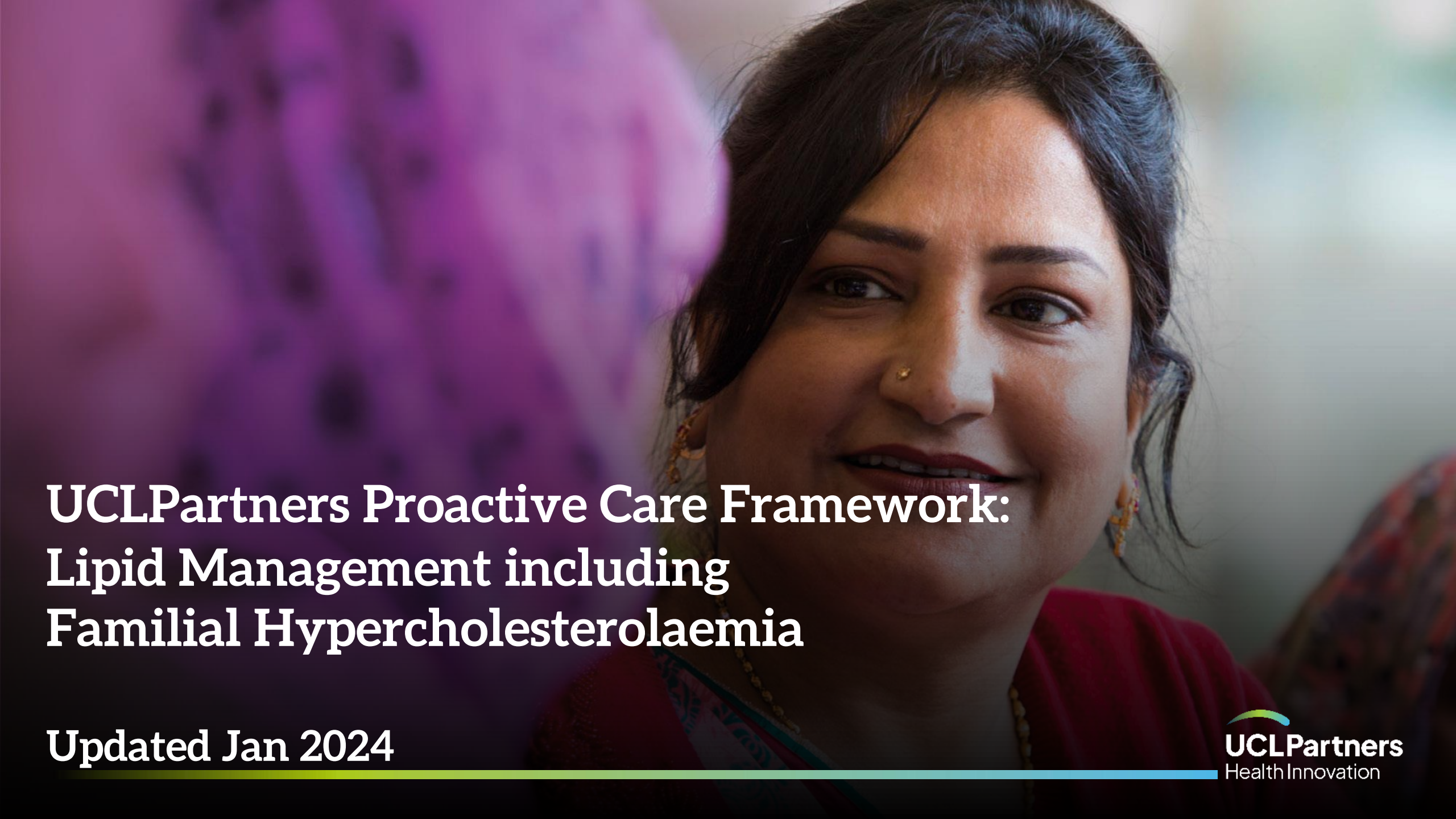

UCLPartners Proactive Care Framework: Lipid Management including Familial Hypercholesterolaemia

Updated Jan 2024

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The Proactive Care Frameworks can be used independently. To request the search tools please visit: UCLPartners Proactive Care Frameworks - UCLPartners

They can also be used in conjunction with CVDACTION

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Background to the Frameworks

The Challenge of Long-Term Condition Management in Primary Care

Historical challenge in long term condition care

- Late diagnosis, suboptimal treatment, unwarranted variation
- Lack of self-management support
- Holistic care not always provided

Real World Primary Care:

- Complexity, multimorbidity and time pressures
- Soaring demand and shifting priorities
- Winter pressures

Pandemic impact:

- Disruption of routine care in long term conditions
- Risk of poorer outcomes for patients and health inequalities
- An increase in health care demand

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UCLPartners Proactive Care Frameworks Address Core Challenges in Primary Care

Aim

Help people with long term conditions to stay well longer

Objectives

1. Mobilise data - Identify patients whose care needs optimising and prioritise those at highest risk
2. Harness wider workforce - standardise delivery of holistic proactive care by wider primary care team
3. Support GPs to safely manage workflow, improve care and outcomes by releasing capacity

Framework components

- ✓ Risk stratification & prioritisation tools
- ✓ Locally adaptable resources to support real world management
- ✓ Systematic use of wider primary care team (eg ARRS* roles) to deliver structured support for education, self-management and behaviour change

Framework Development

- Led by primary care clinicians
- Based on NICE guidelines and clinical consensus
- Patient and public support

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*Additional Roles Reimbursement Scheme

Why Cholesterol? – The Case for Change

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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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Stratification and Management of Cholesterol

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Cholesterol – Secondary Prevention (pre-existing CVD)

ARRS[$] roles/ 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

*** Priority 3 aligns with QOF 23/24 and will be updated from Apr 24 to align with NICE guidance and any future QOF indicator/s.

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[$]ARRS = Additional Roles Reimbursement Scheme

Cholesterol –Primary Prevention (no pre-existing CVD)

ARRS[$] roles/ 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.

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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;

[$]ARRS = Additional Roles Reimbursement Scheme

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. Icosapent ethyl in secondary prevention
12. Familial Hypercholesterolaemia (FH) Detection and Management in Primary Care

Lipid Optimisation Pathway for Secondary Prevention[1]

Is the patient on high dose, high intensity statin[3]?
(atorvastatin 80mg daily or rosuvastatin 20mg daily)

Yes

No

Initiate / increase to high dose high intensity statin[2,3,4] if possible
and re-enforce lifestyle and diet measures

Review within 2 to 3 months
Is LDL-chol ≤ 2mmol/L or non-HDL ≤ 2.6mmol/L?[1]

Yes

No

Check adherence to statin and lifestyle[1]
Consider intensifying therapy[4]

Consider adding ezetimibe[4] 10mg daily to maximum tolerated statin to reduce CV risk, even where the lipid target has been achieved.[1]

Consider ezetimibe 10mg daily. Reassess within three months.

Assess eligibility for injectable therapies:

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

OR

- **PCSK9i (mAB)[5]** if LDL-C > 4mmol/L (or > 3.5mmol/L if FH or recurrent CV events)

If statin intolerant – offer ezetimibe. Reassess within 2 to 3 months and, if not achieving target, **consider bempedoic acid and injectable therapies** in line with eligibility criteria.[1]

Review annually, assessing treatment to target, adherence to drugs and offering support for diet and lifestyle measures

Check fasting triglyceride levels & manage according to national guidance.

At any point consider iscosapent ethyl in addition to statins +/- other lipid lowering therapies, **if fasting triglycerides ≥1.7 mmol/L AND LDL > 1.04 mmol/L and ≤2.6 mmol/L**

Lipid lowering therapies should be offered to all patients with established CVD[1]

1. NICE NG238: Cardiovascular disease: risk assessment and reduction, including lipid modification
2. Dose may be limited, for example if:
   - CKD: eGFR<60ml/min – recommended starting dose - atorvastatin 20mg
   - Drug interactions
   - Drug intolerance
   - Older age / frailty / end of life
3. See statin intensity table.
4. Use shared-decision making and incorporate patient preference in treatment and care decisions.
5. NICE Guidance: Evolocumab, Alirocumab

Monitoring statin therapy	
Initiation	Full lipid profile, LFTs
Within 3 months	Lipid profile, LFTs
Annually	Full lipid profile , LFTS (first year only)

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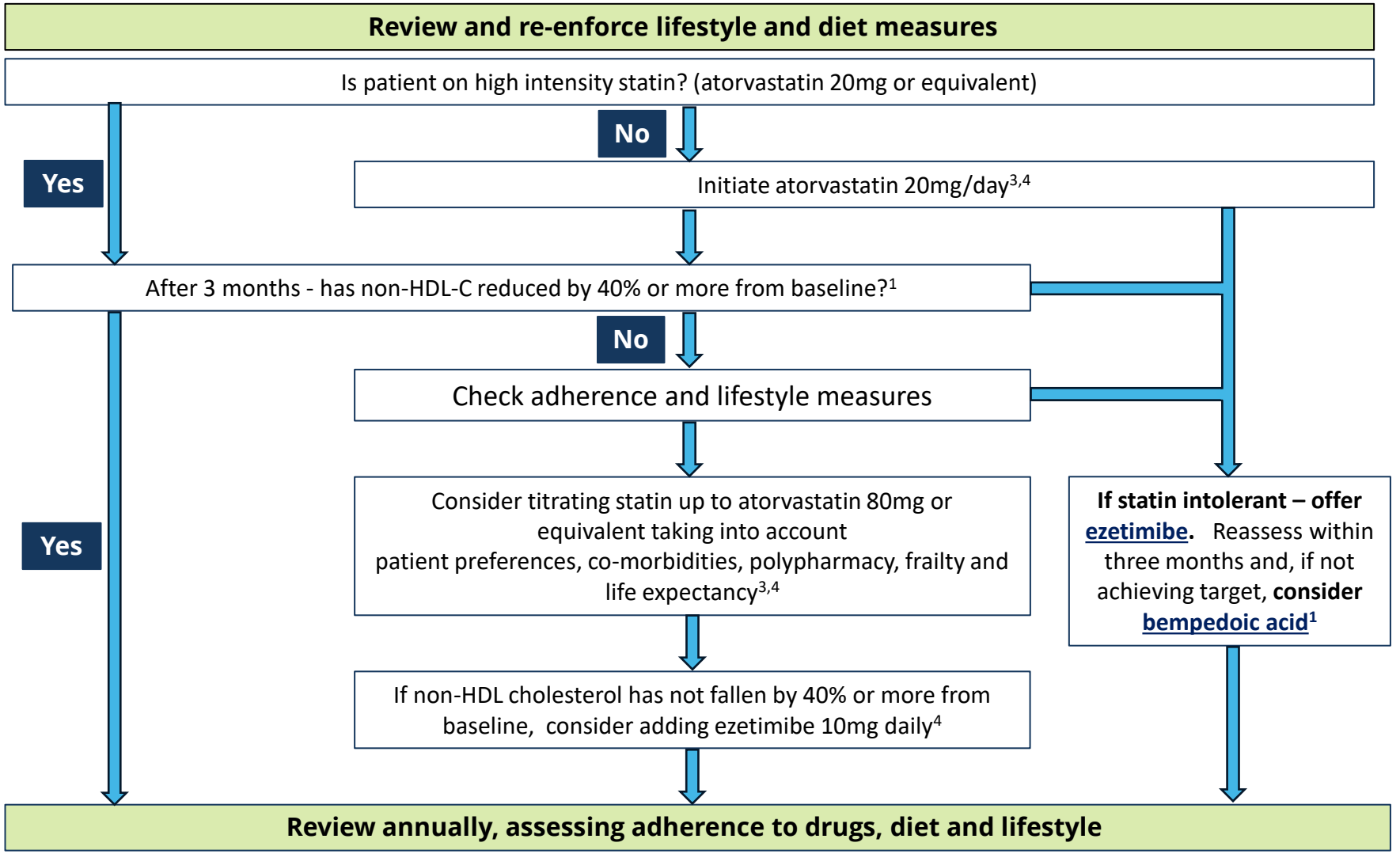
Optimisation Pathway for Patients with High Cardiovascular Risk – Primary Prevention[1,2]



Primary prevention should be offered to all patients with a QRisk ≥ 10% after addressing lifestyle modification (It may also be considered in individuals with QRIsk < 10%)[1]

Optimal High Intensity Statin for Primary Prevention	
Atorvastatin	20mg
Rosuvastatin	10mg

1. NICE NG238: Cardiovascular disease: risk assessment and reduction, including lipid modification
2. High cardiovascular risk:
   - QRisk >10% in ten years
   - CKD 3-5
   - Type 1 Diabetes for >10 years or over age 40
3. See statin intensity table.
4. Use shared-decision making and incorporate patient preference in treatment and care decisions.

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Statin Intolerance Pathway

Important considerations

- Most adverse events attributed to statins are no more common than placebo[1]
- Consider food and drug interactions which may be contributing to adverse effects – see Summary of Product Characteristics (SmPC)[2,3]
- 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

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

1. (Collins et al systematic review, Lancet 2016)
2. SmPC: Atorvastatin https://www.medicines.org.uk/emc/product/5274/smpc#gref
3. SmPC: Rosuvastatin https://www.medicines.org.uk/emc/product/4366/smpc#gref

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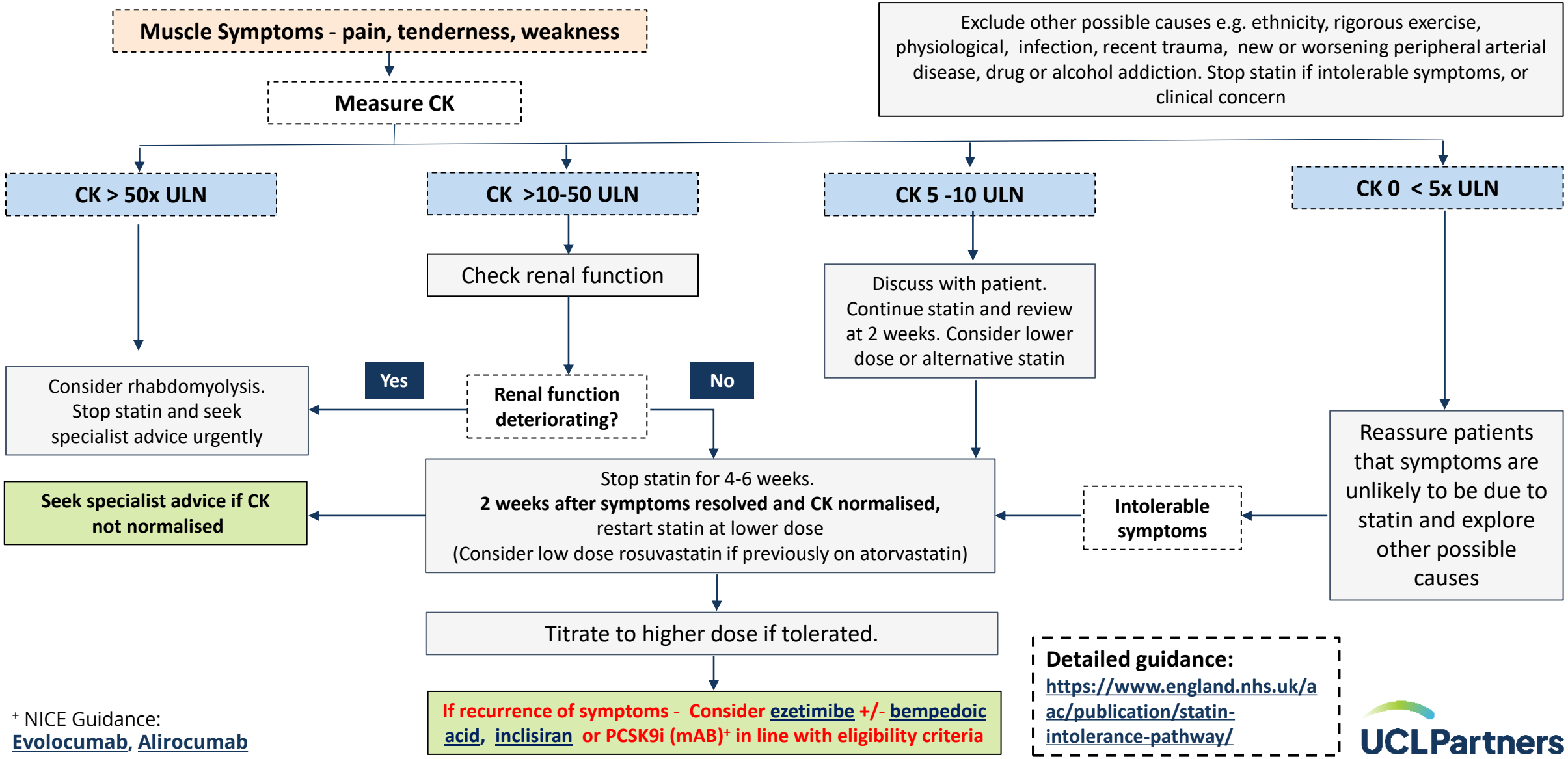
Muscle Symptoms Pathway



+ NICE Guidance:
Evolocumab, Alirocumab

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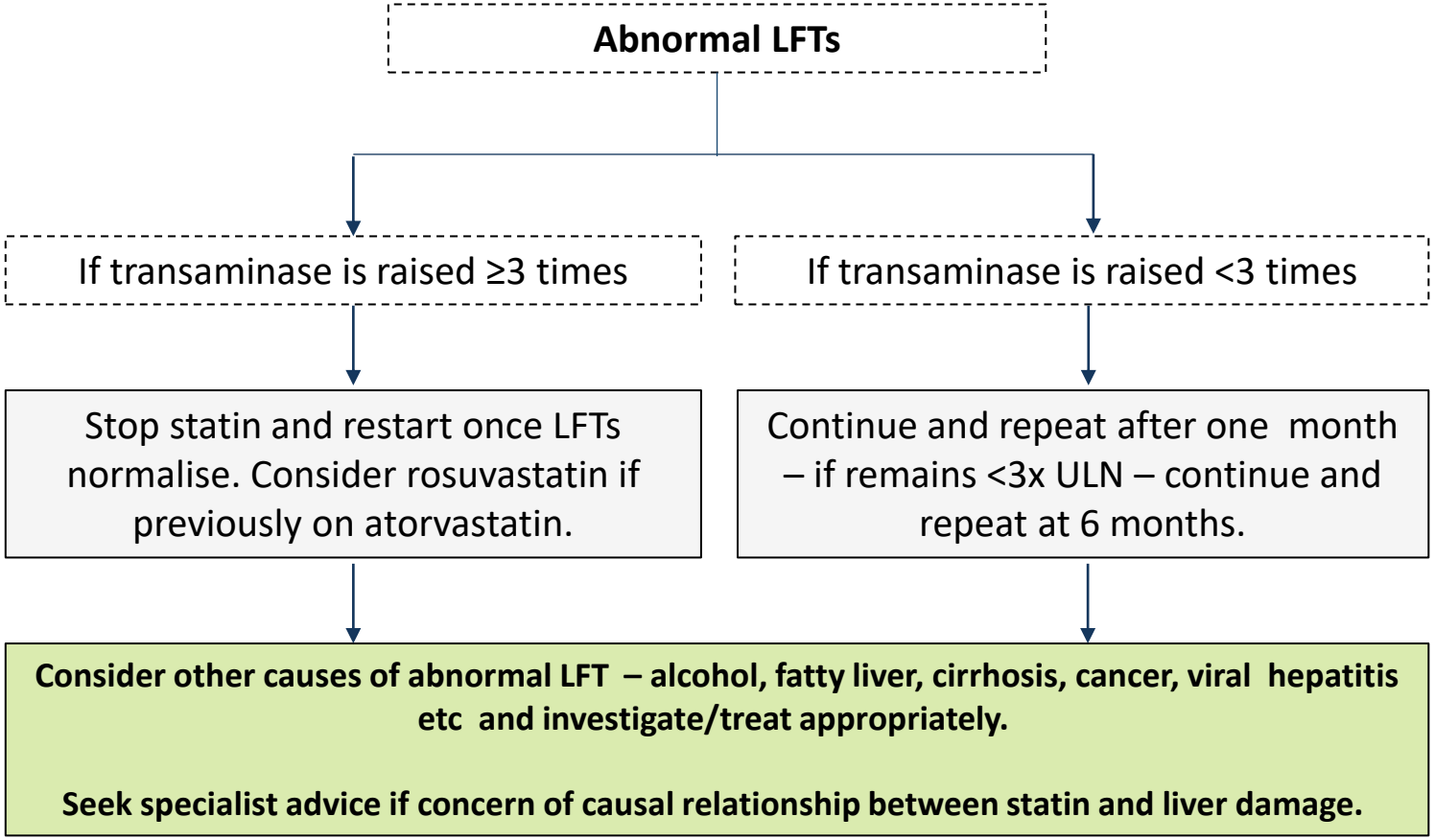
Abnormal Liver Function Test (LFT) Pathway



Check liver function at baseline, within 3 months and at 12 months after initiation of statin therapy.

- 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.

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Shared Decision-Making Resources

Benefits per 10,000 people taking statin for 5 years	Events avoided
Secondary Prevention: Major CV events* avoided in patients with pre-existing CVD & a 2mmol/l reduction in LDL	1,000
Primary Prevention: Major CV events* avoided 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

**Major CV events = CV death, non-fatal myocardial infarction and non-fatal stroke*

Shared decision-making resources:

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

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

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

*CV events defined as death, non-fatal MI and non-fatal stroke

Drug class	NICE approved indication	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. Side effects are usually mild and transient.
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 . Injection site reaction reported (NNH - 167[11] and 58[12]).
Bempedoic acid	For use where statins are not tolerated only 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]	One CV outcome study . For every 10.000 patients treated for 3 years. Approximately 130 major CV events* avoided.[14] NNT = 77	Safety data from trials of up to 3 years. Increased risk of hyperuricemia (NNH = 19) , gout (NNH = 100) and cholelithiasis (NNH = 100) reported.[14]
Inclisiran	Secondary prevention in patients who meet eligibility criteria	S/C injection administered 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. Injection site reactions reported (NNH = 12).
Icosapent ethyl	Secondary prevention in patients on statins who meet eligibility criteria	Two capsules taken orally twice daily	An 18% reduction in triglyceride levels when added to statin therapy	One CV outcomes study in secondary prevention. Given in addition to statin therapy. For every 10,000 people treated for 4.9 years approximately 370 major CV events would be avoided. NNT over 4.9 years =28 [15]	Safety data established in a trial over 5 years. Small increase in hospitalisation with atrial fibrillation / flutter (NNH =- 100) and increased bleeding (NNH = 167) [15]

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. 14. N Engl J Med 2023; 388:1353-1364. https://www.nejm.org/doi/full/10.1056/nejmoa1812792 . 15. N Engl J Med 2019; 380:11-22

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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**.

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*Technology Appraisal

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**.

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*Technology Appraisal

Icosapent ethyl in secondary prevention (NICE TA* recommendation)

Icosapent ethyl is recommended as an option for reducing the risk of cardiovascular events:

- in adults with established CV disease who are taking statins
- where fasting triglycerides are ≥ 1.7 mmol/litre or above AND where LDL-C levels are >1.04 mmol/litre and ≤2.60 mmol/litre

Dosage

- The recommended daily oral dose is 4 capsules taken as two 998 mg capsules twice daily. Icosapent should be taken with or after a meal. The capsules should be swallowed whole

Evidence of effect

- In the REDUCE-IT study, icosapent ethyl lowered triglyceride levels by 18%, resulting in a 26% reduction in major cardiovascular events (Death, MI, stroke)
- Icosapent ethyl should be used with caution in patients with known hypersensitivity to fish and/or shellfish

Adverse Reactions

- The most frequently reported adverse reactions associated with icosapent ethyl were bleeding (11.8%), peripheral oedema (7.8%), atrial fibrillation (5.8%), constipation (5.4%), musculoskeletal pain (4.3%), gout (4.3%) and rash (3.0%)

More information on icosapent ethyl can be found at: **https://www.medicines.org.uk/emc/product/12964/smpc**

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*Technology Appraisal

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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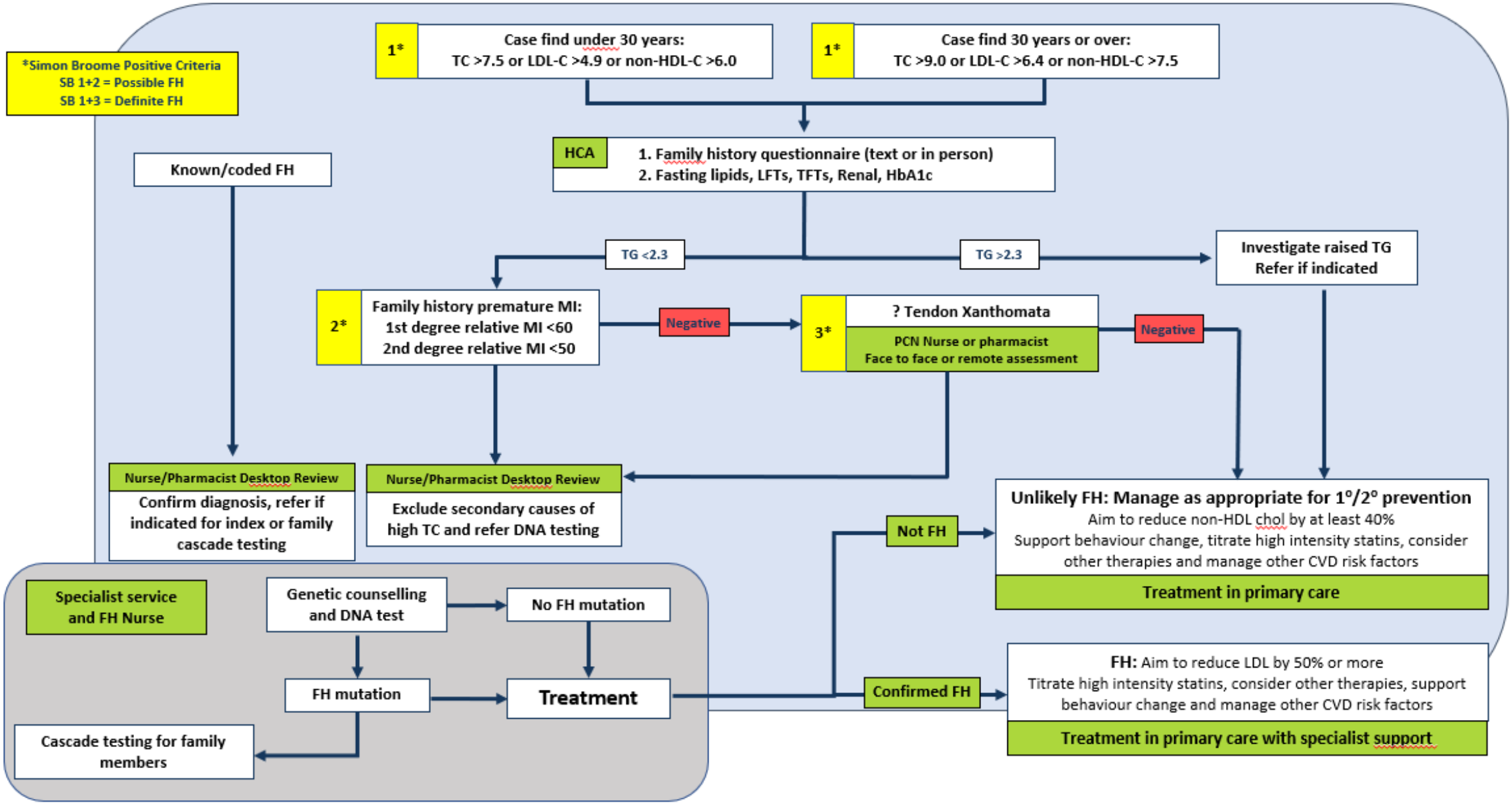
Familial Hypercholesterolaemia Pathway



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 (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 (how they are related to you) and how old were they when they had the heart attack?

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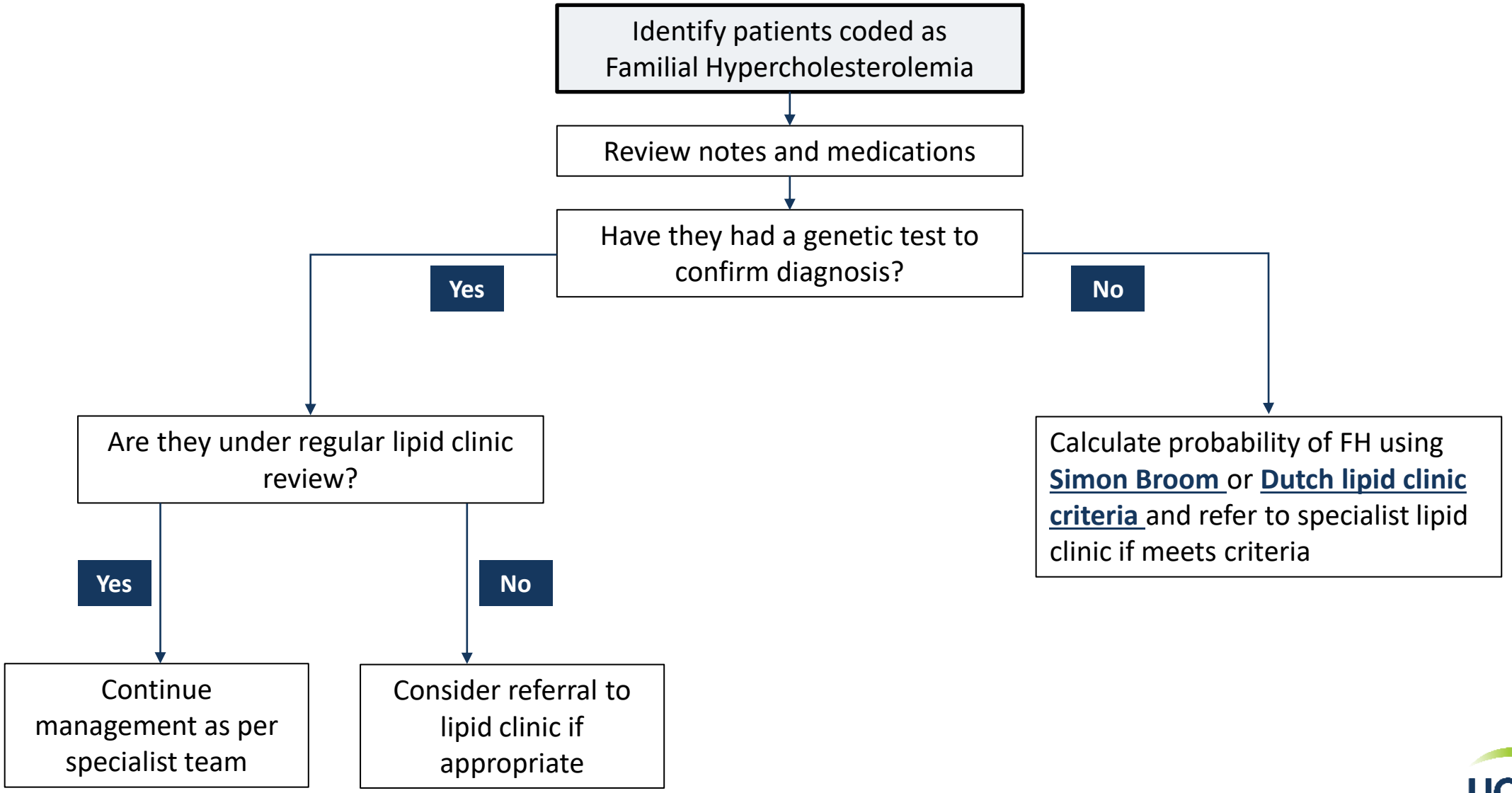
Desktop Review for People with Coded FH



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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.

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.

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

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

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

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 Proactive Care Framework for hypertension for detailed guidance

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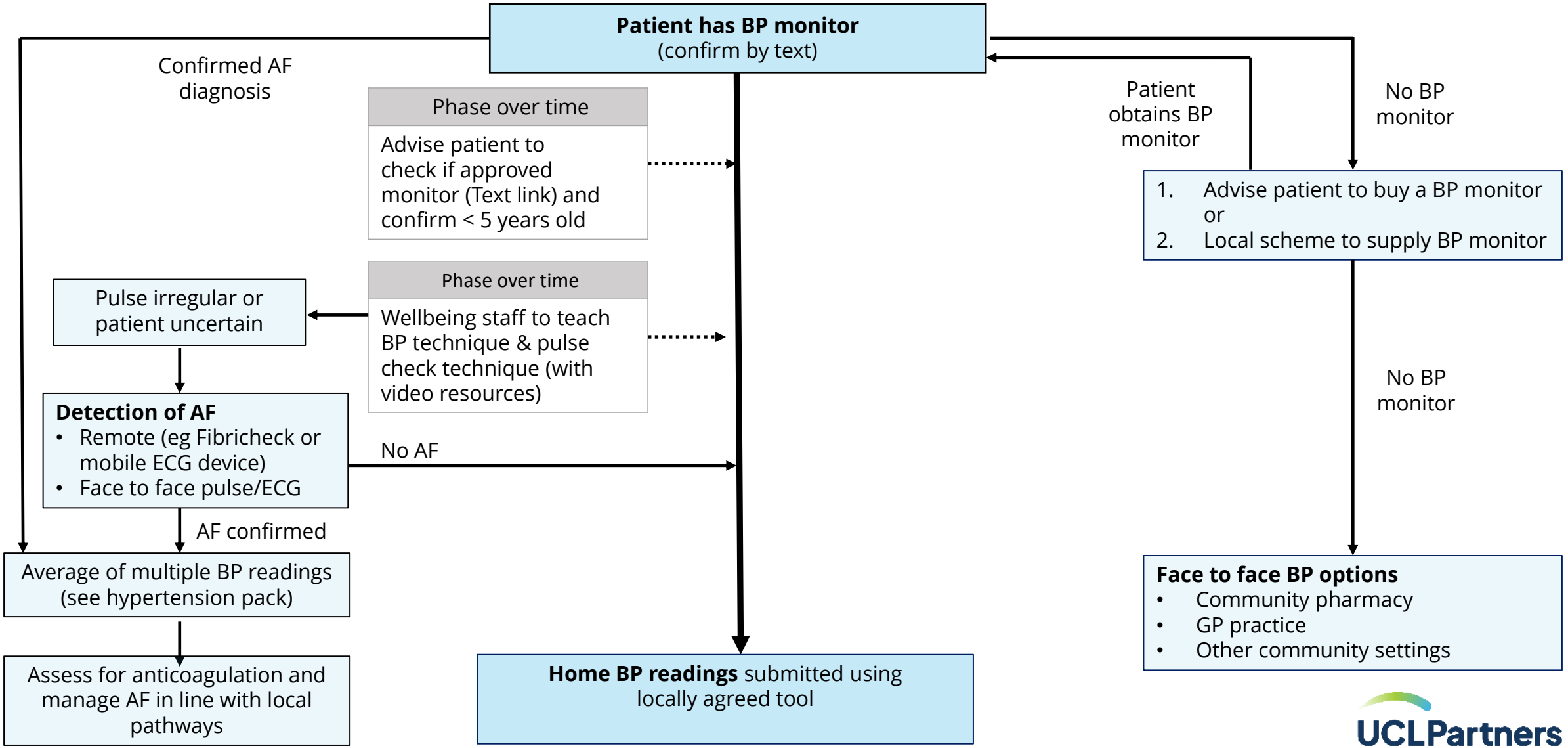
Home Blood Pressure Monitoring Pathway



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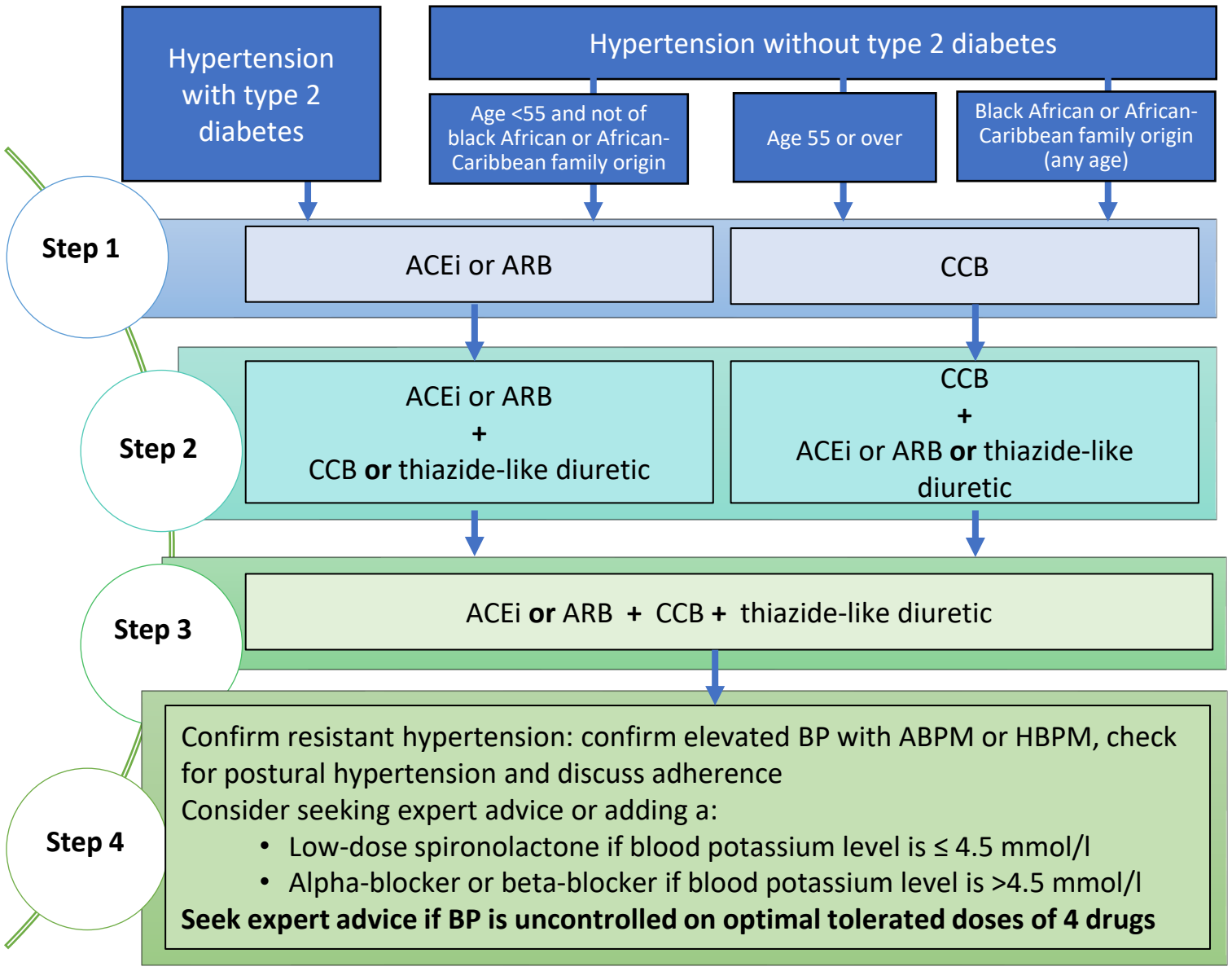
NICE Hypertension Treatment Pathway (NG136)



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

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Atrial Fibrillation in Patients with Hypercholesterolaemia

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://uclpartners.com/our-priorities/cardiovascular/proactive-care/cvd-resources/

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Digital Resources

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 for the Integrated Care Systems within our geography covering the following components. The resources below can be accessed via the UCLP website: **Proactive care frameworks – UCLPartners**.

UCLPartners is one of 15 **Health Innovation Networks** (HINs) across England and all 15 have a priority around CVD. Please reach out to your local HIN to understand what support they might be able to provide. Please note each varies in its approach and offer.

Search and stratify	**Comprehensive search tools** for EMIS and SystmOne to stratify patients • Pre-recorded webinar as to how to use the searches. • Online FAQs to troubleshoot challenges with delivery of the search tools.
Workforce training and support	**Training tailored to each staff grouping (e.g. some ARRS* roles) and level of experience** • **Delivery:** Scripts provided as well as 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 inhaler technique; correct BP 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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References

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 2020

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Thank you

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UCLPartners.com/newsletter

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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
8	8.0	•Update to treatment target to align with NICE and AAC guidance	Dec 2022	Dec 2023
9	9.0	•Included NICE guidance on icosapent •Updated secondary prevention pathway to align with QOF treatment targets •Updated summary of lipid lowering therapies table to include icosapent	Aug 2023	Aug 2024
10	10	•Updated secondary and primary prevention pathways to align with NICE guidance	Jan 2024	Jan 2025
10	10.1	•UCLP template updated	March 2024	March 2025
11	11	•Secondary care pathway slide amended to included statin monitoring info and high intensity statin examples incorporated within pathway.	June 2024	Jan 2025