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UCLPartners Proactive Care Framework:

Lipid Management including Familial Hypercholesterolaemia

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Supporting Primary Care to Restore and Improve Proactive Care

- COVID-19 has placed unprecedented pressure on our health system. This brings an added risk to people with long term conditions who need ongoing proactive care to stay well and avoid deterioration. Disruption to routine care may worsen outcomes for patients, increase their COVID risk and result in exacerbations that further increase pressure on the NHS – driving demand for unscheduled care in GP practices and hospitals.

- As primary care transforms its models of care in response to the pandemic, UCLPartners has developed real world frameworks to support proactive care in long term conditions. The frameworks include pathways for remote care, support for virtual consultations and more personalised care, and optimal use of the wider primary care team, e.g., healthcare assistants (HCA), link workers and pharmacists.

- Additionally, the frameworks include a selection of appraised digital tools, training and other resources to support patient activation and self-management in the home setting.

- This work has been led by primary care clinicians and informed by patient and public feedback.

- The UCLPartners frameworks and support package will help Primary Care Networks and practices to prioritise in this challenging time and to focus resources on optimising care in patients at highest risk. It will support use of the wider workforce to deliver high quality proactive care and improved support for personalised care. And it will help release GP time in this period of unprecedented demand.

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UCLPartners Proactive Care Frameworks

UCLPartners has developed a series of frameworks for local adaptation to support proactive management of long-term conditions in post-COVID primary care.

- Led by a clinical team of GPs and pharmacists.
- Supported by patient and public insight.
- Working with local clinicians and training hubs to adapt and deliver.

Core principles:

1. Virtual where appropriate and face to face when needed.
2. Mobilising and supporting the wider workforce (e.g. pharmacists, HCAs, and others) to optimise clinical care and holistic care
3. Step change in support for self-management.
4. Digital innovation including apps for self-management and technology for remote monitoring.

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Cardiovascular Disease (CVD) Conditions – Stratification and Management

Healthcare Assistants/other appropriately trained staff

Gather information e.g.	Up to date bloods, BP, weight, smoking status, run risk scores: QRISK*, CHA_2DS_2VASc, HASBLED.
Self management e.g.	Education (condition specific, CVD risk reduction), self care (eg red flags, BP measurement, foot checks), signpost shared decision making.
Behaviour change e.g.	Brief interventions and signposting e.g. smoking, weight, diet, exercise, alcohol.

Risk Stratification & Prioritisation

- **Atrial Fibrillation**
- **Blood Pressure**
- **Cholesterol**
- **Diabetes**

Prescribing Clinician

Optimise therapy and mitigate risk
Review blood results, risk scores & symptoms.
Initiate or optimise therapy.
Check adherence and adverse effects.
Review complications and co-morbidities.
CVD risk – BP, cholesterol, pre-diabetes, smoking, obesity.

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*QRISK 3 score is recommended to assess CV risk for patients with Severe Mental Illness, Rheumatoid Arthritis , Systemic Lupus Erythematosus, those taking antipsychotics or oral steroids

Why Focus on Lipids?

- High cholesterol causes cardiovascular disease and is associated with an increased risk of cardiovascular death.[1]
- **Lifestyle change** is important to reduce cardiovascular risk. Where this is ineffective or in people at highest risk (e.g. pre-existing CVD or familial hypercholesterolaemia (FH)), drug therapy with statins and other medications is very effective.
- Every 1mmol/l reduction in low-density lipoproteins (LDL) cholesterol reduces risk of a cardiovascular event by **25%**.[2]
- People with high cholesterol who also have other risk factors (e.g. high blood pressure, diabetes, smoking) are at significantly greater risk of CVD and have **most to gain** from a reduction in cholesterol.
- FH is high-risk but very treatable. Half of men with FH will have a heart attack or stroke before age 50 and a third of women before age 60. **Statins are highly effective** at reducing this risk.[3]

References:
1. Lewington S, Whitlock G, Clarke R, et al.. Blood cholesterol and vascular mortality by age, sex, and blood pressure: a meta-analysis of individual data from 61 prospective studies with 55,000 vascular deaths. Lancet 2007;370:1829–39. 10.1016/S0140-6736
2. https://jamanetwork.com/journals/jama/fullarticle/2556125
3. https://www.nice.org.uk/guidance/cg71/chapter/Context

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Cholesterol – Secondary Prevention (pre-existing CVD)

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Healthcare assistants/other appropriately trained staff

Gather information e.g.	Up to date bloods, BP, weight, smoking status.
Self-management e.g.	Education (cholesterol, CVD risk), BP monitors (what to buy, how to use), signpost to shared decision making resources.
Behaviour change e.g.	Brief interventions and signposting e.g. smoking, weight, diet, exercise, alcohol.

Stratification

Priority 1	Priority 2a	Priority 2b	Priority 3
Not on statin therapy	On suboptimal intensity statin*	On suboptimal statin dose**	Sub-optimal non-HDL (>2.5mmol/l) levels despite maximal statin therapy

Prescribing clinician

Optimise lipid modification therapy and CVD risk reduction

1. Review CVD risk factors, lipid results and liver function tests.
2. Initiate or optimise statin to high intensity – e.g. atorvastatin 80mg.
3. Titrate therapy against reduction in LDLc/non-HDLc (statin>ezetimibe>PCSK9i mAB/inclisiran).
4. Optimise BP and other comorbidities.
5. Use intolerance pathway and shared decision-making tools to support adherence.
6. Arrange follow-up bloods and review if needed.

* E.g simvastatin
** E.g atorvastatin 40mg

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Cholesterol –Primary Prevention (no pre-existing CVD)

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Healthcare assistants/other appropriately trained staff

Gather information:	E.g. up to date bloods, BP, weight, smoking status, run QRISK score.*
Self-management:	Education (cholesterol, CVD risk), BP monitors (what to buy, how to use), signpost to shared decision making resources.
Behaviour change:	Brief interventions and signposting e.g. smoking, weight, diet, exercise, alcohol.

Stratification

Priority 1

One of:
- QRISK ≥20%
- CKD
- Type 1 Diabetes

AND
- Not on statin

Priority 2
- QRISK 15-19%

AND
- Not on statin

Priority 3
- QRISK 10-14%

AND
- Not on statin

Priority 4

On statin for primary prevention but not high intensity

Prescribing clinician

Optimise lipid modification therapy and CVD risk reduction

1. Review QRISK score, lipid results and LFTs.
2. Initiate or optimise statin to high intensity – eg atorvastatin 20mg.
3. Titrate therapy against reduction in LDLc/non-HDLc (statin>ezetimibe).
4. Optimise BP and other comorbidities.
5. Use intolerance pathway and shared decision-making tools to support adherence.
6. Arrange follow-up bloods and review if needed.

*QRISK 3 score is recommended to assess CV risk for patients with Severe Mental Illness, Rheumatoid Arthritis , Systemic Lupus Erythematosus, those taking antipsychotics or oral steroids

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Implementation Resources

1. Optimisation Pathway for Secondary Prevention
2. Optimisation Pathway for Primary Prevention
3. Statin Intolerance Pathway
4. Muscle Symptoms Pathway
5. Abnormal Liver Function Test Pathway
6. Shared Decision-Making Resources
7. Statin Intensity Table
8. Summary of Lipid Lowering Therapies
9. Inclisiran for Secondary Prevention
10. Bempedoic Acid for Use in Statin Intolerance
11. QRISK2/3
12. Familial Hypercholesterolaemia (FH) Detection and Management in Primary Care

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Optimisation Pathway for Secondary Prevention

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Is patient on high dose, high intensity statin*?
(atorvastatin 80mg or equivalent)

Yes

No

Initiate / increase to high dose high intensity statin **
and re-enforce lifestyle and diet measures

Is non-HDL cholesterol < 2.5mmol/L? ***

Yes

No

Check adherence to statin and lifestyle measures ****

Consider ezetimibe 10mg daily
Reassess after three months. If non-HDL-C remains > 2.5mmol/L; consider injectable therapies arrange a fasting blood test and assess eligibility

Consider injectable therapies
If non-HDL chol > 2.5mmol/L; Arrange fasting blood test to assess eligibility:

- **Inclisiran** - if fasting LDL-C ≥ 2.6mmol/L

OR

- **Refer for PCSK9i (mAB)**[+] if fasting LDL-C > 4mmol/L (or > 3.5mmol/L if recurrent events)

If eligibility criteria are not met, consider ezetimibe 10mg daily (if not previously considered)

Review annually for adherence to drugs and support for diet and lifestyle measures

Optimal High Intensity Statin for secondary prevention (High intensity statins are substantially more effective at preventing cardiovascular events than low/medium intensity statins)	
Atorvastatin	80mg
Rosuvastatin	20mg

* Dose may be limited if:
- eGFR<30ml/min
- Drug interactions
- Intolerance
- Older age / frailty

** See statin intensity table

*** Current NICE Guidance recommends at least a 40% reduction in non- HDL cholesterol

**** **If statin not tolerated**, follow statin intolerance pathway and consider ezetimibe 10mg daily +/- bempedoic acid 180mg daily. If non HDL-C remains > 2.5mmol/L despite other lipid lowering therapies consider injectable therapies.

[+] NICE Guidance: Evolocumab, Alirocumab

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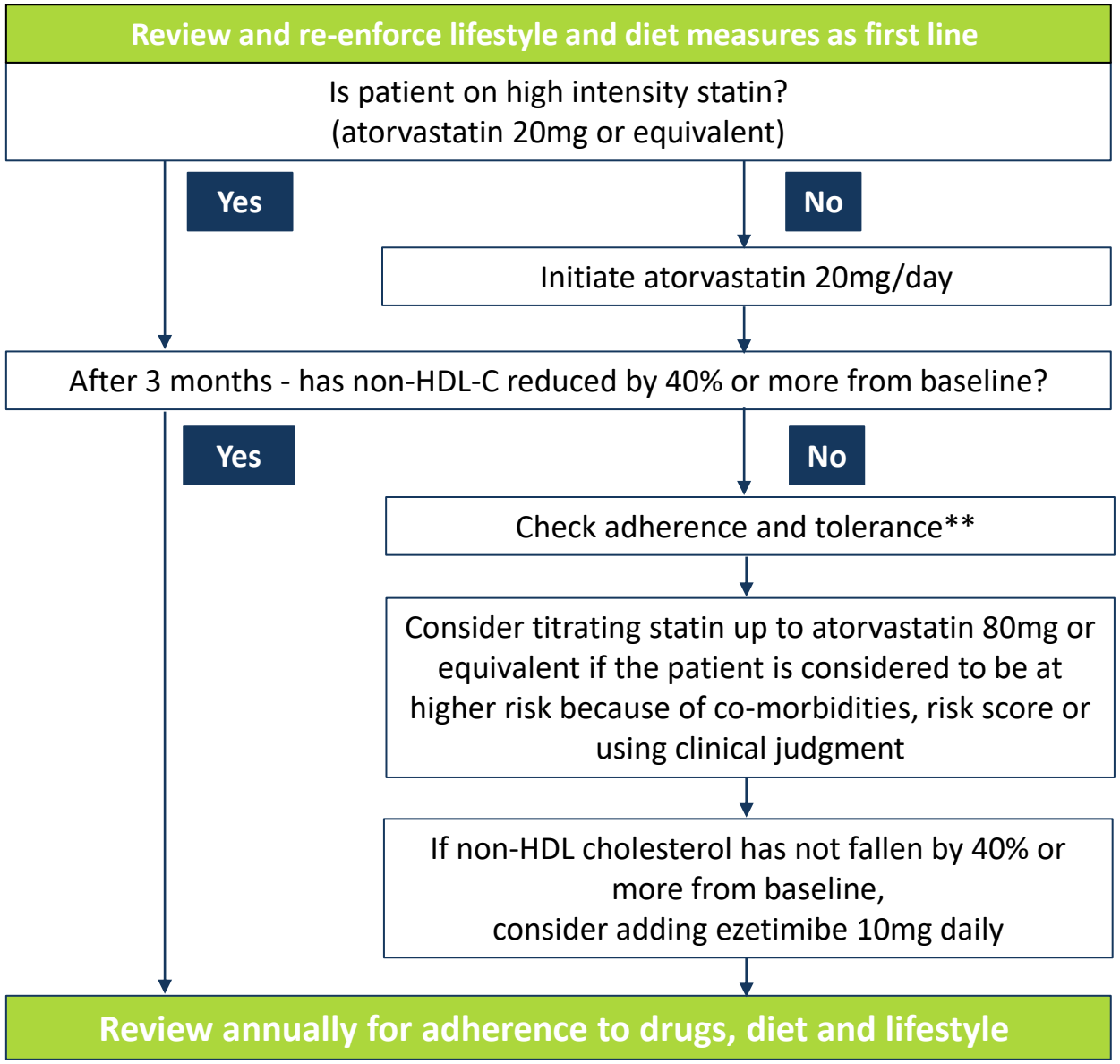
Optimisation Pathway for Patients with High Cardiovascular Risk* – Primary Prevention



Optimal High Intensity statin for Primary Prevention (High intensity statins are substantially more effective at preventing cardiovascular events than low/medium intensity statins)	
Atorvastatin	20mg
Rosuvastatin	10mg

* High cardiovascular risk:

- QRisk >10% in ten years
- CKD 3-5
- Type 1 Diabetes for >10 years or over age 40

** If statin not tolerated, follow statin intolerance pathway and consider ezetimibe 10mg daily +/- bempedoic acid 180mg daily

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Statin Intolerance Pathway

Important considerations

- Most adverse events attributed to statins are no more common than placebo*
- Consider food and drug interactions which may be contributing to adverse effects – see Summary of Product Characteristics (SmPC) **
- Stopping statin therapy is associated with an increased risk of major CV events. It is important not to label patients as 'statin intolerant' without structured assessment
- If a person is not able to tolerate a high-intensity statin, aim to treat with the maximum tolerated dose
- A statin at any dose reduces CVD risk – consider annual review for patients not taking statins to review cardiovascular risk and interventions

A structured approach to reported adverse effects of statins

1. Stop for 4-6 weeks.
2. If symptoms persist, they are unlikely to be due to statin
3. Restart and consider lower initial dose
4. If symptoms recur, consider trial with alternative statin
5. If symptoms persist, consider ezetimibe +/- bempedoic acid

*(*Collins et al systematic review, Lancet 2016)*

**SmPC:
Atorvastatin
https://www.medicines.org.uk/emc/product/5274/smpc#gref
Rosuvastatin
https://www.medicines.org.uk/emc/product/4366/smpc#gref

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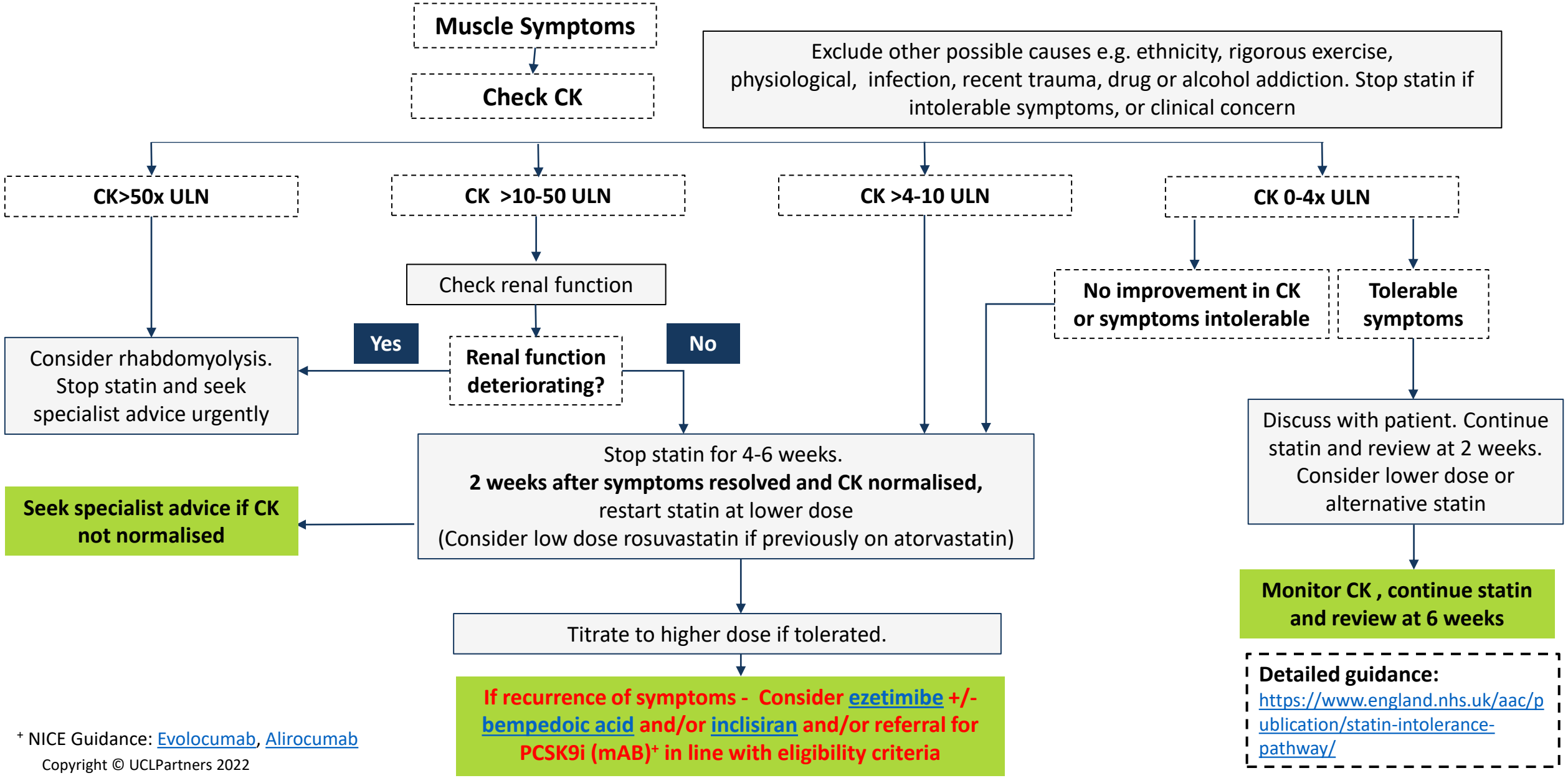
Muscle Symptoms Pathway



+ NICE Guidance: Evolocumab, Alirocumab

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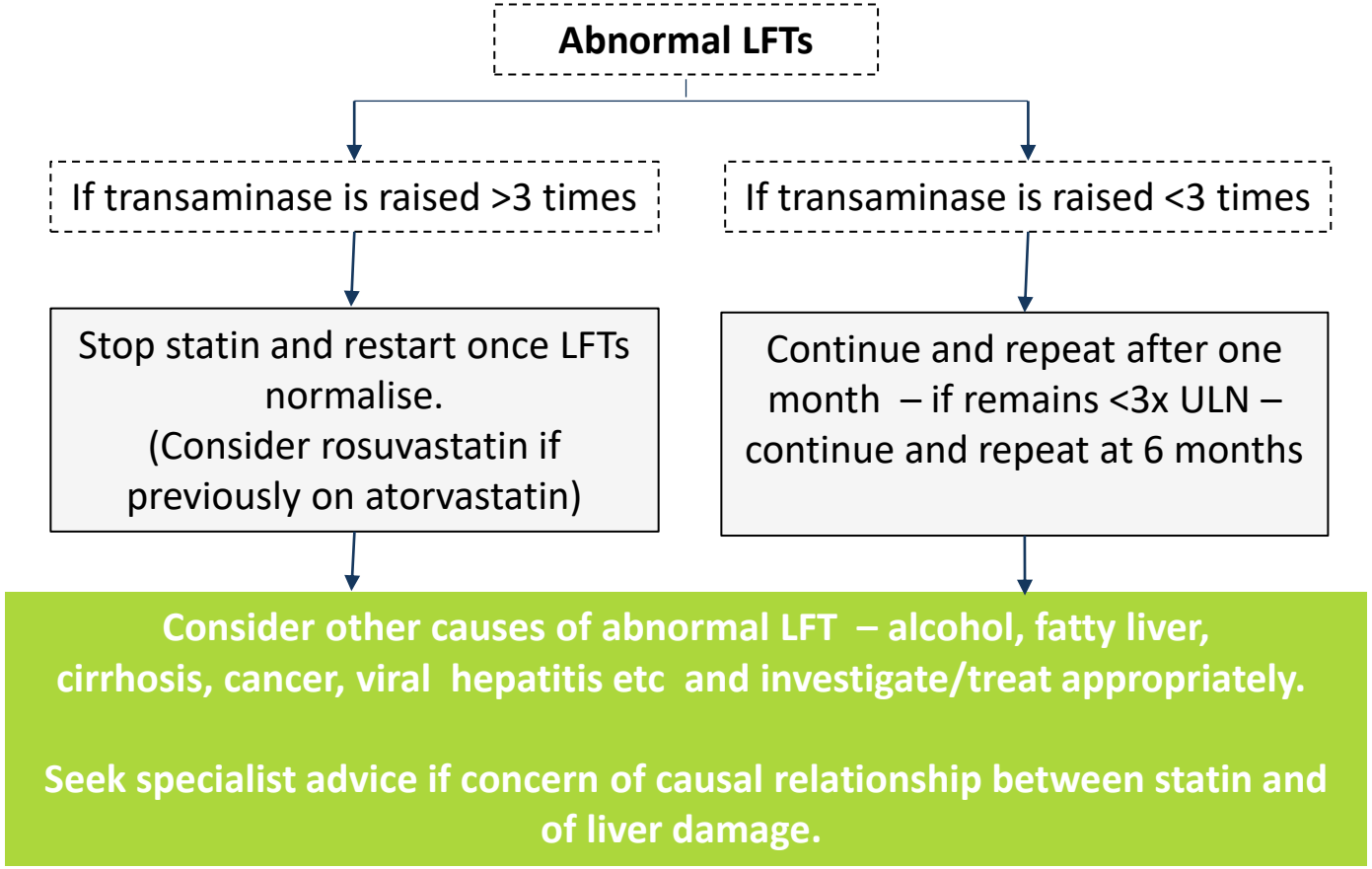
Abnormal Liver Function Test (LFT) Pathway



- Do not routinely exclude from statin therapy people who have liver transaminase levels that are raised but are less than 3 times the upper limit of normal.
- Most adults with fatty livers are likely to benefit from statins and this is not a contraindication.
- Check liver function at baseline, within 3 months and 12 months after initiation of statin therapy.

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Shared Decision-Making Resources

Benefits per 10,000 people taking statin for 5 years	Events avoided
Avoidance of major CVD events in patients with pre-existing CVD & a 2mmol/l reduction in LDL	1,000
Avoidance of major CVD events in patients with no pre-existing CVD & a 2mmol/l reduction in LDL	500

Adverse events per 10,000 people taking statin for 5 years	Adverse events
Myopathy	5
Haemorrhagic Strokes	5-10
Diabetes Cases	50-100

Shared decision-making resources:

- BHF information on statins
- Heart UK: Information on statins
- NICE shared decision-making guide

Collins et al 2016 Lancet Systematic Review Lancet 2016; 388: 2532–61

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Statin Intensity Table – NICE recommends Atorvastatin and Rosuvastatin as First Line

Approximate Reduction in LDL-C					
Statin dose mg/day	5	10	20	40	80
Fluvastatin			21%	27%	33%
Pravastatin		20%	24%	29%	
Simvastatin		27%	32%	37%	42%
Atorvastatin		37%	43%	49%	55%
Rosuvastatin	38%	43%	48%	53%	
Atorvastatin + Ezetimibe 10mg		52%	54%	57%	61%

Low/moderate intensity statins will produce an LDL-C reduction of 20-30%

Medium intensity statins will produce an LDL-C reduction of 31-40%

High intensity statins will produce an LDL-C reduction above 40%

Simvastatin 80mg is not recommended due to risk of muscle toxicity

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Summary of lipid lowering therapies

Drug class	NICE approved Recommendation	Administration	LDL-lowering efficacy	CV outcomes evidence	Safety data
Statins	Primary prevention, Secondary prevention, Familial hypercholesterolaemia (FH)	Oral tablet given once daily	High intensity statins can lower LDL-C by 40% -55% (depending on agent and dose)[1]	Multiple outcome studies confirming CV outcomes benefit across a wide range of patient cohorts. For every 10,000 people treated for 5 years: • In secondary prevention (established CVD): 1,000 heart attacks, strokes or deaths avoided NNT over 5 years = 10 • In primary prevention: 500 heart attacks, strokes or deaths avoided[7] NNT over 5 years = 20	Long term safety data has been well established over 30 years For every 10,000 people treated for 5 years: 5 cases of myopathy 5-10 haemorrhagic strokes 50-100 new cases of diabetes [7]
Ezetimibe	Primary prevention, Secondary prevention and FH where statins are contraindicated, not tolerated or ineffective	Oral tablet given once daily	An additional LDL-C reduction of 24% in combination with statins[2]	Two CV outcomes studies in secondary prevention on top of statins[8,9] For every 10,000 people with CVD treated for 7 years: Approximately 200 major CV events avoided NNT 50 for preventing major cardiovascular event over 7 years. [10]	Long term safety data has been well-established over 20 years
PCSK9i (Alirocumab/ Evolocumab)	Secondary prevention and FH in patients who meet eligibility criteria	Self-administered S/C injection every two weeks	An additional LDL-C reduction of approximately 50% (range 25-70%) alone or in combination with statins or ezetimibe. [3,4]	Two CV outcomes studies in secondary prevention on top of statins [11,12] For every 10,000 people treated for 2.5 years: Approximately 150 major CV events avoided NNT over 2.5 years = 65[13]	Safety data has been established over 7 years
Bempedoic acid	For use where statins are not tolerated in combination with ezetimibe, if ezetimibe alone does not control LDL-C well enough	Oral tablet given once daily	An additional LDL-C reduction of approximately 28% (range 22-33%) when combined with ezetimibe[5]	No CV outcomes data. On-going studies due to report in 2022.	Short term safety data from trials of up to 2 years.
Inclisiran	Secondary prevention in patients who meet eligibility criteria	S/C injection administered by a healthcare professional every six months, once stabilised	An additional LDL-C reduction of approximately 50% (range 48-52%) alone or in combination with statins or ezetimibe[6]	No CV outcomes data. On-going studies due to report in 2026.	Short term safety data from trials of up to 2 years.

References:
1. NICE CG181 2014 https://www.nice.org.uk/guidance/cg181/chapter/1-recommendations; 2. NICE TA385 2016 https://www.nice.org.uk/guidance/ta385; 3. NICE TA393 2016. https://www.nice.org.uk/guidance/ta394 4. NICE TA394 2016. https://www.nice.org.uk/guidance/ta394 5. NICE TA694 2021. https://www.nice.org.uk/guidance/ta694 6. NICE TA733 2021. https://www.nice.org.uk/guidance/ta733. 7. Collins et al. 2016. Lancet 2016; 388: 2532–61. 8. Cannon CP et al. 2015. N Engl J Med 2015; 372:2387-2397; 9. Amerenco P et al. 2020. N Engl J Med 2020; 382:9-19; 10. Can Fam Physician. 2015 Mar; 61(3): 251. 11. Sabatine et al. 2017: N Engl J Med 2017; 376:1713-1722; 12. Schwarz GG et al. 2018. N Engl J Med 2018; 379:2097-2107; 13. Can Fam Physician. 2018 Sep; 64(9): 669.

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Inclisiran for Secondary Prevention (NICE TA* recommendation)

- Inclisiran is indicated for patients:
  - With established CVD
  - On optimal oral lipid lowering therapy including high intensity statins where tolerated
  - Where LDL-C remains ≥ 2.6mmol/L
- Inclisiran lowers LDL-C by approx. 50%, but there are currently no long term CVD outcome data or safety data which should be taken into account when making a shared decision with the patient about appropriate treatment choices.
- Inclisiran is administered at a dose of 284mg by subcutaneous injection.
- It should be given at month 0 (initiation), month 3, month 9 and then every 6 months thereafter.
  - If a planned dose is missed by more than 3 months, a new dosing schedule should be started again from month 0 as above.
  - It should be administered by a healthcare professional into the abdomen; alternative injection sites include the upper arm or thigh.
- The only adverse reactions associated with inclisiran reported to date are injection site reactions (8.2%)
- More information on inclisiran can be found here.

*Technology Appraisal

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Bempedoic Acid for Use in Statin Intolerance (NICE TA* Recommendation)

- Bempedoic acid with ezetimibe is recommended as an option for treating primary hypercholesterolaemia (heterozygous familial and non-familial) or mixed dyslipidaemia as an adjunct to diet in adults. It is recommended only if:
  - statins are contraindicated or not tolerated
  - ezetimibe alone does not control low-density lipoprotein cholesterol well enough
- Bempedoic acid with ezetimibe can be used as separate tablets or a fixed-dose combination.
- The recommended dose of bempedoic acid is one film-coated tablet of 180 mg taken once daily.
- Bempedoic acid lowers LDL-C by an additional 28% (range 22-33%) when combined with ezetimibe.
- Bempedoic acid was associated with a slightly increased risk of tendon rupture, involving the biceps tendon, rotator cuff, or Achilles tendon. Other more commonly reported adverse events in clinical trials were upper respiratory tract infection, back pain, abdominal pain or discomfort, bronchitis, pain in extremity, anaemia, and elevated liver enzymes.
- More information on bempedoic acid can be found here.

*Technology Appraisal

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CV Risk assessment - QRISK®2/3

QRisk2 can be accessed here: https://www.qrisk.org/2017/

QRisk3 can be accessed here: https://www.qrisk.org/three/

QRISK®3 includes more factors than QRISK®2 to help identify those at most risk:

- Chronic kidney disease, which now includes stage 3 CKD
- Migraine
- Corticosteroids
- Systemic lupus erythematosus (SLE)
- Atypical antipsychotics
- Severe mental illness
- Erectile dysfunction
- A measure of systolic blood pressure variability

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Familial Hypercholesterolaemia – Increasing Detection and Optimising Management

The UCLPartners FH pathway will help improve identification & management of patients with possible undiagnosed Familial Hypercholesterolaemia (FH).

- Currently 92% of people with the condition are estimated to be undiagnosed.
- The Simon Broome (SB) criteria can be used to determine if a patient with high cholesterol needs genetic testing.
- This pathway automates and simplifies this process and offers a pragmatic solution to case-finding:

1. Searches identify patients with a high cholesterol above the NICE recommended (CG71) thresholds.
2. A Healthcare Assistant (HCA) or other team member then arranges fasting lipids plus renal, liver, thyroid and HbA1c to identify possible secondary causes of raised lipids. Cholesterol levels should then be re-checked after secondary causes are managed.
3. If the triglycerides are below 2.3mmol/l, a simplified family history questionnaire can be texted to the patient, with interpretation checked by the HCA. If family history of early CHD is positive, the Simon Broome criteria for genetic testing are met.
4. If family history is negative, the patient should be assessed for tendon xanthomata (TX). This service could be provided across a PCN or CCG by a trained pharmacist or nurse. If TX are present, the Simon Broome criteria for genetic testing are met.
5. For patients in whom Simon Broom criteria are met and for those with known (coded) FH, a desktop review is conducted by a trained pharmacist or nurse to check results and coding, exclude secondary causes for the elevated lipid levels and referral to specialist service for assessment and genetic testing.

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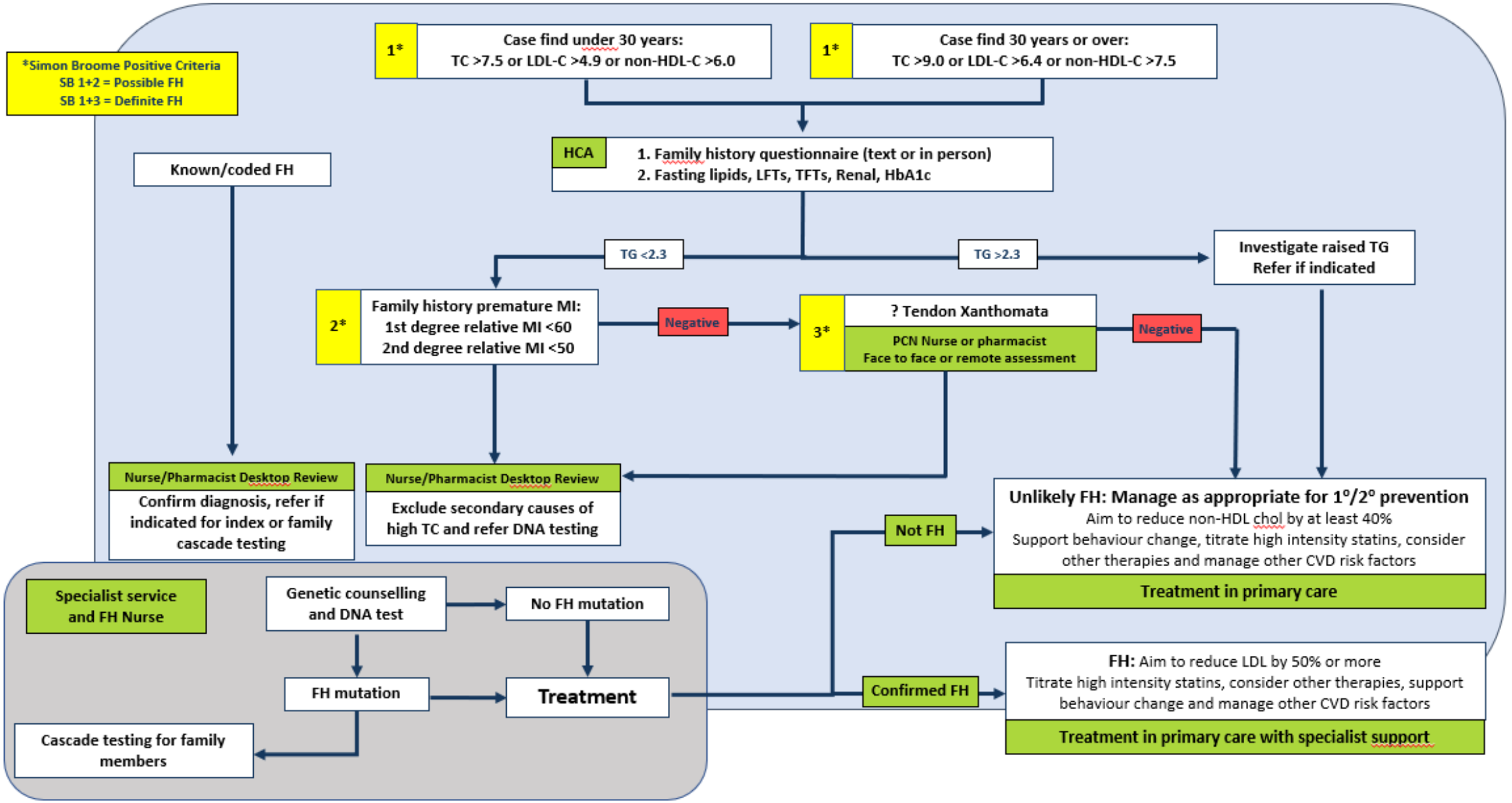
Familial Hypercholesterolaemia Pathway



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Familial Hypercholesterolaemia Family History Questionnaire

We have reviewed your cholesterol results and would like some information on your family history to help inform your treatment. Please answer the following questions:

1. Have any of your first-degree blood relatives (mother, father, brother or sister) had a heart attack under the age of 60? **Yes/ No**

   If Yes, which relative (mention how they are related to you) and how old were they when they had the heart attack?

2. Have any of your second-degree blood relatives (grandparents, aunts, uncles, nephews, nieces and half brothers and half sisters) had a heart attack aged 50 or under? **Yes/ No**

   If Yes, which relative (mention how they are related to you) and how old were they when they had the heart attack?

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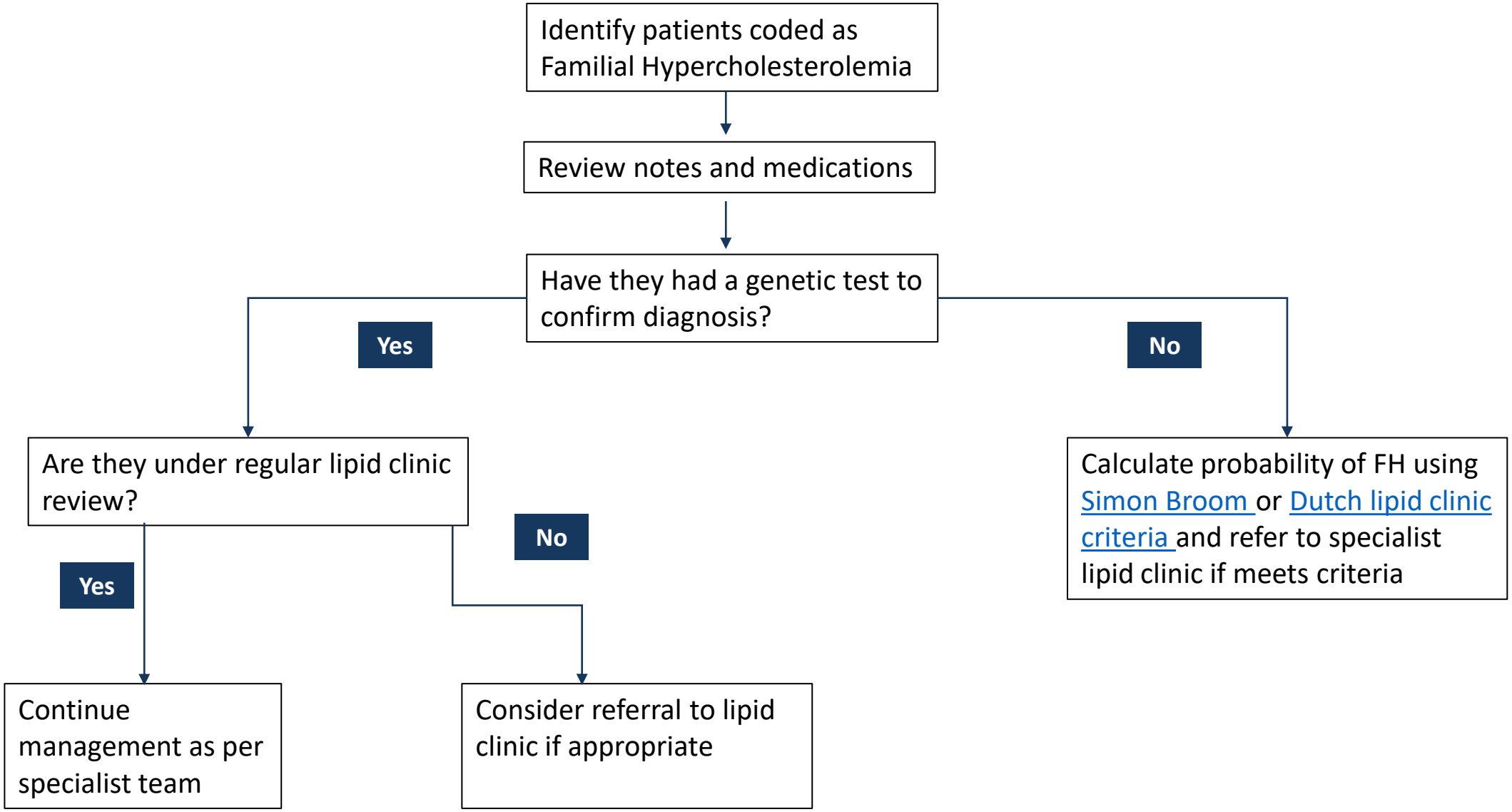
Desktop Review for People with Coded FH



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Simon Broome Criteria – Definite FH

Definite FH is defined as one of the cholesterol levels (total cholesterol or LDL cholesterol) as outlined in the table below:

	Adult	Child (less that 16 years)
Total Cholesterol	Greater than 7.5mmol/L	Greater than 6.7mmol/L
Low-Density Lipoprotein (LDL) Cholesterol Concentration	Greater than 4.9mmol/L	Greater than 4.0mmol/L

Plus one of the following:

- Tendon xanthomata (or evidence of tendon xanthomata) in the person, a first-degree relative (parent, sibling, or child) or a second-degree relative (grandparent, uncle, or aunt), *or*
- DNA-based evidence of an LDL receptor mutation, familial defective apo B-100, or a PCSK9 mutation.

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Simon Broome Criteria – Possible FH

Definite FH is defined as one of the cholesterol levels (total cholesterol or LDL cholesterol) as outlines in the table below:

	Adult	Child (less that 16 years)
Total Cholesterol	Greater than 7.5mmol/L	Greater than 6.7mmol/L
Low-Density Lipoprotein (LDL) Cholesterol Concentration	Greater than 4.9mmol/L	Greater than 4.0mmol/L

***and* at least one of the following:**

- Family history of myocardial infarction — before 60 years of age in a first-degree relative or before 50 years of age in a second-degree relative.
- Family history of raised total cholesterol — greater than 7.5 mmol/L in an adult first- or second-degree relative, or greater than 6.7 mmol/L in a child or sibling (of the person with suspected FH) aged younger than 16 years.

Reference: https://cks.nice.org.uk/topics/hypercholesterolaemia-familial/diagnosis/assessment-diagnosis/#the-simon-broome-the-dutch-lipid-clinic-network-criteria

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Dutch Lipid Clinic Criteria

Family history		
First-degree relative with known premature coronary and/or vascular disease (men aged <55 years and women aged <60 years) or First-degree relative with known low-density lipoprotein-cholesterol (LDL-C) above the 95th percentile for age and sex		1
First-degree relative with tendinous xanthomata and/or arcus cornealis or Children aged <18 years with LDL-C above the 95th percentile for age and sex		2
Clinical history		
Patient with premature coronary artery disease (ages as above)		2
Patient with premature cerebral or peripheral vascular disease (as above)		1
Physical examination		
Tendon xanthomas		6
Arcus cornealis prior to 45 years of age		4
LDL-C (mmol/L)		
	LDL-C ≥8.5	8
	LDL-C 6.5–8.4	5
	LDL-C 5.0–6.4	3
	LDL-C 4.0–4.9	1
Deoxyribonucleic acid (DNA) analysis: Functional mutation in the low-density lipoprotein receptor (LDLR), apolipoprotein B (APOB) or proprotein convertase subtilisin/kexin type 9 (PCSK9) gene		8

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Dutch Lipid Clinic Criteria continued

Stratification	Total score
Definite familial hypercholesterolaemia (FH)	≥8
Probable FH	6–7
Possible FH	3–5
Unlikely FH	<3

ApoB, apolipoprotein B; DNA, deoxyribonucleic acid; FH, familial hypercholesterolaemia; LDL-C, low-density lipoprotein-cholesterol; *LDLR*, low-density lipoprotein receptor; *PCSK9*, proprotein convertase subtilisin/kexin type 9

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Overview of Management of FH in Primary Care

1. Consider referral for genetic testing and cascade testing
2. Offer a high-intensity statin to all adults with FH - aim for at least a 50% reduction in LDL-C concentration. Increase the dose of statin after 3 months if not achieving a 50% reduction in LDL-C and not already prescribed maximum dose.
3. Use ezetimibe in patients with FH who have contraindications to, or cannot tolerate, statin therapy **and consider adding** bempedoic acid
4. Add ezetimibe to statin therapy in patients who are not achieving a 50% reduction in LDL-C concentration despite maximum dose high intensity statin **OR** where statin dose is limited by side effects. Consider inclisiran in patients with CVD, who are not achieving an LDL-C<2.6mmol/L despite optimal oral lipid lowering therapy (high intensity statins with or without ezetimibe)
5. Refer patients to a specialist for consideration of further treatment:
    - if treatment with the maximum tolerated dose of a high-intensity statin and ezetimibe +/- inclisiran is inadequate
    - if they are assessed to be at very high risk of a coronary event:
        - A family history of premature coronary heart disease
        - Two or more other cardiovascular risk factors (for example, they are male, they smoke, or they have hypertension or diabetes)
    - If they have established cardiovascular disease
6. Specialists may initiate PCSK9i (alirocumab or evolocumab), bile acid binders (resins) or fibrates in patients with an inadequate response to first line lipid lowering therapies
7. PCSK9i are recommended for use in people with FH:
    - For primary prevention when LDL remains > 5mmol/L despite optimal statin / ezetimibe therapy
    - For secondary prevention when LDL remains > 3.5mmol/L despite optimal statin / ezetimibe therapy

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Hypertension in patients with Hypercholesterolaemia

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Detection and Management of Hypertension in Patients with Hypercholesterolaemia

Blood pressure should be checked in patients with hypercholesterolaemia to identify undiagnosed hypertension. If hypertension is suspected due to a high BP reading, the diagnosis should be confirmed using ABPM or home BP checks over 7 days.

Checking BP in patients with established hypertension:

- Patients **without** AF:
  - Submit lowest of 3 Home BP readings
- Patients **with** AF:
  - Submit 2 BP readings each morning and evening over 4 days. Calculate the average systolic and diastolic values.

Please refer to UCLP hypertension pathway for detailed guidance:

https://s31836.pcdn.co/wp-content/uploads/Hypertension-Framework_UCLPartners-LTCs-April-2021-v2.0.pdf

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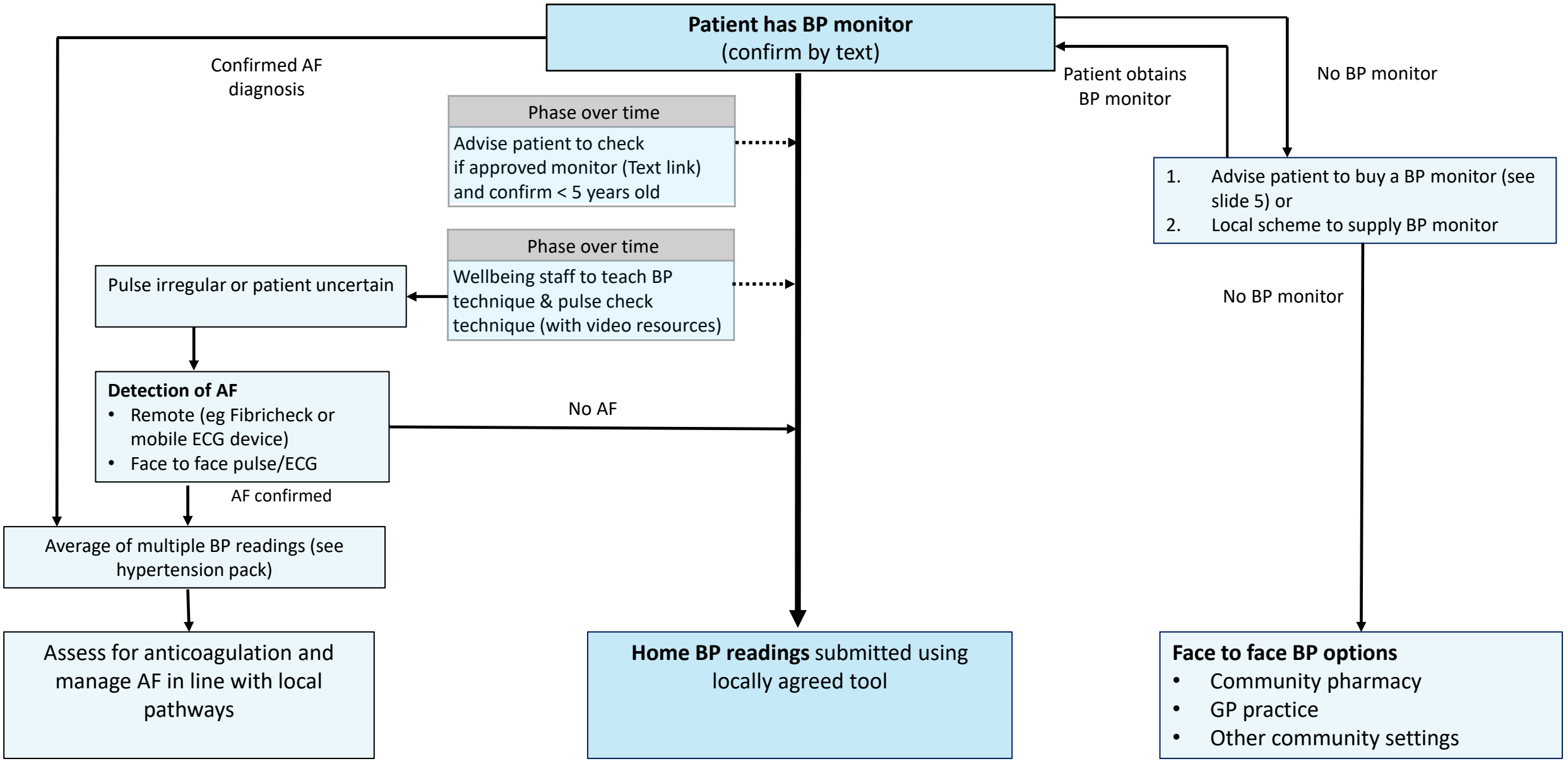
Home Blood Pressure Monitoring Pathway



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NICE Hypertension Treatment Pathway (NG136)

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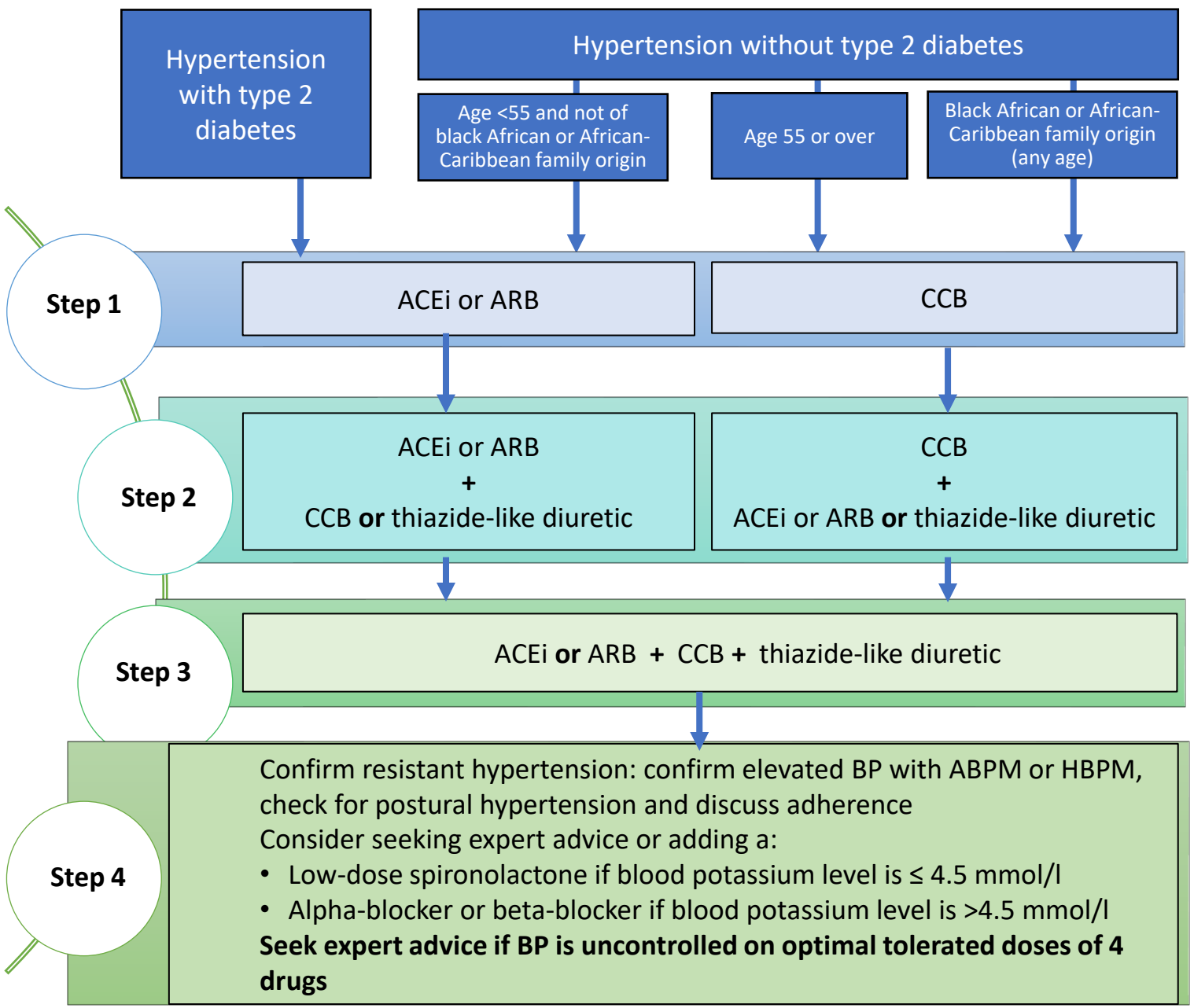

Use clinical judgement for people with frailty or multimorbidity

Offer lifestyle advice and continue to offer it periodically

Monitoring treatment

Use clinic BP to monitor treatment
Measure standing and sitting BP in people with:

- Type 2 diabetes or
- Symptoms of postural hypotension or
- Aged 80 and over

Advice people who want to self monitor to use HBPM. Provide training and advice

Consider AMPM or HBPM, in addition to clinic BP, for people with white-coat effect or masked hypertension

BP targets

Reduce and maintain BP to the following targets:

Age <80 years:
- Clinic BP <140/90 mmHg
- ABPM/HBPM <135/85mmHg

Postural hypotension:
- Base target on standing BP

Frailty or multimorbidity:
- Use clinical judgement

Pathway adapted from NICE Guidelines (NG136) Visual Summary
https://www.nice.org.uk/guidance/ng136/resources/visual-summary-pdf-6899919517
Abbreviations: ACEi: ACE inhibitor, ARB: Angiotensin II Receptor Blocker, CCB: Calcium Channel Blocker, ABPM: Ambulatory Blood Pressure Monitoring, HBPM: Home Blood Pressure Monitoring

Atrial Fibrillation in Patients with Hypercholesterolaemia

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Detection and Management of Atrial Fibrillation (AF) in Patients with Hypercholesterolaemia

- Palpate pulse and if irregular or patient uncertain:
  - Assess for AF using ECG or remote devices:
    - Fibricheck (needs smartphone) www.fibricheck.com/ and ask them to monitor morning and evening for 7 days
    - Kardia by AliveCor (needs smartphone): www.alivecor.co.uk/kardiamobile
    - MyDiagnostick: www.mydiagnostick.com/
    - Zenicor: https://zenicor.com/

- If AF is confirmed, undertake stroke and bleeding risk assessment and anticoagulate as appropriate.

- Please refer to UCLP AF pathway for detailed guidance:
  https://s31836.pcdn.co/wp-content/uploads/Atrial-Fibrillation-Framework_UCLPartners-LTCs-April-2021-v2.0.pdf

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Digital Resources

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Digital Resources to Support Self-Management: Cholesterol

Heart UK resources
Healthy Eating, blood fats explained, understanding cholesterol, and Familial Hypercholesterolemia

British Heart Foundation resources - Understanding Cholesterol

Diet
Providing information on healthy eating from the NHS website
Advice and guidance on losing weight including useful apps and healthy recipes on the 'Better Health' website
NHS advice on lowering cholesterol levels & what is cholesterol and how do I lower it?

Smoking cessation: NHS support offers stop smoking aids, tools and practical tips

Exercise
NHS 'Better Health'
Getting active around the home: tips, advice and guidance on how to keep or get active in and around the home from Sport England
Dance to health: Online dance programme especially tailored to people over 55 years old
https://richmondgroupofcharities.org.uk/physical-activity-long-term-health-conditions-resource-packs: Physical activity videos and information

Alcohol
Heart UK alcohol guidance
NHS Drink Less guidance

Mental Health - Tips and suggestions for looking after your mental health

Peer support - Communities of people living with high cholesterol

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Proactive Care Frameworks: Implementation & Support Package

Implementation Support is critical to enable sustainable and consistent spread.
UCLPartners has developed a support package covering the following components:

Search and stratify	**Comprehensive search tools** for EMIS and SystmOne to stratify patients • Pre-recorded webinar as to how to use the searches • Online Q&A to troubleshoot challenges with delivery of the search tools
Workforce training and support	- **Training tailored to each staff grouping (e.g. HCA/ pharmacist etc) and level of experience** - **Delivery:** Protocols and scripts provided/ training on how to use these underpinned with motivational interviewing/ health coaching training to enable adult-to-adult conversations - **Practical support**: Recommended training e.g. correct BP monitoring technique, Very Brief Advice for smoking cessation, physical activity etc - **Digital implementation** support: how to get patients set up with appropriate digital - **Education** sessions on conditions - **Communities of Practice**
Digital support tools	**Digital resources** to support remote management and self-management in each condition **Implementation** toolkits available where required, e.g. MyCOPD Support available from UCLP's commercial and innovation team for implementation

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1. NHS England statin intolerance pathway
2. NICE cardiovascular disease clinical guidance
3. NICE secondary prevention clinical guidance
4. European Heart Journal, Volume 37, Issue 29, 1 August 2016, Pages 2315–2381
5. Summary of National Guidance for Lipid Management for Primary and Secondary Prevention of CVD – AAC Subgroup March 2020

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Thank you

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Version tracker

Version	Edition	Changes Made	Date amended	Review date
2	2.0	• Edited the stratification overview slide		
3	3.0	• FH pathway updated and guidance for detection • Addition of Medicines Optimisation approach • Guidance on desk top reviews and use of Dutch Lipid Clinic criteria		
4	4.0	• Formatting and slide order		
4	4.1	• Formatting		
5	5.0	• Hypertension slides added. Dates added to version control table and version number removed from title slide	June 2021	December 2021
6	6.0	• Slide order re-arranged • Detection and management of AF added • Added option of bempedoic acid	August 2021	February 2022
7	7.0	• Priority groups updated • Added inclisiran into lipid treatment pathway • Web links updated for resources	July 2022	July 2023

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