Pharmacist Update – July 2017

In our last newsletter we said that we would be working on helping to develop the clinical pharmacists 'core skills'.

We realise that practices have individual needs because of different list sizes and variable skill-mixes within existing practice teams.

To try and address this we wanted to offer practices a range of clinics provided by the pharmacists which practices can choose from according to their need.

The first three protocols are now agreed and all of our pharmacists can provide the following:

- Hypertension clinics – they will be able to see patients from diagnosis onwards or see and up-titrate medication in patients who already have a diagnosis of essential hypertension but are not adequately controlled.
- Primary prevention lipid clinics – for those patients with a Qrisk score >10 who need lifestyle advice and may want to consider starting a statin.
- Vitamin D deficiency clinic – for those diagnosed with Vitamin D deficiency who need to start on Vitamin D replacement/maintenance therapy.

The protocols for these different clinics are attached.

If you feel that your practice is not already providing these services via the clinical pharmacists and you would like to start please discuss this further with your pharmacist.

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Title:	Management of Vitamin D deficiency in Adults (18 years+)
Author:	Tanya Aubeeluck and Jill Grinsted
Authorised:	Dr. Nick Hughes
Status:	Approved
Date:	July 2017
Review date:	July 2018
Review period:	Annual
Version	1.0
Scope	This guidance relates to clinical pharmacist led management of vitamin D deficiency in adult patients who have been diagnosed as vitamin D deficient and whose GP has referred them for treatment.

Reviewed by	**Date**

Aim

The aim of this clinic is to provide adult patients with the appropriate treatment and / or lifestyle advice to treat vitamin D deficiency. Pregnant women and children are excluded from treatment under this protocol.

Step	Directions	Additional Information
1.	Explain the reason for the appointment	
2.	Check there is an up to date serum 25-hydroxyvitamin D (25OHD). • 25OHD <30nmol/L = Deficient • 25OHD 30-50nmol/L = may be inadequate in some people • 25OHD >50nmol/L = Sufficient[1] Check that GP has indicated that patient is for vitamin D treatment	The latest serum 25-hydroxyvitamin D (25OHD). level must be within 1 month
3.	Check active problems listed on patient's EMIS record to confirm that patient does not have tuberculosis or active sarcoidosis.	Hypercalcaemia has been reported during vitamin D treatment in these patient groups. Specialist advice should be sought before starting vitamin D treatment in these patient groups.
4.	Choose the right vitamin D preparation for the person.	Vitamin D_2 is recommended for strict vegans as it is derived from plant sources.[3] There are also vitamin D preparations suitable for people with peanut or soya allergy and people with halal or kosher requirements.
5.	For vitamin D deficient patients where rapid correction of vitamin D is required e.g. symptomatic patients or patients about to start treatment with a potent anti-resorptive agent (e.g. zoledronate or denosumab): Add **loading dose** of vitamin D 300 000IU **total dose** over 6 – 10 weeks to acute medication list e.g. colecalciferol 20,000 units capsules TWO per week for 7 weeks OR colecalciferol 50,000 units oral solution ONCE weekly for 6 weeks OR Colecalciferol 3,200 units capsules ONE daily for 12 weeks. **Maintenance treatment** – start when loading treatment completed. Give	Promote OTC preparations where possible. Regime should be based on the most cost effective preparation. The following are included in the North East Hampshire and Farnham CCG preferred list: Colecalciferol capsules 800units, 3200units, 20000units. Stexerol was agreed at Frimley Health Area Prescribing Committee June 2017 Vitamin D 1000units tablets/capsules can be purchased OTC for less than 9p a day which is considerably cheaper than prescription charge

	lifestyle advice and recommend OTC supplement containing at least 400 units vitamin D daily. May use clinical discretion and add maintenance dose of 800 – 1000 units daily to repeat medication for institutionalised or housebound patients with ongoing risk of deficiency after treatment.[6] Higher doses of up to 2000 units may be used for certain groups of people e.g. those with malabsorption disorders.[3] Add to repeat medication list or document if patient to purchase OTC	
6.	For vitamin D deficient patients where correction of vitamin D deficiency is less urgent: Colecalciferol 800 units capsules ONE daily for up to 12 weeks. Add to acute medication or document if patient to purchase OTC[6] **Maintenance treatment** – start when loading treatment completed. Give lifestyle advice and recommend OTC supplement containing at least 400 units vitamin D daily. May use clinical discretion and add maintenance dose of 800 – 1000 units daily to repeat medication for institutionalised or housebound patients with ongoing risk of deficiency after treatment.[6] Higher doses of up to 2000 units may be used for certain groups of people e.g. those with malabsorption disorders.[3] Add to repeat medication list or document if patient to purchase OTC	Promote OTC preparations where possible. Regime should be based on the most cost effective preparation. Colecalciferol capsules 800units are included in the North East Hampshire and Farnham CCG preferred list Stexerol was agreed at Frimley Health Area Prescribing Committee June 2017 Vitamin D 1000units tablets/capsules can be purchased OTC for less than 9p a day which is considerably cheaper than prescription
7.	Check serum calcium one month after starting vitamin D supplementation. If calcium level is raised stop vitamin D until this has been investigated by GP.	This is a check to see if primary hyperparathyroidism has been unmasked
8.	Routine monitoring of 250H vitamin D levels is unnecessary but may be appropriate 12 weeks following commencement of treatment in patients who are still symptomatic, have malabsorption (e.g. Crohn's disease) or	

	where poor concordance is suspected. Patients who do not respond after 12 weeks of treatment should be referred back to the GP	
9.	For patients with inadequate vitamin D levels offer lifestyle advice (see appendix 1) and advise to purchase OTC colecalciferol at a dose of 1000 to 2000u daily. Remember to take dietary needs into consideration i.e. vegan, vegetarian, halal etc.	Consider use of British Dietetic Association leaflet Food Fact Sheet on Vitamin D. https://www.bda.uk.com/foodfacts/VitaminD.pdf
10.	Record consultation on EMIS and arrange any necessary monitoring or follow up.	

References

1. Vitamin D and Bone Health: A Practical Clinical Guideline for Patient Management (2013) National Osteoporosis Society. Available at https://www.nos.org.uk Date accessed 14th June 2017
2. How to get Vitamin D from sunlight (2015) National Health Services Choices. Available at http://www.nhs.uk/Livewell/Summerhealth/Pages/vitamin-D-sunlight.aspx. Date accessed 14th June 2017
3. Vitamin D deficiency in adults – treatment and prevention. Available at https://cks.nice.org.uk/vitamin-d-deficiency-in-adults-treatment-and-prevention Date accessed 15th June 2017.
4. Food Fact Sheet – Vitamin D. The Association of UK Dieticians. August 2016 Available at www.bda.uk.com Date accessed 15th June 2017
5. Vitamin D and Health. Scientific Advisory Committee on Nutrition 2016 Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/537616/SACN_Vitamin_D_and_Health_report.pdf Date accessed 15th June 2017
6. Prevention, Investigation and Treatment of Vitamin D Deficiency and Insufficiency in Adults. Surrey (East Surrey CCG, Guildford & Waverley CCG, North West Surrey CCG, Surrey Downs CCG & Surrey Heath), Crawley CCG and Horsham & Mid-Sussex CCG. Feb 2017. Available at pad.res360.net Date accessed 15th June 2017

Appendix 1 – Lifestyle Advice [2,3,4]

The following should be discussed with the patient during the consultation:

Safe Sun Exposure:

- Exposing commonly uncovered areas of the skin (such as the forearms and hand) for short periods when in strong sunlight provides vitamin D.
- From late March/early April to the end of September around 20-30 minutes of sunlight exposure in the middle of the day for 2-3 times a week can be sufficient to maintain healthy vitamin D levels. People with dark skin, such as those from African, Caribbean or Asian origin may need to spend longer in the sun to reach adequate vitamin D production than someone of a lighter skin tone.
- Need to weigh up the benefit with the risks (increased risk of skin cancers with prolonged exposure without adequate protection).
- Winter Sun: Sun exposure in the UK is not adequate to produce vitamin D from the months of October to March, so a diet rich in Vitamin D sources is important.

Diet:

- Remember to take dietary needs into consideration i.e. vegan, vegetarian, halal etc.
- It may be difficult to obtain sufficient vitamin D from food sources alone.
- Oily fish (sardines, herring, salmon, pilchards, trout and mackerel) contain reasonable amounts of Vitamin D.
- Egg yolk, meat, offal and milk contain small amounts of vitamin D but this can vary depending on the season.
- Some breakfast cereals, fat spreads and some yoghurts are 'fortified' with small amounts of vitamin D.

Supplementation:

- All adults should consider taking a daily supplement containing 10 microgram (400u) of Vitamin D especially during autumn and winter[5]

Title:	Primary Prevention Lipid Modification Clinic
Author:	Jo Chater
Authorised:	Dr. Nick Hughes
Status:	Approved
Date:	July 2017
Review date:	July 2018
Review period:	Annual
Version	1.0
Scope	This guidance relates to clinical pharmacist led primary prevention lipid clinic for adult patients who have a QRISK2 score of above 10% and whose GP has referred them for treatment.

Reviewed by	**Date**

Scope:
This clinic has been designed for patients who have a known QRISK2 score of above 10% and would benefit from taking a statin as primary prevention of cardiovascular disease (CVD). Patients will be referred for lipid management by their GP or post their NHS Health Check.
This protocol excludes secondary prevention and those unsuitable for assessment with the QRISK2 tool.

Aim:
The aim of this clinic is to assess and discuss with patients their risk of developing CVD. Patients between the ages of 40 and 74 years are invited to attend a Health Check Programme offered by the NHS. As part of this programme their CVD risk will be assessed, this is done using QRISK2 tool.
People who have an estimated risk score using the QRISK2 tool of over 10% should be offered pharmacological intervention for lipid modification alongside lifestyle modification to reduce their risk. Statins are the class of medication that should be offered to this group of people as first line therapy.
It is important to make patients aware that there are also many factors in their lifestyle that can be adapted in order to prevent the development of CVD. These include, smoking cessation, reducing alcohol consumption, maintaining a healthy weight, increasing exercise and following a healthy diet.[1] For more detailed information on these lifestyle changes see Appendix 1 and NICE clinical guideline CG181.

Step	Directions	Additional info.
1	Load patient record on EMIS and open a consultation	

	Explain the reason for the appointment.	
2	Check there are up-to-date baseline bloods: full lipid profile, HbA1c, renal profile, TSH, LFT and BMI[1] Ensure smoking status, alcohol consumption and BP are recorded	The latest cholesterol reading must be within 1 year
3	Run QRISK2 if it is above 10% a statin is indicated	Run as template on EMIS Do not use for: - patients over 84 y/o - patients with CKD, eGFR below 60 and/or albuminuria - Patients with T1DM
4	If appropriate ask the patient if they are pregnant or trying to conceive	If the answer is yes a statin must not be initiated at this time and the reasons explained.
5	Be aware if patient mentions persistent muscle pain and ask the nature of this pain.	Advise patient to book a blood test to check CK
6	If statin is indicated, counsel the patient on statin use, benefits and disadvantages. Document this discussion.	Use patient decision aids e.g. https://www.nice.org.uk/guidance/cg181/resources/patient-decision-aid-243780159 Use NNT (see appendix 2) https://www.qrisk.org/2016/ can be used as a numerical and visual way to present absolute risk for each individual
7	If the patient agrees to commence statin therapy document this and add a statin to their repeat prescription adding the indication in the dosage directions e.g. "to reduce cholesterol"	First choice: Atorvastatin 20mg daily Remind women that statins are contraindicated in pregnancy and document this advice in the consultation notes
8	Inform patient that after 3 months they must book a blood test to measure total lipids and LFTs [1]	Should be aiming for a 40% decrease in non-HDL cholesterol[3]

	LFTs must also be checked at 12months[1]	
9	Provide lifestyle modification tips to reduce CVD risk. Advise on Smoking, Alcohol, Exercise, Diet (see Appendix 1)	Refer as appropriate e.g. Quit 4Life, exercise on prescription, Weight Watchers
10	Advise to arrange follow up 3-month blood test and appointment if cholesterol not sufficiently reduced. Blood tests to be reviewed by a GP	If the blood test reveals a sufficient reduction of cholesterol the patient will continue on this dose.
11	At follow up if the cholesterol has not been reduced sufficiently discuss adherence, optimisation of diet and lifestyle measures and consider dose increase	If dose is increased return to point 9

Documentation and coding

Code the problem as Primary Prevention of Cardiovascular Disease (6c2). When recording the consultation in the patient's records ensure you include all relevant information including: risk assessment, discussion on benefits and disadvantages, the patient's decision, information provided on lifestyle modification, advice on contraindication in pregnancy and breastfeeding. The following codes can be used as appropriate

8I3c – Statin Declined
8B61 – Statin Prophylaxis
8I27- Statin Contraindicated
8B3IC – Offer of Statin therapy
8I63 – Statin not indicated
8I76 – Statin not tolerated

References

1. NICE clinical guideline CG181, Cardiovascular Disease: Risk Assessment and Reduction, Including Lipid Modification. https://www.nice.org.uk/guidance/CG181/chapter/1-Recommendations#lifestyle-modifications-for-the-primary-and-secondary-prevention-of-cvd accessed on 19/3/17

Appendix 1

Cardioprotective diet (taken from accessed via Nice Clinical Guideline CG181 Cardiovascular disease: risk assessment and reduction, including lipid modification **https://www.nice.org.uk/guidance/cg181/chapter/1-recommendations on 15/05/2017)**

1.2.1 Advise people at high risk of or with CVD to eat a diet in which total fat intake is 30% or less of total energy intake, saturated fats are 7% or less of total energy intake, intake of dietary cholesterol is less than 300 mg/day and where possible saturated fats are replaced by mono-unsaturated and polyunsaturated fats. Further information and advice can be found at NHS Choices. **[new 2014]**

1.2.2 Advise people at high risk of or with CVD to:

- reduce their saturated fat intake.
- increase their mono-unsaturated fat intake with olive oil, rapeseed oil or spreads based on these oils and to use them in food preparation.

  Further information and advice on healthy cooking methods can be found at NHS Choices. **[new 2014]**

1.2.3 Advise people at high risk of or with CVD to do all of the following:

- choose wholegrain varieties of starchy food
- reduce their intake of sugar and food products containing refined sugars including fructose
- eat at least 5 portions of fruit and vegetables per day
- eat at least 2 portions of fish per week, including a portion of oily fish
- eat at least 4 to 5 portions of unsalted nuts, seeds and legumes per week.

  Further information and advice can be found at NHS Choices. **[new 2014]**

1.2.4 Advise pregnant women to limit their oily fish to no more than 2 portions per week and to avoid marlin, shark and swordfish. Further information and advice on oily fish consumption can be found at NHS Choices. **[new 2014]**

1.2.5 Take account of a person's individual circumstances – for example, drug therapy, comorbidities and other lifestyle modifications when giving dietary advice. **[new 2014]**

1.2.6 Advise and support people at high risk of or with CVD to achieve a healthy diet in line with behaviour change: the principles for effective interventions (NICE guideline PH6). **[new 2014]**

Physical activity

1.2.7 Advise people at high risk of or with CVD to do the following every week:

- at least 150 minutes of moderate intensity aerobic activity **or**
- 75 minutes of vigorous intensity aerobic activity or a mix of moderate and vigorous aerobic activity in line with national guidance for the general population (see Physical activity guidelines for adults at NHS Choices). **[2008, amended 2014]**

1.2.8 Advise people to do muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders and arms) in line with national guidance for the general population (see Physical activity guidelines for adults at NHS Choices). **[new 2014]**

1.2.9 Encourage people who are unable to perform moderate-intensity physical activity because of comorbidity, medical conditions or personal circumstances to exercise at their maximum safe capacity. **[2008, amended 2014]**

1.2.10 Advice about physical activity should take into account the person's needs, preferences and circumstances. Agree goals and provide the person with written information about the benefits of activity and local opportunities to be active, in line with four commonly used methods to increase physical activity (NICE guideline PH2). **[2008]**

Combined interventions (diet and physical activity)

1.2.11 Give advice on diet and physical activity in line with national recommendations (see NHS Choices). **[2008]**

Weight management

1.2.12 Offer people at high risk of or with CVD who are overweight or obese appropriate advice and support to work towards achieving and maintaining a healthy weight, in line with obesity (NICE guideline CG43). **[2008]**

Alcohol consumption

1.2.13 Be aware that men should not regularly drink more than 3–4 units a day and women should not regularly drink more than 2–3 units a day. People should avoid binge drinking. Further information can be found at NHS Choices. **[2008]**

Smoking cessation

1.2.14 Advise all people who smoke to stop, in line with smoking cessation services (NICE guideline PH10). **[2008]**

1.2.15 Offer people who want to stop smoking support and advice, and referral to an intensive support service (for example, the NHS Stop Smoking Services). **[2008]**

1.2.16 If a person is unable or unwilling to accept a referral to an intensive support service, offer them pharmacotherapy in line with smoking cessation services (NICE guideline PH10) and varenicline for smoking cessation (NICE technology appraisal guidance 123). **[2008]**

Plant stanols and sterols

1.2.17 Do not advise any of the following to take plant stanols or sterols for the prevention of CVD:

- people who are being treated for primary prevention
- people who are being treated for secondary prevention
- people with CKD
- people with type 1 diabetes
- people with type 2 diabetes. **[new 2014]**

Appendix 2

(Taken from Red Whale Clinical Pharmacist Update Handbook 2016. Accessed via: https://pharmacist-cpd.com/handbook/Clinical%20Pharmacist%20Update/Cardiovascular/Lipids%20and%20statins on 15/05/2017)

Benefits of statins: primary prevention

Starting risk		No treatment for 10y	After 10y of atorvastatin	NNT to prevent 1 CV event after 10y of statin
10%	CV events	10%	6%	25
	CV events prevented by statin	–	4%	
	Would not have had an event with or without statin	90%	90%	
15%	CV events	15%	9%	17
	CV events prevented by statin	–	6%	
	Would not have had an event with or without statin	85%	85%	
20%	CV events	20%	13%	14
	CV events prevented by statin	–	7%	
	Would not have had an event with or without statin	80%	80%	

Title	Hypertension Management
Author	Tanya Aubeeluck and Jo Chater
Authorised by	Dr. Nick Hughes
Status	Approved
Date	July 2017
Review Date	July 2018
Review Period	Annual
Version	1.0
Scope	This guidance relates to clinical pharmacist led hypertension clinics as part of chronic disease management for adult patients. Patients attending this clinic have been diagnosed as hypertensive by their GP or Practice Nurse and have been referred for pharmacological treatment; they may be newly diagnosed or poorly controlled.

Reviewed by:	Date

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Purpose

The review provides an assessment of the patient to ensure treatment is optimal with minimal adverse effect to the patient. The review should be patient-centred and take into account the patient's views and opinions to allow them to make any informed decisions in the process.

Clinical Coding

The correct template should be used to code hypertension reviews; this ensures a consistent approach that improves auditability. When the review is conducted within the consultation select problem and a drop down box will appear, this contains the problems that have already been coded for this patient. Please select the corresponding hypertension code from this list or ensure the correct problem is coded as below.

Description	EMIS Code
Essential Hypertension	G20

Do not select an option for medicine review as a **problem code**. However within the consultation under 'history' please use the codes below to indicate this is an annual review conducted by pharmacist.

Description	EMIS Code
Medication review done by pharmacist	8BIC

Target Blood pressures

Target Blood pressures[1,2,3,7]	Below: Systolic	Diastolic
80 years old and younger	140	90
Older than 80 years old	150	90
Type 1 Diabetes	135	85
Type 1 Diabetes with albuminuria or 2 or more features of metabolic syndrome	130	80
Type 2 Diabetes	140	80
Type 2 Diabetes with kidney, eye or cerebrovascular damage	130	80
Chronic Kidney Disease	140	90
Chronic Kidney Disease with proteinuria	130	80

Review Structure

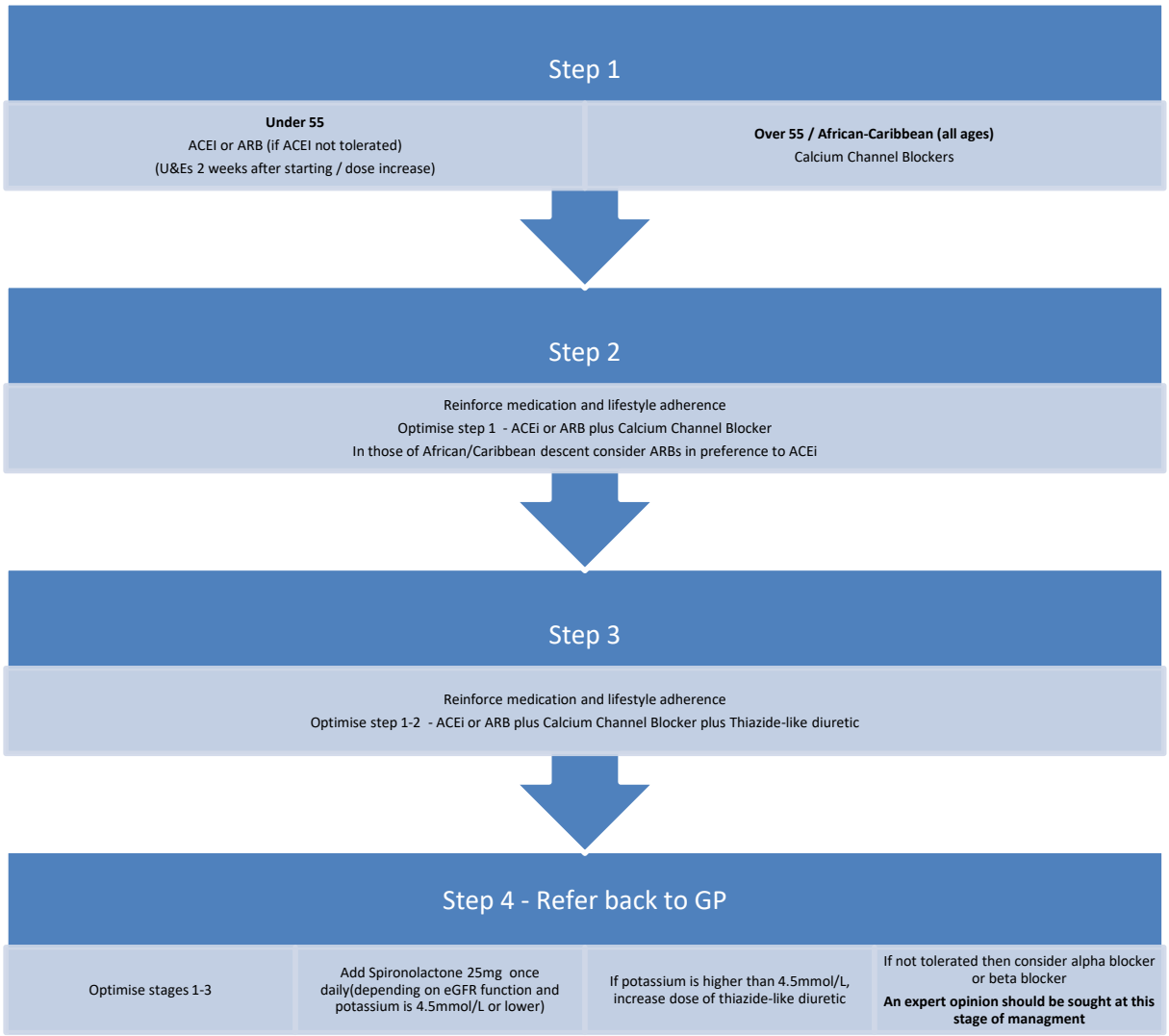
Step	Directions	Additional info.
1	Load patient record on EMIS and add a consultation. Run the template "GP contract – hypertension" and use this as a guideline to capture essential information and to provide structure.	
2	Explain the nature of the review to the patient and what it entails Invite patient to ask any questions or voice any concerns	
3	Obtain the patient's blood pressure, pulse, weight and height Hypertension causes symptoms very rarely but clinicians should be aware of the following: patient is generally unwell, headache, nausea, vomiting, and drowsiness.	If BP is greater than 220/120 – seek urgent advice from duty doctor – likely to require 999 call If BP greater than 180/110 and patient is symptomatic – obtain urgent advice from duty doctor If BP is greater than 180/110 and patient is asymptomatic refer back to GP within 1 to 2 weeks.
4	Ask the patient about their alcohol intake, diet and exercise regimen.	GPPAQ section of the template can be used to document the patient's level of physical activity
5	Ask the patient about their current smoking status.	If the patient is a smoker, explore their level of engagement with respect to giving up or reducing and record this in the corresponding section of the template.
6	Establish the patient's medication adherence and whether the patient experiences any side/adverse effects. Code appropriately.	Suitable codes: Drug side effects checked (8BIZ) Drug compliance checked (8BIq) Drug compliance good (8B3E) Drug compliance poor (8B3i) All over the counter medication checked (8BIl

7	Analyse the information obtained and then use the sections below (treatment algorithm, patient views, patient education and healthy lifestyle) to counsel patient as appropriate reinforcing the importance of keeping below their target blood pressure.	If appropriate, consider referral for stopping smoking, weight reduction, physical exercise programmes and dietary advice. Provide written information/leaflets if beneficial. (See appendix for further guidance on this).
8	If appropriate provide information on prevention of acute kidney injury and offer written information to the patient. Code that this information has been given (80AG).	Provide Kidney Care UK (formerly British Kidney Patient Association) leaflet 'how to keep your kidneys safe'. https://www.kidneycareuk.org/documents/81/How_to_Keep_Your_Kidneys_Safe.pdf
9	Request routine blood tests. When ordering renal profile blood tests consider requesting cholesterol etc. if outstanding.	Check renal function annually by measuring serum creatinine, electrolytes and estimated glomerular filtration rate (eGFR).
10	Set review date.	Blood pressure should be checked 3 – 4 weeks after initiating a new treatment. Hypertension reviews should be undertaken at least annually but may be sooner if clinically indicated.

Note: check individual drug SPC for guidance on dosage and monitoring requirements during initiation and optimisation of treatment.

Treatment algorithm[7]

Ensure medication is optimised to the maximal tolerated dose before moving on to the next step of treatment. Where possible recommend treatment with drugs taken only once a day. A medication with the lowest acquisition cost is preferable.



Patients' views on hypertension[6]

Many patients have similar views on hypertension, some of which could lead to sub-optimal therapy through lack of understanding of the condition. Here are some of the issues that could be considered and discussed as appropriate with the patient if concordance is an issue:

- Many patients believe hypertension to be an acute illness.
- Patients think the main causes are stress, food, obesity, family history and alcohol. Stress in particular is identified as a key component in causing high blood pressure or aggravating it. Some believed it only needed to be treated in times of stress.

- The main symptoms patients associated with hypertension were headaches and dizziness, and most felt the absence of such symptoms showed good control. Again, this led to patients withholding their medicines unless symptoms returned.
- Not many patients knew hypertension could affect their kidneys, but a large number understood that it could result in a stroke or heart disease.
- Patients believe long-term effects of medication may occur including tolerance and dependence, some even assume that over time the medicines will accumulate in their bloodstream resulting in harm.
- Alternative medicines were widely used as a substitute to conventional medicine as they were perceived to be more effective.

Patient Education

The associated benefit of lowering blood pressure is shown below.[5]

Risk	Percentage Reduction
Stroke Incidence	35-40%
Myocardial Infarction	20-25%
Heart Failure	>50%

Healthy Lifestyles [5]

- Weight reduction (approximately 10lb = 4.5kg) – can reduce SBP by 5-20mmHg/10kg
- Dietary Approaches to Stop Hypertension (DASH), eating a diet rich in fruits, vegetables, low-fat dairy products, low saturated fat and total fat consumption – can reduce SBP by 8-14mmHg
- Salt intake – no more than 100mmol (sodium) = 2.4g salt – can reduce SBP by 2-8mmHg
- Exercise – at least 30 minutes of aerobic exercise for most days of the week – can reduce SBP by 4-9mmHg
- Alcohol – If having more than 2 units per day for men and 1 unit per day for women reducing to this can reduce SBP by 2-4mmHg
- Smoking cessation
- Decrease caffeine consumption
- Information on self-care for people with hypertension can be obtained from the Blood Pressure Association — www.bpassoc.org.uk.[4]

Acute Kidney Injury

Angiotensin converting enzyme (ACE) inhibitors, angiotensin-II receptor antagonists and diuretics can all contribute to worsening of acute kidney injury. Patient's prescribed these medications should be made aware of the risk of acute kidney injury to encourage prevention, detection and management of this issue. The patient should be made aware that if they are unwell and unable to drink properly and are experiencing diarrhoea and/or vomiting (i.e. losing excess fluid) or have a high temperature and sweats or are not able to pass urine/only passing small amounts of urine that they should speak to their GP. More information can be obtained from https://www.kidneycareuk.org.

Red Flags

Shortness of breath

If patient is complaining of breathlessness, which is mild in nature or exercise induced, make a non-urgent appointment for the patient to be assessed by a GP. Organise blood tests (FBC, U&Es and BNP) to be taken prior to GP appointment so that the results can be included during the patient assessment.

If the patient is visibly short of breath see advice from the duty GP.

If patient complains of sudden onset and continuing symptoms see advice from the duty GP.

Chest pain

If patient has raised blood pressure and is complaining of chest pain seek advice from duty GP.

Irregular pulse

If irregular pulse is noted refer patient for an ECG.

TIA

If patient has experienced episodes of one-side weakness/ tingling and high blood pressure see advice from duty GP. In particular look for lateralising neurological signs as these could indicate a TIA.

References

1. Type 1 diabetes in adults: diagnosis and management NG17 (2016) National Institute of Health and Care Excellence.
2. Type 2 diabetes in adults: management NG28 (2017) National Institute of Health and Care Excellence.
3. Chronic kidney disease in adults: assessment and management CG182 (2015) National Institute of Health and Care Excellence
4. National Institute for Health and Care Excellence (2015) Hypertension - not diabetic online at: http://cks.nice.org.uk/hypertension-not-diabetic#!scenario:1 accessed 25 October 2016
5. Evidence-Based Guideline for the Management of High Blood Pressure in Adults (2014) Reported from the panel members appointed to the Eighth Joint National Committee. The Journal of the American Medical Association. JAMA. 2014; 311(5): 507-520
6. BMJ 2012; 345:e3953
7. Hypertension in adults: diagnosis and management CG127 (2011) National Institute of Health and Care Excellence.

Appendix 1

Referrals

- Use resources on the right-hand side of the consultation screen to print off patient information on diet, healthy lifestyle, weight management etc. or use DXS.
- Refer to nurses if need support with weight, diet, exercise tips etc.
- Refer using DXS for smoking cessation or Quit4life
- Refer to GP or lipid management protocol if Q-risk is completed and it is above 10%