) patient's personal agenda: Aspects of care to be documented such as BP, Cholesterol, Creatinine and Urine Albumin Creatinine Ratio, HbA_1c, eye screening, feet examination, guardian drugs; (4) drugs and glucose monitoring: The HCP should advice on the dosing, frequency and side effects of any new drugs started for the patient. Advice for the patient on monitoring of blood glucose with an appropriate Glucose Testing Meter including frequency of monitoring. Patient should have Community Pharmacist review also where available; and (5) contact details: There is a list of the important contact details for the key specialists/organizations related to diabetic patient management.

One page guideline: Summary of one-page current NICE guidelines in relation to diabetes care (Figure 1) to achieve higher rates of NDA attainment and facilitate multifactorial interventions. This includes sections on Diabetes Prevention and Diabetes Remission.

Referral guidelines: Diabetes Expert Advisory group advice has been incorporated on who to refer and who not to refer (Figure 5). Clear guidelines are given by Red Amber Green on whom to refer to the specialist diabetes team from primary care and secondary care. Such advice, if implemented, has the potential to reduce hospital admissions and reduce costly complications such as amputation and end-stage renal disease.

Glucose monitoring advice and choice of meter: This has the potential to save £1.74 million in our region if all Clinical Commissioning Groups (CCGs) merely adopted current practice similar to the best performing CCG. Enhancement on top of this can save £6.3 million *per* year (NHS England and NHS Improvement-West Midlands). Our region has already saved £ 960000 in 12 mo.

Drug optimisation advice: Data from our region shows that adopting best practice across the region would save £1.65 million on one class of diabetes drugs alone, example dipeptidyl peptidase-4 inhibitors (NHS England and NHS Improvement-West Midlands modelling data).

Prevention of diabetes advice: There is 86% chance of remission in selected newly diagnosed patients. Data for this comes from the DiRECT Study[15].

Achieving diabetes care excellence through primary care team programme: This is a low cost (£25) basic e-learning platform that covers all the main aspects of diabetes care and care planning using the AS. It is hosted by Coventry University Health Sciences Faculty. It is also incorporated into Sound Doctor's Diabetes Education Program for patients, which is Quality Institute for Self-Management Education and Training approved.

Outcomes from the AS

Improvement in process measures: Implementation of the AS for Diabetes Care resulted in a significant ($P < 0.05$) improvement including lipid measurement, BP,

Table 1 Comparison of achievement of alphabet strategy components between practices of evidence-based medicine audits[10]

Alphabet strategy		Baseline audit, *n* = 420	Follow-up audit, *n* = 1071	*P* value
A	Smoking status (%)	15.5	14.7	0.83
B	Blood pressure (mmHg)	141/77	136/76	0.007
C	Total cholesterol (mmol/L)	4.9	4.5	< 0.001
	LDL cholesterol (mmol/L)	2.5	2.4	< 0.001
	Creatinine (mmol/L)	109	105	0.036
D	HbA1c (%) (mmol/mol)	8.3 (67.2)	7.9 (62.8)	0.09
E	Eye examination (%)	95.5	97.1	0.72
F	Foot examination (%)	83.5	97.3	< 0.001
G	Aspirin (%)	83.5	88.0	0.20
	ACEI/ARB (%)	73.0	74.4	0.75
	Lipid lowering (%)	55.0	73.4	< 0.001

Follow-up audit was done 2 years later. ACEI: Angiotensin converting enzyme inhibitors; ARB: Angiotensin receptor blockers; LDL: Low-density lipoprotein.

Table 2 Change in care process performance following implementation of the alphabet strategy in a low-resource diabetes clinic[10]

		Pre implementation (%)	Post implementation (%)	*P* value
A	Body mass index	99	99	NS
	Smoking status	99	99	NS
	Smoking cessation	100	100	NS
B	Blood pressure	99	99	NS
C	Total cholesterol	60	99	< 0.001
	Lipid profile	10	64	< 0.001
	Creatinine	5	49	< 0.001
	Proteinuria	48	93	< 0.001
D	Fasting and postprandial glucose	41	97	< 0.001
E	Eye examination	98	100	NS
F	Feet examination	95	100	NS
G	Aspirin therapy	6	71	< 0.001
	ACEI/ARB therapy	7	57	< 0.001
	Statin therapy	5	38	< 0.001
	All three	2	20	< 0.001

NS: Not significant; ACEI: Angiotensin converting enzyme inhibitors; ARB: Angiotensin receptor blockers.

HbA_1c, eye and foot examinations. Using the parameters from NDA, this strategy showed 100% performance of seven of the NICE recommended processes[16]. Our unit scored above average in six out of the seven categories for target care process achievement.

Improvement in outcome measures: The improvement rates (Table 1) were comparable to standards achieved in clinical trial setting specifically researching intensive treatment strategies like Steno-2 and The United Kingdom Prospective Diabetes Study.

Patient and health care professional satisfaction: An audit conducted in 27 countries

Diabetes NICE Clinical Guidelines 2021: Locally Adapted Guidelines
Diabetes Care: the Alphabet Strategy Approach

Advice on Lifestyle:

General

- **Smoking cessation, physical activity, diet, weight control (5-10% loss/year if overweight). Details below**
- **Structured education:** especially self-management, beliefs, knowledge, skills, driving, occupation
- **Regular follow-up with Care Planning. Annual Review is essential.** 20% with early severe complications will be persistent Diabetes Clinic non-attenders. Ramadan advice. Advise Diabetes UK membership.

Diabetes Prevention Lifestyle (PH 38) and for diagnosed Diabetes

- **Physical Activity:** choose activities that are enjoyed and fit into daily lives. At least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more, eg: 30 mins./ 5 days a week. Or 75 mins. vigorous intensity activity across the week or combinations of moderate and vigorous intensity activity. Also resistance physical activity to improve muscle strength at least two days a week. Minimise being sedentary (sitting)
- **Weight management:** encourage overweight and obese people to gradually reduce calorie intake. Explain 5–10% weight loss in 1 year is realistic initial target. Use evidence-based behaviour-change techniques. Motivate and support to achieve and maintain – a healthy BMI. General population, 18.5-24.9 kg/m^2, South Asian or Chinese descent, 18.5 and 22.9 kg/m^2. Orlistat an option (as below).
- **Dietary advice:** Advise the right amount of calories for the level of activity (daily usually: men 2,500 cals., women 2,000 cals). Most adult/some children have too many calories from carbs. Ensure protein intake adequate. **Satiety: protein > fat > carbs.** Ensure ≥ 3 fruit & veg/day. Cut down on saturated fat (eg butter, cheese, cakes, sausages) to < 30g men, 20g women. Cut down on sugars. Salt < 6g/day. Carbs: more complex. Don't confuse thirst with hunger. Smaller regular meals. Don't skip breakfast.
- **Metformin :** HbA1c rising despite participation intensive lifestyle program **or** unable to participate. Particularly if BMI > 35. Explain long-term lifestyle change can be more effective than drugs in preventing or delaying T2DM. Continue lifestyle advice. Check renal function before Rx, then x2 yearly or more. Start low dose (eg 500 mg od), increase to 1500–2000 mg daily. If intolerant, consider metformin MR. Prescribe for 6–12 months. Monitor HbA1c or fasting plasma glucose at 3-month intervals and stop the drug if no effect.
- **Orlistat:** Use clinical judgement on whether to offer orlistat if BMI ≥ 28.0 kg/m^2 for obesity. Discuss benefits & side effects. Advise low-fat diet (<30% daily energy as fat, over 3 main meals). Review use after 12 weeks. If weight loss not at least 5%, ?stop Rx. Use orlistat for > 12 months, only after discussing benefits & side-effects

Diabetes Remission Protocol (DIRECT Study):

- **If diabetes duration < 6 yrs:** 830 cal diet for around 12 weeks (calories from: protein 26%, fat 13%, carbs 61%). Then 400 cal. meals introduced. Vitamins and minerals replete. Off all anti-diabetic and anti-hypertensive Rx. Optimal Physical Activity advised (ideally 15000 steps per day). Relapse with weight gain treated.
- **86% chance of remission at 1 year if ≥15kg weight loss. 57% remission if 10-15kg weight loss.**

Blood pressure: *National Diabetes Audit target < 140/80, ≤ 130/80 if kidney, eye or any CVD*

- **Step 1.** Age < 55 yrs: **A** (ACEI or ARB). ≥ 55 yrs or African-Caribbean **C** (Ca^{2+} blocker) **or D** (indapamide)
- **Step 2. A + D or A +C** : **Step 3. A + C + D**
- **Step 4. Add** K^+ sparing diuretic (e.g. spironolactone) or α-blocker (doxazosin) or β-blocker (eg bisoprolol)

Cholesterol: *NDA < 5mmol/l, NICE > 40% reduction in non-HDL Chol. Secondary Prevention*

Primary Prevention: Type 1 DM:

- **Atorvastatin 20mg od if >40years or duration > 10 years or established nephropathy or other CVD risk factors**

Primary Prevention: Type 2 DM: Atorvastatin 20mg od if ≥ 10% 10 year CVD risk on **QRISK 2**

Secondary Prevention (all): Atorvastatin 80mg od. CVD (MI, angina, stroke, TIA, PVD). Initiate lower dose Atorvastatin if older, low muscle mass, impaired renal function or patient preference

CKD Patients:

- **Atorvastatin 20mg. If > 40% reduction in non-HDL cholesterol not achieved, increase dose. Agree use of high-dose statin with renal specialist if eGFR <**

Other Rx: Ezetimibe 10mg and/or Fenofibrate 160mg/200mg may be useful in statin intolerance to reach targets. Hydrophilic Pravastatin and Rosuvastatin less side-effects (simvastatin side-effect profile increased with amlodipine, diltiazem, verapamil, > 250ml of grapefruit juice daily). Bempedoic acid and PSCK9-i: specialist advice.

CKD Prevention: Micro Alb: ACEI, or ARB. Ramipril 10mg daily daily data shows stroke reduction, MACE reduction and mortality reduction by 24%. **Proteinuria**: 20-28% reduction death/ESRD (losartan 100mg od), also SGLT2i.

Diabetes control: Individually-agreed targets. *NDA HbA1c ≤ 58mmol/mol (≤7.5%)* ***individualized***

- **Type 2 Initial Rx:** Lifestyle (optimal diet, optimal weight, physical activity), Metformin 500mg bd, 850mg bd, 1000mg bd (usual doses). Contraindicated if creat. > 150 umol/l or eGFR < 30 ml/min. Consider B12 check
- **Type 2 First Intensification: Individualise to pt: If non-obese** SU eg: gliclazide start low dose eg 40mg od then titrate eg 80 mg bd, 160 mg bd max- note hypo risk. **If obese:** SGLT-2i (weight loss). If CKD adjust dose if needed. DDP-4i (weight neutral), Pioglitazone or GLP-1RA sc also options. **Consider Insulin** if ketones high, losing weight, marked symptoms & glucose > 15 mmol/l or very high HbA1c (>86 mmol/mol)
- **Type 2 Second Intensification: Individualise to pt:** Use appropriate 3rd line agent from above choices
- **Type 2 Third Intensification: Individualise to pt:** Appropriate agent from above ? insulin ? GLP-agonist sc
  - **Insulin regimes:** NPH, glargine, levemir, degludec, toujeo overnight, biphasic bd, basal bolus regimes.
  - **GLP- agonists: once-weekly Semaglutide or Dulaglutide. Avoid Semaglutide in those with any grade above background retinopathy if on insulin and poor glycaemic control.** Consider instead of insulin or TZD especially if BMI ≥ 30 if problems with ↑ weight, occupation issues, insulin unacceptable or weight loss would benefit co-morbidities
- **New Type 2 Guidelines: EASD/ADA guidance:** If clinical CVD: SGLT-2i or GLP-1RA with proven CV benefit is recommended. If CKD, Clinical heart failure or High CVD risk CVD, a SGLT-2i inhibitor with proven benefit is recommended. GLP-1RA are generally recommended as first injectable Rx.
- **Type 1:** Insulin essential to life. Use suitable regime usual basal bolus, premix bd in some patients. Classic symptoms may not be present eg: ketones high, losing weight, marked symptoms with hyperglycaemia > 15 mmol/l. Aim no/minimal hypoglycaemia. DKA avoidance. Safe Driving advice. Consider flash monitoring, CGMS, Pump therapies as per guidelines. **NB: Metformin is insulin sparing in obese Type 1 . Dapagliflozin licensed in Type 1 DM for improving glycaemic control. Watch out for rare euglycaemic DKA – sick day rules esssential.**

Eye screening: Screening for and effective management of Diabetic Retinopathy.

- BP and Glycaemic Control essential.
- Screen annually using a digital retinal camera. Aspirin/ACE-I/ARB in most patients with retinopathy. Consider fenofibrate.- some evidence of reduced need for laser Rx is diagnosed retinopathy. Several national unit use it for maculopathy (FIELD Study reduction in retinal laser and other outcomes by 34%)

Feet screening: Foot care advice and Annual review essential by GP, Practice Nurse or podiatrist.

- All risk factors to be controlled aggressively.
- Inspection, pedal pulses, 10g MF testing. If neuropathic or ischaemic, foot-care advice and regular podiatry review essential to prevent ulceration/amputation. Ulcers: refer urgently to MDT Foot At Risk Team.
- In the FIELD Study there was a 36% reduction in amputation using fenofibrate 160mg od. ? consider in individual cases with previous amputation?

Guardian drugs:

- **Aspirin 75mg od when BP <150 systolic**: in any atheromatous CVD. Clopidogrel 75 mg if further atheroma events on aspirin or aspirin intolerance.
- **ACEI reduce complications.** ***Ramipril 10mg od consider for most diabetes pts*** *(Best Evidence in T2DM)*
- **ARB:** Microalbuminuria (Best evidence: Irbesartan 300mg od) also if ACE not tolerated. Proteinuria to retard progression to death and ESRD (Best evidence: losartan 100mg od)

NHS England (West Midlands) Diabetes Expert Advisory Group c/o vinod.patel@warwick.ac.uk

NB: No statins, No ACE-Is, No ARBs in Pre-conception or Pregnant, 15% Foetal malformation. Pre-conception Care Essential (Folate 5mg od, Vit D 400 IU) Aim HbA1c% ≤ 7.5% = 58mmol/mol

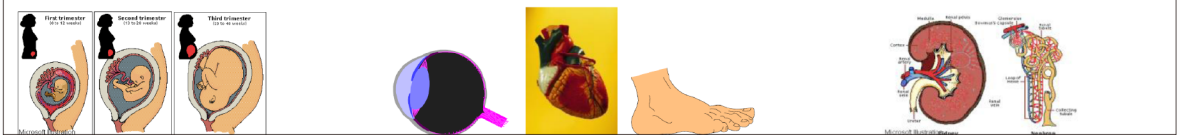


Figure 2 New care plan was developed with the National Health Service England and National Health Service improvement west midlands our region diabetes expert advisory group, right care, and the pharmacy local professional network.

(44 Diabetes service units) showed that 91% of respondent felt that the strategy would have a positive influence on diabetes care and that it would be practical to implement, even in a non-high income country (Table 2)[13].

A

- **Your diabetes** should not prevent you living a normal, healthy life. This Care Plan using the Alphabet Approach can help you.
- **Personalised Targets:** You should work towards achieving these for BP, Cholesterol and Diabetes control. National targets have been advised by Diabetes UK.
- **Diabetes UK advises 15 Healthcare Essential Standards** These can be discussed at your consultation.
  - **Specialist team to provide long term care**
  - **Safe driving and work-related advice**
  - **High-quality care if admitted to hospital**
  - **Specialist care if planning to have a baby**
  - **Opportunity to discuss any sexual problems**
  - **Access to psychological support if needed**
- **Diabetes Complications:** the risk of these can be reduced by achieving your targets. All Diabetes Complications can be reduced: **heart disease, strokes, amputation, blindness, kidney disease and hospital admissions for complications.** And a good outcome for mother and baby in pregnancy
- **Coronavirus Pandemic-Watch for symptoms:** Persistent cough, fever, change in taste or smell. Good Infection Control: esp. handwashing, distancing, face coverings,

Key Contact	How can they help	Contact Details
GP Practice Nurse	Management and Co-ordination of Care	
Pharmacist	Help with medicines	
Podiatrist	Foot care	
Dentist	Oral care	
Dietitian	Diet	
Diabetes UK	Support / Info	
Eye Screening	Annual screening	
Hospital Team	Specialist Care	

B **My current health and wellbeing**

Things I would like to discuss or have help with – please tick

Smoking	Weight	Diet
Physical Activity	Blood Pressure	Cholesterol control
Diabetes Control	Eye Care	Foot Care
Driving	Travel	Sexual Health
Pregnancy		Medications
Mental Health ? depression		What to do when ill?
Other:		

Any questions I have?

What is good or has improved about my health?

Concerns I have about my current health and wellbeing

MY GOALS: To improve my health & wellbeing I want to be able to?

To achieve them I will need to do the following?

How important are they to me?

Not important 1 2 3 4 5 6 7 8 9 10 *Important*

How long will this take?

C Date:	Your target	Result 1	Result 2	National Targets
Advice on Lifestyle: •Weight and Body Mass Index:	Kg BMI	1	1	≤25
•Stop smoking: if you smoke		2	2	Non smoker
•Diet and Physical activity		3	3	Within 12 mths diagnosis
Blood Pressure: • **Yearly check:** High BP can cause heart disease, stroke, eye and kidney disease	Reading	4	4	140/80 or less
Cholesterol and CKD Prevention • **High cholesterol** can cause heart disease, stroke and poor circulation the legs with risk of amputation	Cholesterol	5	5	Less than 5 mmol/l
• **CKD: Chronic Kidney Disease** Prevention -Yearly kidney tests (Creatinine and UACR)	Creatinine UACR	6	6	Kidney tests yearly
Diabetes Control: • **HbA1c test:** measures the amount of glucose sticking to your blood in the last 2 months • **Hypo avoidance:** essential to avoid low glucose levels of less than 4 • **Driving:** Remember to check before driving: glucose 5 or more to drive	HbA1C Avoid Hypos	7	7	HbA1c 58 mmol/mol or less (7.5%)
Eyes: • It is important that your eyes are examined yearly. Treatment may be needed to stop blindness	Date last Check	8	8	Annual check
Footcare: • Examine your feet daily: check for heat (infection), ulcers, numbness, circulation. Yearly HCP examination.	Date last Check	9	9	Daily and annual check
Guardian Drugs / Flu jab • Take your medications as advised. Many are essential to avoid heart and kidney disease.		10	10	? taken regularly
Overall Comment:				

D **Main Diabetes medication:**	**What is it for**	**Additional information**
Include dose	*lower blood glucose*	*How to take, side effects*
Insulin Treatment	**Usual dose**	**Additional information**
name		
Blood glucose testing	Yes ◯	No ◯
Type of meter		
How often should you test		

Your Notes and Advice from Pharmacist, GP, Practice Nurse, Hospital
New medication started _____ Please see pharmacist

Figure 3 The alphabet strategy care plan. A: Introduction and contacts; B: Personal concerns and goals; C: National diabetes audit data and individualised target; D: Drugs and pharmacist reviews.

Treatment Changes during Ramadan

- As you know some treatments will need adjusting, for example, some drugs need changing as you cannot drink fluids as normal.
- We would advise you to change your treatment as below
- **Please go back to your normal times and doses after Ramadan**

Current Treatment	Ramadan
	Sehri (morning)
	Iftari (evening)

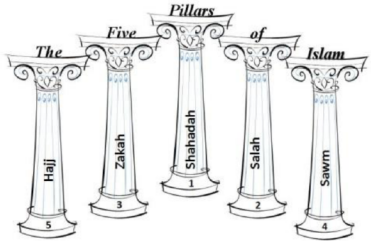
For further details contact

Diabetes Nurses: 024-76865210
Multi-Lingual Co-Worker: 024-76865595

Parveen Deen and Amitha Gopinath 2012

Ramadan and Diabetes

Fasting safely during the Holy month of Ramadan



General Advice

- The Diabetes Care Team would like to help you Fast safely during Ramadan. We provide Ramadan diabetes advice in the local community and also at the hospital.
- Over-eating during Ramadan and Eid can increase your blood sugars and make you put on weight.
- Fasting allows you to abstain from smoking; Ramadan is a good time to stop smoking!
- Eat 5 portions of fruit and vegetables a day
- Ramadan is a good time to make small lifestyle changes. These changes will help you to have good control of your diabetes and reduce chance of a heart attack or stroke

Diet

- When you open your Fast limit the amount of sweet foods such as dates, milkshakes, jelabi and burfi.
- At **Sehri** and **Iftari** time eat more starchy foods, such as basmati rice, chapatti, brown bread and cereals.
- Eat more fruit, vegetables, dhal and low fat yoghurts.
- All drinks should be sugar-free, avoid adding sugar to tea and coffee. Limit the amount of salt you add to food.
- To avoid dehydration make sure you drink plenty of water before starting the Fast.
- When you break your Fast, try not to have too many fried foods such as samosas, paratha and pakoras!

Medication

- During Ramadan it is very important to keep taking your regular tablets. Some tablets will need adjusting.
- Your tablets will keep your blood glucose in control and keep you feeling well.
- If you decide to Fast and you are on insulin, you will need to be very careful, your insulin dose will need to change. Do not stop your insulin.
- **For further advice contact the diabetes team at the hospital or your own GP.**

Diabetes Control

- Check your blood glucose regularly, it should be between 4 – 7
- When your blood glucose drops below 4, you may be at risk of having a hypo. You may feel weakness, sweating, trembling, tingling in the lips and fingers and slurred speech. If this happens then you must take 2-3 glucose tablets followed by a snack.

Figure 4 Ramadan advice leaflets. This includes a table to state what change in medication may be needed during Ramadan.

CONCLUSION

In United Kingdom, care planning for all patients with chronic diseases has been proposed as an agreed action plan which is best reflected by the slogan–"no decisions about me without me"[17]. The 15 diabetes healthcare essentials introduced for the diabetes patients not only help in better management outcomes, but also help prevent serious future complications due to the disease[18]. One of the parts of the Year of Care programme for diabetes tested the "house of care" concept, which involves care and support planning at its core surrounded and supported by all the teams, tools and management plans[19]. The AS helps deliver these aspirations. The strategy is also compatible with helping implement other key national guidelines and recent changes in clinical practice[15,20-22].

AS for diabetes care is intended to improve the confidence of the person with diabetes to self-manage their condition with the aspirations and the constraints of the life they lead. We are confident that it has the great potential to reduce the morbidity and mortality due to diabetes in these most difficult of times internationally due to the COVID-19 pandemic.

All our resources are available electronically, gratis, on request. These resources are available to adapt to local clinical practice as HCP and patients see fit.

Diabetes Care Referral Criteria: COVID-19 Times

In all cases referral depends on expertise of Primary Care. In many cases, discussion will ensue with a secondary care colleague or the Community Diabetes Specialist Nurse. Format is similar to that adopted by the "Think Glucose" Campaign and the Portsmouth "Super 6" Service Model*

Primary care	In-patient care
Early Referral	**Early Referral**
(1) Inpatient diabetes* • To optimise control and safe/early discharge **(2) Foot diabetes (predefined criteria)*** • Foot Ulceration, Charcot, infection **(3) Type 1 DM, all adolescents*** • All new Type 1 Diabetes patients **(4) Insulin Pump services*** • Insulin Pump Care • New Therapies eg GLP-injectables + insulin **(5) Low eGFR/renal dialysis*** • Creatinine > 150 umol/l or CKD 3 • Proteinuria: UACR ≥ 30mg/mmol • Optimise risk factors then renal referral **(6) Antenatal diabetes*** • Any diabetes patient or Gestational DM • Pre-conception Care: asap much neglected **Other Possible Criteria:** • All patients pre Surgery with HbA1c% > 8.5% (72mmol/mol) • Individualised "Poorly controlled" : ○ HbA1c% > 9% (75 mmol/mol) ○ BP > 140/90 ○ T: Chol > 5 mmol/l or LDL > 3) • DM Acute CHD or Stroke (last 3 months) • Severe hypoglycaemia (episode requiring 3rd party assistance or HCP help) • Retinopathy requiring laser Rx or grade ≥3	• Hyperglycaemia: glucose > 12 on treatment, in pregnancy if glucose > 5.5 pre-meals and >7.7 after meals • DKA/Hyperglycaemic Hyperosmolar state • Severe hypoglycaemia • Admission for urgent/ major elective surgery • Acute coronary syndrome or Sepsis or Severe Vomiting or Impaired consciousness • Unable to self manage • Previous diabetes problem as inpatient • IV insulin infusion glucose outside limits • IV insulin for over 48 hrs • Parenteral or enteral nutrition • Foot ulceration • Newly diagnosed type 1 or type 2 diabetes • Pancreatitis in DM pt • Patient request • Gestational Diabetes (or pre-existing DM) **Gestational diabetes (GDM)** is detected by OGTT, usually at 24-28 wks. If previous GDM, OGTT carried out at 16-18 wks, followed by repeat OGTT at 28 wks if first test normal. GDM is any one of these values on OGTT or fasting: • Fasting or base-line: ≥ 5.1 mmol/l • 1 hour value: ≥ 10 mmol/l • 2 hour value: ≥ 8.5 mmol/l
Referral May Be Required	**Referral May Be Required**
• **Diabetes Care Education:** Desmond, GERTIE (Type 1 Education Programme) • **Neuropathy:** GI tract, hypotension, ED • **Diabetic "Arthritis"** eg Carpal Tunnel Syn. • **Isolated nerve palsy:** 3rd Nerve, foot drop • **PCOS** with or without Diabetes • **Obesity management:** DM with BMI > 35 • **Secondary DM:** eg steroid use, acromegaly, psychoses Rx, pancreatitis • **Low level of concordance with care** • **Pre- Ramadan advice**	• IV insulin infusion with good glucose control • Nil By Mouth more than 24hrs post-surgery • Significant educational need • Persistent hyperglycaemia • Possible Type 2 diabetes diagnosis • Stress hyperglycaemia • Poor wound healing • Steroid therapy • Pancreatitis • Discharge planning: if change in treatment needs facilitating
Referral Not Normally Required	**Referral Not Normally Required**
• Stable Diabetes care: consider Tele-health consultation • Impaired Glucose Tolerance, Impaired Fasting Glucose • New Diagnosis of type 2 Diabetes	Minor, self-treated hypoglycaemia Transient hyperglycaemia Basic educational need or routine dietetic advice Well controlled diabetes Good self-management skills, Routine care

Figure 5 Diabetes care referral criteria.

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