Evaluation of a Lipid Management Transformation and Optimisation Project in Primary Care, South East London

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Health Innovation Network South London

South East London Integrated Care System

AMGEN

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Heritage PCN
Unity PCN
Hills, Brooks, and Dales PCN
North Southwark PCN
Eltham PCN
Fiveways PCN

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1. Executive Summary

1.1. Background

The NHS Long Term Plan (2019) highlights the need for better lipid management, including increased cardiovascular disease (CVD) risk assessment, statin uptake for primary prevention, and improved Familial Hypercholesterolaemia (FH) detection, diagnosis and management. Since cholesterol management targets were removed from the Quality and Outcomes Framework (QOF) incentive in 2013/14, statin monitoring and lipid management for secondary prevention of CVD have declined.

The South East London (SEL) lipid transformation and optimisation project aims to redesign local lipid management pathways, maximising patient outcomes and aligning with the NHS London region's broader vision for CVD prevention. Despite NICE guidance supporting high-intensity statins, at the start of the project, over 40% of patients in SEL received low or moderate-intensity statins or alternative treatments.

This mixed-methods evaluation of the lipids transformation and optimisation workstream employed quantitative and qualitative data collection and analysis techniques to understand the early impact of optimised lipid management within primary care networks (PCNs). Quantitative data included descriptive analyses of open-source prescribing data, patient record data, and FH coding, while qualitative data involved semi-structured interviews and thematic analysis with participating HCPs to explore their experience and knowledge of managing lipids in primary care.

1.2. Key findings

The evaluation highlighted several key findings such as:

Improved prescribing trends: All six PCNs increased the percentage of prescribed high-intensity statins in CVD primary and secondary prevention between the baseline period in January 2022 and follow-up in March 2023. Compared to the previous year, 600 more patients received ezetimibe during the project duration in SEL.

Notable improvements in primary and secondary prevention strategies: PCNs demonstrated progress in targeting priority patients for primary and secondary prevention strategies, with positive shifts in the distribution of patients across risk categories.

Challenges in patient engagement and education: Patient anxiety and resistance to treatment presented challenges, highlighting the need for clear communication and a compassionate approach.

Impact on staff: Clinicians reported personal knowledge development, exposure to expert knowledge, and a broader understanding of lipid management, contributing to their growth in competence and confidence in lipid management.

Positive experiences and acceptability: Clinicians had broadly positive experiences, appreciating the opportunity to better integrate into their PCN roles and build stronger connections with patients.

1.3. Key Recommendations

Primary Care's role in lipid management
Primary Care should retain a key role in identifying patients with high-risk of cardiovascular disease and FH, and optimising lipid management where possible. Primary Care are also key to ensuring appropriate referrals and triage mechanisms are in place to lipid specialists and/or cascade testing.

Patient education and engagement
Patient-specific and targeted educational materials and communication strategies to improve patient understanding of lipid management and statin therapy should be introduced and standardised. Where templates have been created by individual PCNs or relevant networks, these should be shared widely across the Community of Practice and with future test-bed sites.

Wider PCN engagement and support
Integrated Care Board (ICB) leaders should continue to actively support the lipids optimisation workstream by providing necessary initial resources, coordination, and data analysis support. Clinicians should actively engage with the wider PCN group to maintain open communication and ensure progress is aligned across all practices.

Professional development and training
Clinicians should manage their continuous learning to stay updated with the latest information on lipid management through varied avenues such as workshops and continued professional development programmes on relevant topics.

Review of Familial Hypercholesterolemia (FH) coding
Incorporating a review of current FH-coded patients into the pathway is recommended to address coding inaccuracies identified in two PCNs from the first wave test-bed sites. Utilising a Standard Operating Procedure developed independently by one of the PCNs can standardise the review process while investigating the causes of coding errors could help prevent future repetition of these.

Match patient data at cohort level
Future evaluations should ensure patient data is matched at the cohort level between baseline and follow-up periods. This will allow for more accurate comparisons and assessment of the lipids optimisation project's impact on specific patient groups over time.

UCLPartners Search and Stratification Tools could be updated to extract cohort-level data, rather than population-level data. Where individual practices have created their own effective search templates or protocols, these should be shared among the wider Community of Practice.

2. Background

The NHS Long Term Plan recognises the need for improvements in lipid management, with ambitions to increase cardiovascular disease (CVD) risk assessment, promote statin uptake for primary CVD prevention, and enhance familial hypercholesterolaemia (FH) detection. Since the removal of cholesterol management from the Quality and Outcomes Framework (QOF) in 2013/14, there has been a decline in statin prescribing, monitoring and management for secondary prevention.

The South East London (SEL) Lipid Transformation and Optimisation Project (known as Predict and Prevent locally) has aimed to redesign the local lipid management pathway, ensuring patients receive timely and appropriate care from the right healthcare professional. By adopting a 'test and learn' approach, the aim is to transform lipid management across SEL to maximise patient outcomes and align with the broader vision for CVD prevention in the London region.

Despite NICE guidance supporting high-intensity statins, over 40% of patients in SEL receive low or moderate-intensity statins, or alternative treatments when statins are unsuitable or ineffective. In late 2021, the Health Innovation Network was asked to support the implementation of lipids optimisation in SEL as part of the Academic Health Science Network's wider role in supporting lipid management across England. The project's objectives were to:

1. Implement patient searches, lipid management guidance, and pathways in primary care practices.
2. Enhance lipid management and cardiovascular risk reduction for patients within primary and secondary prevention cohorts.
3. Review and manage patients coded with FH or suspected FH, addressing secondary causes, facilitating specialist referrals for genetic diagnosis, and conducting coding reviews.
4. Improve knowledge and confidence in lipid management among primary care professionals, addressing statin hesitancy and intolerance, cardiovascular risk reduction, and therapy escalation.
5. Increase the uptake of second-line therapies in accordance with NICE Guidance after optimising high-intensity statin treatment where feasible.

2.1. Overview of Lipids Optimisation Pathways

2.1.1. Primary Prevention

Primary prevention refers to targeting patients with no established CVD but with high CVD risk and fall into one of four risk categories based on Qrisk scores and other cardiovascular risk factors. Qrisk scores are a tool used to calculate a person's risk of developing CVD over the next 10 years. The calculation for QRisk scores is complex and is based on a variety of factors such as sociodemographic and lifestyle factors. Qrisk scores are represented as percentages with higher scores representing a higher risk of CVD within the next 10 years. For example, a Qrisk score of 20% indicates a 20% chance of developing CVD in the next decade. Table 1 displays the priority groups within the primary prevention pathway and a description of these.

Table 1 Primary Prevention Pathway Priority Groups

Priority Group	Description
Priority group 1 [highest risk]	Qrisk above 20% or CKD or Type 1 diabetes **not on statin**
Priority group 2	Qrisk 15-20% **not on statin**
Priority group 3	Qrisk 10-15% **not on a statin**
Priority group 4 [lowest risk]	Qrisk below 10% **not in high-intensity statin**

The primary prevention pathway comes with recommendations for lifestyle changes, dietary measures, and drug therapy (where appropriate) as key interventions to reduce cardiovascular events. The full primary prevention pathway is described in Appendix A.

2.1.2. Secondary Prevention

Patients are also categorised into four priority groups in the secondary prevention pathway based on their risk levels. Table 2 displays priority groups within the secondary prevention pathway and a description of these.

Table 2 Secondary Prevention Pathway Priority Groups

Priority Group	Description
Priority group 1 [highest risk]	CVD **not on a statin**
Priority group 2	CVD **not on a high-intensity statin**
Priority group 3	CVD **on a sub-optimal dose of statin**
Priority group 4 [lowest risk]	CVD **on a high-intensity statin** with non high-density lipoprotein (HDL) above 2.5mmol/L

This pathway recommends offering high-intensity statins, escalation of therapy to achieve treatment targets, and support for self-management of other modifiable risk factors related to CVD health e.g. smoking, diet and exercise. The full secondary prevention pathway is described in Appendix B.

2.1.3. Familial Hypercholesterolaemia

The Familial Hypercholesterolaemia (FH) pathway aims to detect cases of FH in individuals aged 30+ or under 30 years of age. Individuals who meet specified thresholds of blood cholesterol levels for the age bands are referred for further blood tests within primary care, a review of family history, secondary causes of high cholesterol levels and FH clinical signs, and then to a lipid clinic for genetic testing/confirmation from there.

In addition to the pathways, PCNs were provided with UCLPartners Search and Stratification Tools[1,2,3] to extract data relevant to the aims of the project and to define priority areas for lipid management. These data provided an overview of patient list sizes for each of the primary and secondary prevention category groups, in addition to patient lists for individuals coded with/ currently known FH.

[1] UCLPartners-Search-Tool-–-Familial-Hypercholesterolaemia_2021August.pdf (pcdn.co)
[2] Cholesterol-Search-Criteria-July-2022.pdf (pcdn.co)
[3] Search and stratification tool downloads - UCLPartners

3. Evaluation approach

3.1. Purpose

The aim of the evaluation was to understand the early impact and lessons learnt from approaches to improve lipid management in primary care. Specifically, the evaluation sought to:

1. Understand the different approaches taken within primary care to improve lipid management associated with the project;
2. Explore the factors influencing the implementation of these approaches (to guide spread and adoption);
3. Determine (early) impacts of approaches to improve lipid management;
4. Explore primary care staff's knowledge and confidence in lipid management;
5. Understand primary care staff's experience and acceptability of the approaches to improving lipid management;
6. Understand patient experience and satisfaction with the approaches within primary care for improving lipid management;
7. Identify areas for improvement in enhancing lipid management within primary care.

3.2. Scope

The evaluation looked across six Primary Care Networks (PCNs) that undertook different approaches to improve lipid management within the SEL programme funding between January 2022 and March 2023.

3.3. Methods

This mixed-methods evaluation of the lipids optimisation workstream employed both quantitative and qualitative data collection and analysis techniques to provide a comprehensive understanding of the programme's impact on lipid management within PCNs. Appendix D outlines the evaluation objectives and associated data collection methods and sources.

3.3.1. Quantitative Data Collection and Analysis

Descriptive analysis of open-source prescribing data
To examine the changes in high-intensity statin prescriptions, a descriptive analysis was conducted of open-source prescribing data[4]. These data were analysed at the PCN level, comparing the percentages of total statins prescribed between baseline (2022) and follow-up (2023) time points. In addition, data pertaining to Ezetimibe prescribing was also reported in relation to the number of patients prescribed during the project period.

Descriptive analyses of patient record data
Descriptive analyses were performed of patient record data per PCN across primary prevention risk category groups (1-4) and secondary prevention risk category groups (1-4) between baseline (2022) and follow-up (2023). This analysis aimed to assess changes in risk category prevalence over time and any potential shifts in the distribution of patients across these categories.

[4] https://www.nhsbsa.nhs.uk/access-our-data-products/epact2

Descriptive analyses of Familial Hypercholesterolemia (FH) coding
Descriptive analyses were conducted of patient record data per PCN for familial hypercholesterolemia coding, focusing on the number of potential FH instances for patients aged below 30, aged 30 and above, and the number of diagnosed patients. This analysis aimed to provide insights into the prevalence and diagnosis of FH within the participating PCNs.

3.3.2. Qualitative Data Collection and Analysis

Vignettes
Vignettes completed by each PCN in the initial phase of the project implementation (circa April 2022) were reviewed and used to tailor the interview questions to each PCN. These vignettes provided descriptive text about the initial approaches and challenges to implementation experienced by the PCNs at the start of the project.

Interviews
Five interviews were conducted with clinicians from participating PCNs between March and April 2023. The interviews were conducted one-to-one or in pairs, depending on the availability and preferences of the participants. The interview guide was created with input from the ICB lead to align with the aims of the evaluation. To ensure fidelity and support the use of quotes in the analysis, all interviews were recorded and transcribed using MS Teams and manually corrected.

Thematic analysis
A framework based on the objectives of the evaluation was used to conduct a thematic analysis of themes and subthemes that emerged from the interview data. This approach allowed for the identification of common patterns and trends across the interviews, as well as the exploration of individual experiences and perspectives, providing a nuanced understanding of the lipids optimisation workstream's impact on clinicians and patients within the participating PCNs.

4. Findings

4.1. Approaches to implementation

The six Primary Care Networks (PCNs) were each given £5,000 to aid co-ordination of the Predict and Prevent project in March 2022. As the project commenced, PCNs initially documented which pathway they would focus on. Table 3 lists each PCN and their target pathway between January 2022 and March 2023.

Table 3 Lipids pathway priorities

PCN ID	Population	Lipid Pathway
PCN 1	41791	Primary and Secondary Prevention
PCN 2	69614	Secondary Prevention
PCN 3	29546	Primary and Secondary Prevention
PCN 4	199561	FH detection
PCN 5	59313	Primary and Secondary Prevention and FH detection
PCN 6	39825	Secondary Prevention

PCNs took a multidimensional and collaborative approach to implementation, which was iterated and adapted during the project.

Search and identification of patients
The clinicians initially generated search lists to identify patients who could benefit from the lipids optimisation workstream. Using the UCLPartners Search and Stratification Tools, they compiled a list of patients with varying lipid management needs, such as those who required statin initiation or changes in statin intensity in line with the Primary and Secondary Prevention pathways or FH coding. This initial step laid the groundwork for targeted intervention and communication with patients.

"The reason we decided to pick Secondary Prevention was 1) we had quite a large group on medium-intensity and low-intensity statins and 2) we thought we could start the conversation by saying we want to switch you from simvastatin 20 to something better might be actually easier than trying to convince people you know to actually start" GP

"It was the UCLP searches. So yeah, so we just used those searches and we ran them at the beginning and then we rerun them" PCN Pharmacist

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Allocation of roles and resources
Clinicians collaborated to allocate roles and responsibilities within their PCN, including pharmacists, pharmacy technicians, nurses, healthcare assistants (HCAs), and practice managers. The process involved presenting the idea to the PCN, obtaining permission, and establishing a lead for each aspect of the project.

"I was the lead for all aspects of it across the PC...I would kind of not work out how I was going to do it, but have a little bit of a look at the figures and see how large the piece of work was, and work out what we were going to do. And then at other PCN meetings, I would then divulge that to all the PCN leads. There was a GP lead at each PCN meeting, you've got the PCN clinical director, and you got the practice managers there. So, we mainly were utilising the pharmacists across the PCN to be the sort of champions as such." PCN Pharmacist

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Patient communication and engagement
Various methods were employed to communicate with patients, such as cold calls, text messages, and Accurx messaging. Clinicians reported that an initial text message introducing the issue, followed by a phone call, improved patient receptivity. The communication process aimed to raise awareness, provide information, and encourage patients to actively participate in their lipid management.

"In terms of the actual contact method between the practices and patients, so mostly it was done on the phone." GP

"We just sent a small list of invites out through Accurx saying that you are invited to repeat a yearly blood test, a cholesterol blood test. Please liaise with the with your surgeries to collect the form and you all started from there. So then automatically we do a specific search and what we would see is how many forms were issued out and then we went by that number. You know how many needed calling at some point we even invited them in and involved the care coordinators to just call patients that were not engaging with us." PCN Digital transformation lead and practice nurse

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Data collection and analysis
Clinicians utilised colleagues in support roles (IT for example) to gather and analyse the data required for patient review. This process involved creating Excel spreadsheets with the relevant patient data, including Simon Broome criteria[5] and secondary prevention factors. Data analysis also involved identifying and rectifying any coding errors that could impact patient outcomes.

"I guess the key thing was we tried to put an Excel spreadsheet together that was going to capture all the data that we required for the patients that we were going to review. And so that was all the Simon Broome criteria that look at preventing the secondary causes. So, looking at triglycerides looking at thyroid levels and alcohol." Pharmacist

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

"We got one of our IT colleagues to sort of try and pull the data off for the pharmacist so that you know, we wouldn't have to individually be going into patient records but with his expertise, he was able to pull most of the data and then any data that was outstanding the pharmacist needed to go to individual patient records." Pharmacist

Regular check-ins and review
Regular check-ins and review meetings with healthcare professionals, such as nurses, healthcare assistants (HCAs), and clinical leads, facilitated the ongoing monitoring of patient progress. The check-ins helped identify any issues that arose during the implementation, allowing for quick resolution and continuous improvement of the workstream.

"We arranged regular meetings with nurses and HCAs." Digital transformation lead and practice nurse

Iterative implementation and adaptation
The implementation of the lipids optimisation workstream involved an iterative process with a focus on specific cohorts of patients. As the project progressed, clinicians adapted their approach to meet the needs of different patient groups and to re-energise the project. This allowed for a more targeted and efficient implementation.

"Obviously we know that the list [related to the first priority groups] wasn't finished, but it was just helpful to sort of re-energise the project to sort of be like, right, OK and also be like, 'right this month we are cleaning the familial hypercholesterolemia register. This is how you do it. Here's the search.' And then next month, what we're looking at is the secondary prevention patients who aren't on a statin. Here's the search. Here's the list of patients." PCN pharmacist

4.2. Factors influencing implementation

This section highlights the key factors influencing the implementation of the project.

Communication and collaboration
Regular PCN meetings and the facilitated Community of Practice fostered an environment of open dialogue and enabled participants to discuss progress, address challenges, and establish deadlines for different stages of the project. This collaborative culture not only facilitated the sharing of knowledge among clinicians, nurses, and pharmacy staff but also allowed issues to be identified and resolved efficiently and effectively.

"At the PCN meeting, we would feedback on any issues, any concerns and then what the next part was that we were going to focus on. So it was trying of create a deadline for them with each pathway. So that it didn't just stall." PCN Pharmacist

"Every so often, every three weeks, four weeks we would run like a big meeting with all the nurses, pharmacists and then we'll explain to them what is the next step, how many patients have been reviewed so far and so on." PCN Pharmacist

Technology and staff resources

Staff reported the valuable role technology and adequate staffing was in delivering the project. Text messaging served as an effective means of communication for providing patients with step-by-step guidance, while search templates and Excel spreadsheets facilitated efficient data management. Additionally, the implementation of self-booking options for patients improved accessibility and convenience. The availability of temporary registrars offered further support, allowing for the delegation of tasks and more efficient allocation of resources.

"Any patient that would come through the Accurx would go through the self-booking system" GP

"We're a teaching practice specifically here. I have access to two F2 doctors and two registrars. We agreed that they would help with those projects, so that made the split a lot easier so I could be like 'you're gonna do primary prevention one. You're doing to do primary prevention 2.' And they would have little patient lists that they could work through to do like mini audits on for their time. They're only here 12 weeks or what have you. So that kept things moving. And then once they've finished that would go to the next F2 doctor" PCN Pharmacist

System alignment

The alignment of the workstream with Investment and Impact Fund[6] targets and the wider ICB plan for cardiovascular prevention provided a sense of urgency and motivation for the PCN practices to engage in the project. This external support network, including clinical specialists, clinical academics, and medicines optimisation teams within the ICS provided valuable expertise and resources that contributed to the overall success of the workstream.

"[Lipids] being a target already that's mandated, you know, through the PCN. The fact that we had Investment and Impact Fund targets to do this helped to get it done." PCN Clinical director

"A lot of the medicines optimisation teams within the [Integrated Care System] ICS, they're incentivising a lot of this work in the annual incentives that they put out for practices to take." PCN pharmacist

Training and capacity building

A variety of training methods and resources were reported by clinicians in the lipids optimisation workstream. Some participants referred to attending lipid webinars, which covered both data for practices and the introduction of new guidelines. Participants were positive about the webinars, reporting that they provided useful and practical information that supported project delivery. Other participants described getting in-house support, such as regular updates at clinical sessions and PCN meetings, where they could share ideas and discuss challenges with colleagues. Some clinicians sought

[6] https://www.england.nhs.uk/primary-care/primary-care-networks/network-contract-des/iif/

information independently through online searches or by reaching out to experts in the field for guidance via their own professional networks. Again, the Community of Practice was also mentioned as a source of training and information dissemination.

"Regular, in-house updates. And mini training, I should say, like 10-minute updates at clinical sessions. Plus, similarly at the PCN meetings." PCN Digital transformation lead and practice nurse

"We had a lipid webinar, where we did go through data for the practices and it was well attended. [It provided] an introduction of SEL guidelines which was useful...There were also some follow-up sessions [via the CoP]." PCN Clinical director

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Participants reported being satisfied with the training they received and found the available resources to be sufficient and did not feel that they needed additional external training. They appreciated the opportunity to learn from colleagues and experts, such as the Integrated Care Board (ICB) clinical lead, who provided valuable support when they encountered difficulties during the Community of Practice. Others found value in attending external webinars and hearing about the experiences of other PCNs, which provided new perspectives and insights.

"They're enjoyable webinars. And I think everyone who did the programme really enjoyed those 3 webinars. Very pragmatic. And really demystified a lot of things. I remember learning quite a few different things." PCN pharmacist

" Especially [ICB lead] was amazing when I got stuck." PCN Digital transformation lead and practice nurse

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Right timing and adaptation

Participants highlighted the importance of seizing the right moment for project implementation and adapting to the ever-changing landscape of healthcare practice. The transition period from the pandemic provided additional time and resources that were effectively utilised for the lipids optimisation workstream.

"At the time we were fortunate enough that we were transitioning from the pandemic and trying to get back into clinical practices. So we did have a bit of scope and time to do this work, but I think now we have to do it now where we're kind of more embedded in our practices and there is an expectation from the practice, the roles and what we're undertaking. It would have been slightly more challenging to try and give that amount of time to that project if it were today." PCN pharmacist

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Time constraints and workload

Clinicians expressed difficulty in allocating enough time to each GP practice within the PCN due to their schedules, which limited their ability to focus on individual patients and follow up as needed. They reported that the process required a large amount of time, particularly in terms of record-keeping, communication, and coordination with patients, which added to the workload burden. As a result, clinicians found it challenging to manage their time effectively, which may have impacted the overall success of the workstream.

"A lot of it was quite labour intensive. You speak to the patient today.. they said OK, do a blood test this and that and then you call them back, but you can't get through. You're not getting them on the phone or you leave a message. So [our clinicians] were going around and around in circles" GP

"It was quite labour intensive in terms of requiring two pharmacists to do the work right at the very beginning because we were very new to the work and understanding what was required and because we needed to sort of cross reference letters with emails records, it did. It required two of us to be on EMIS at the same time to do it so that we can then put an entry in and the entries that we put into the notes, which are part of the standard operating procedure" PCN pharmacist

Patient engagement and education

There was a perception that many patients may not understand the importance of lipid management or have misconceptions about statin medication, leading to resistance or reluctance to start treatment. Clinicians reported they faced challenges in effectively communicating the benefits and risks associated with statin therapy and addressing misinformation. Some of these challenges were as a result of external influence placed on patients from friends, family and sociocultural practices which made it more difficult to broach the subject of starting therapy for example. Furthermore, building trust and rapport with patients is essential, which some participants felt was difficult to achieve over the phone. Participants highlighted the need for improved patient education strategies and effective communication to enhance patient engagement.

"The sort of comments you would hear from the patient…' I don't know. I've read about it and the tablets will cause you problems and I don't want to be a Guinea pig because you're testing it on me'." PCN Digital transformation lead and practice nurse

"Over the phone, if felt like I didn't have the same connection with the patient, if that makes any sense, and you would find that when you would call them they would be like, 'oh, Yeah, yeah.' And then when you explain to them. ' would you be happy to come and see me down? So I'll explain to you and I'll show you the figures'. And you would feel that, you know, you would have a different conversation on the phone and then you would have a totally different, you know, approach when you would have the patient in front of you. And this has happened a few times." PCN pharmacist

PCN staff engagement

Some clinicians experienced initial reluctance from staff at different surgeries due to unfamiliarity with other staff which impacted their ability to effectively communicate with patients or coordinate the workstream within the practice. This highlighted the importance of relationship-building and open communication among clinicians and other PCN staff to create a supportive environment conducive to the success of the workstream.

Conversely, some clinicians reported it challenging to bring the entire PCN group along at the same pace, particularly when they were not physically present at each site daily. The need for better support from PCN managers and other stakeholders in coordinating the workstream, as well as providing timely and appropriate data analysis to monitor progress and identify areas for improvement was identified.

"[There were] competing instructions from different people in positions of clinical authority in different areas." PCN pharmacist

"The main challenge has been bringing the PCN-wide group, along at the same pace. Because you're not physically on-site day-to-day, I'm relying on that distance piece, you know, monthly. And I think sometimes when you've kind of checked back in and like nothing's been done [can be challenging].." PCN pharmacist

Knowledge and expertise

Some clinicians identified a knowledge gap when dealing with historical records, genetic terminology, and specialised lipid management. The importance of having adequate clinical knowledge and expertise to effectively navigate the complexities of lipid management, as well as the need for ongoing professional development and training to ensure that clinicians are equipped with the necessary skills and knowledge to implement the workstream successfully were highlighted.

"I think it was a lack of clinical knowledge of what a specialist lipidologist is going to use in their day-to-day work." PCN pharmacist

"Some of the historical letters sometimes ... We didn't understand the terminology within them. We didn't understand some genetic wording that was used. We didn't understand the jargon." PCN pharmacist

4.3. Early impact of lipid management

In this section, the early impacts of the lipid management approaches implemented in primary care networks will be examined. Table 4 lists the data returns related to each pathway for the six PCNs.

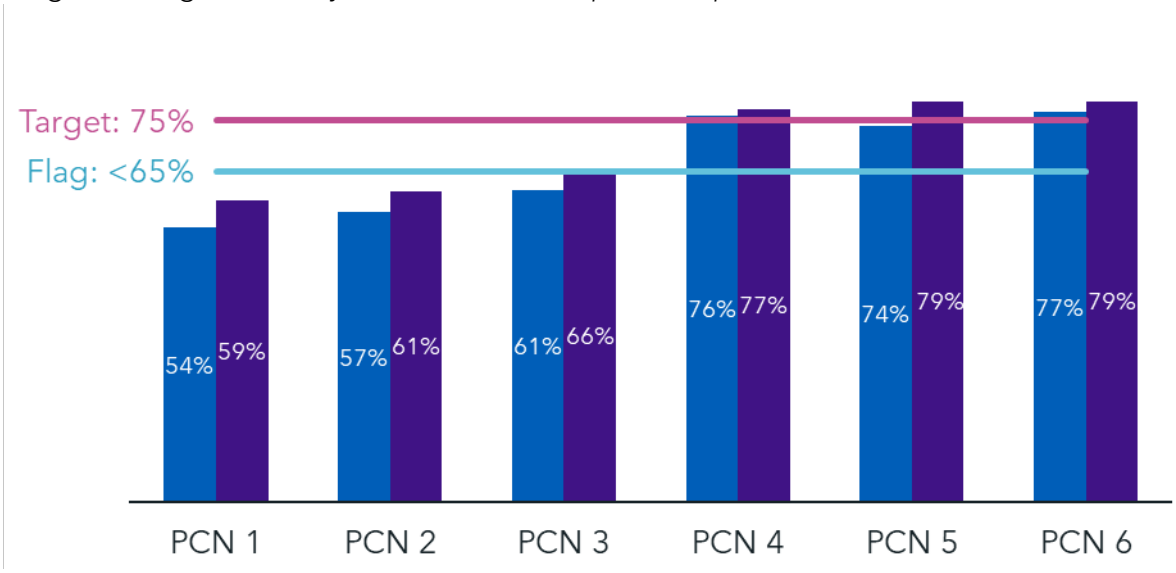
Table 4 PCN Lipids Pathway Data

PCN ID	Lipid Pathway	Data available
PCN 1	Primary Prevention Secondary Prevention	Yes
PCN 2	Secondary Prevention	Yes
PCN 3	Primary Prevention Secondary Prevention	Yes
PCN 4	FH detection	Yes
PCN 5	Primary Prevention Secondary Prevention FH detection	Yes
PCN 6	Secondary Prevention	Yes

4.3.1. Changes in prescribing trends of lipid therapies

Figure 1 illustrated the positive changes in high-intensity statin prescribing which occurred between January 2022 and January 2023. All six PCNs, part of the first-wave test bed sites, increased the rates of high-intensity statin prescribing. Four of the six PCNs reached the NICE minimum threshold of 65%, and three of these PCNs exceeded the optimal target of prescribing 75% high-intensity statins, as a percentage of all statins prescribed.

Figure 1 High-Intensity Statins as a % of patients prescribes all statins



Additionally, throughout the project's duration, 600 extra people were prescribed ezetimibe which demonstrates increased awareness for alternative therapies and increased competence within primary care concerning the escalation of lipid-lowering therapy following newly developed guidance and pathways for SEL.

4.3.2. Impact on patients

4.3.2.1 Primary Prevention

Patient record data illustrated some improvements between baseline measure and follow-up with regards to changes in priority group sizes. Table 6 displays the number of patients in each priority group, and as a percentage of the primary prevention population across PCN1, PCN3 and PCN5. PCN3 saw positive reductions in the percentage of patients in priority group 1 [highest risk] equal to a -18% change and increases in percentage of patients in their priority group 4 [lowest risk] equal to a +5% change. PCN5 and PCN1 saw little to no changes in primary prevention groups.

Table 5 Primary Prevention Groups between Baseline and Follow-up

	PCN3				PCN5				PCN1			
	Mar-21		Mar-23		Jan-22		Mar-23		Mar-22		Feb-23	
Primary Prevention Population	**928**		**559**		**12766**		**14205**		**4958**		**4958**	
Priority Group 1[Highest risk]	375	40%	125	22%	810	6%	953	7%	346	7%	362	7%
Priority Group 2	167	18%	118	21%	462	4%	454	3%	173	3%	212	4%
Priority Group 3	295	32%	233	42%	1024	8%	1074	8%	327	7%	360	7%
Priority Group 4[Lowest risk]	91	10%	83	15%	130	1%	121	1%	114	2%	131	3%

4.3.2.2 Secondary Prevention

Table 7 shows the percentages of patients by priority groups across PCNs between baseline (circa January 2022) and follow-up (circa March 2023). Overall, there was variation across PCNs in the change in percentage of patients across the priority groups. PCN2 (-3%), PCN5 (-1%), PCN3 (-9%), PCN1 (-7%), and PCN6 (-1%) reported a positive reduction in the percentage of patients in priority group 1 [highest risk] between baseline and follow-up. Simultaneously, all five PCNs reported an increase in percentage of patients in priority group 4 [lowest risk] which indicated a positive trend for the secondary prevention pathway (PCN2 with +2%, PCN5 with +5%, PCN3 with +4%, PCN1 with +2%, and PCN6 with +5%).

Table 6 Secondary Prevention Groups between Baseline and Follow-up

	PCN2				PCN5				PCN3				PCN6				PCN1			
	Mar-21		Mar-23		Jan-22		Mar-23		Mar-22		Sep-22		Jan-22		Feb-23		Mar-22		Feb-23	
Secondary Prevention Population	**2552**		**2441**		**1580**		**1581**		**893**		**768**		**825**		**827**		**1459**		**1459**	
Priority Group 1[Highest risk]	624	24%	505	21%	458	29%	447	28%	229	26%	132	17%	210	25%	199	24%	388	27%	293	20%
Priority Group 2	519	20%	395	16%	186	12%	127	8%	156	17%	144	19%	74	9%	62	7%	246	17%	221	15%
Priority Group 3	1019	40%	1087	45%	669	42%	712	45%	427	48%	401	52%	349	42%	371	45%	589	40%	629	43%
Priority Group 4[Lowest risk]	138	5%	172	7%	36	2%	111	7%	81	9%	91	12%	33	4%	76	9%	93	6%	113	8%

Statin acceptance and alternatives
Clinicians reported that recent positive press coverage about the benefits of statins in reducing the risk of heart attacks and strokes helped counteract misinformation and negative perceptions. Additionally, offering different statin options, including high-intensity statins and intermittent dosing, allowed healthcare professionals to cater to individual patient needs and preferences. Participants highlighted the importance of adopting a patient-centre approach, which includes providing clear explanations, addressing concerns, and respecting patients' autonomy in their treatment decisions.

"More recently the NICE guidance changed and the press around that statins is getting a little bit of good press and like how helpful they are reducing strokes and heart attacks and that people with a lower cardiovascular risk should be offered them. That's been very helpful obviously." PCN pharmacist

"There is still hesitancy, and you cannot predict who it is going to come from. But I think one of the good things has been being able to offer different statins, different high-intensity statins, also feeling a little bit more confident that with some that are kind of on the edge that you can do sort of intermittent dosing and bit." PCN pharmacist

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Improved patient education and awareness
Despite the issues of hesitancy, clinicians reported that the lipids management pathways helped educate patients about the implications of high cholesterol and the role of statins in reducing cardiovascular risks. This increased understanding allowed patients to make more informed decisions about their healthcare and led to a better appreciation of the importance of adherence to treatment plans.

"They are aware that what is going to happen or what is the implication of high cholesterol. So even if they're not starting the medication and actively reducing the Qrisk, they are still getting information and being educated by the health care professional." PCN pharmacist

"I think proactively contacting patients about their health is fantastic and that's kind of what this project's done. So, I think that's always great" PCN pharmacist

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4.3.2.3 Familial Hypercholesteremia

Patient record data indicate that the number of patients on FH registers reduced between baseline and follow-up periods for PCN4 and PCN5. This was due to re-coding patients with an incorrect FH code on the system. Table 8 shows there was a small change in possible FH for patients aged 30 and above, and those aged below 30 which demonstrates the PCNs' efforts to identify new cases through the FH pathway.

Table 7 PCN4 FH identification records

	PCN4				PCN5			
	Jan 2022		Mar 2022		Jan 2022		Mar 2022	
Total PCN Population	**199561**		**201608**		**59313**		**60690**	
Age 30+ Possible FH	145	<1%	180	<1%	35	<1%	40	<1%
Age <30 Possible FH	32	<1%	42	<1%	8	<1%	8	<1%
Diagnosed FH	381	<1%	342	<1%	75	<1%	61	<1%

Coding systems

The need to improve coding systems was highlighted by participants, as inaccuracies in coding can result in misdiagnoses and sub-optimal management. This was identified as being a particular issue with FH coding. Additionally, one PCN developed a standard operating procedure to capture and standardise the way FH-coded patients could be reviewed and followed up within the practice.

"One of the big things that we found was that FH coding had been used mistakenly. So, rather than recording a family history of hypercholesterolemia, it was recorded as FH and that has two very different meanings in terms of coding and in terms of the implications for that patient." PCN pharmacist

"You would put in their family high cholesterol and the system would automatically pick up on the codes as FH, you know, familiar hypercholesterolemia. So we said, OK, we need to just go back and review all those patients. So yeah, it was a lot of wrongly coded patients. It was at the beginning." PCN pharmacist

"The Standard Operating Procedure that our colleague created is essential really for anybody who wants to follow the process in order to make sure that they not getting lost because very much when you start this work it's quite confusing and there's a lot of data and a lot of information." PCN pharmacist

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Balancing patient care and caseload

Clinicians reported that they sometimes opted not to send letters to patients to avoid overwhelming both the patients and the healthcare system. They emphasised the need for a nuanced approach to implementing the lipids management pathways, considering both the potential benefits for patients and the impact on healthcare professionals' workload and resources.

"We were weighing up whether it is going to cause more anxiety in patients being told one thing and not another. And it was just, well, actually they're going to be recategorized [as not having FH], they will have their routine reviews one way or another and maybe as part of that conversation, that's something that can be picked up. And

ultimately what happened with these particular patients is that a letter wasn't sent out, but the notes were made in their records." PCN pharmacist

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4.3.3. Impact on staff

Participants discussed the impact of the project on their professional development and work. Key subthemes emerged which were practice-based learning and exposure to expert knowledge. These provided insights into the ways in which the lipids optimisation workstream contributed to clinicians' growth in knowledge and competence, enabling them to better understand and manage lipids in primary care settings. Participants mentioned gaining insights into familial hypercholesterolemia as a condition, the treatment options available in secondary care, and the importance of considering factors beyond traditional risk scores like Qrisk. This increased understanding allows clinicians to provide more comprehensive care to their patients, as they are better equipped to consider various factors that may impact lipid management.

Practice-based learning
As clinicians engaged in the project, they began to develop a more in-depth understanding of lipid management and its complexities. For example, one participant mentioned rating their knowledge between 3 to 4 out of 5, suggesting that they had a moderate level of expertise, which they attributed to prior experience and the straightforward nature of cholesterol management.

"Five is the 'I think I'm an expert'. I'll probably rate myself between 3 to 4 . It's mainly because cholesterol management is quite straightforward and there was quite a lot of supporting information that I can get access to and also from my previous experience." PCN pharmacist

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Another participant noted that their involvement in the workstream allowed them to gain a better understanding of priority groups and treatment options. This emphasised the importance of hands-on experience in the learning process and the potential for clinicians to expand their knowledge and skills through active participation in the lipids optimisation workstream.

"'It had created more of an awareness and more thought about statins and cholesterol levels and lipids. And it was quite good to find out about the treatments available in secondary care because now when you see things you think, oh, look, there are other options available. But yeah, I think it kind of puts into context the priority groups. You know, normally you just kind of think statin, right? This is what you give but adds a bit of focus and actually what you're trying to do what you're trying to prevent." PCN Digital transformation lead and practice nurse

"It is a very a new topic for everybody to get their head around and to understand I mean I wonder how many GPs have you know really understood Simon Broome criteria for example you know it's quite a niche area." PCN pharmacist

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Access to expert knowledge
Through various educational opportunities, such as fellowships, webinars, and community of practice events, clinicians were exposed to the latest information and research on lipid management. Participants

spoke highly of the quality of the speakers and the inspiring nature of the content shared. This exposure to expert knowledge allowed clinicians to develop their own expertise in the subject matter, ultimately contributing to their confidence in managing lipids. In addition, by engaging with experts, clinicians gained a deeper appreciation for the importance of managing lipids effectively, which emphasised the potential for improved patient outcomes as a result of their increased knowledge.

"The CVD fellowship certainly the lipid and cholesterol related speakers were very, very high end, if that makes sense. They're proper specialists. It was very interesting and inspiring to have. You know the project is one thing, but you're obviously learning and then it's giving you the realization of how important it is to do the project well because of those clinical outcomes. And what that can mean in the bigger picture. So yeah, that was great." PCN pharmacist

"No, you don't only go by the Qrisk. Look at the general health of the patient sort of thing. But yeah, it definitely gives you a boost and a better understanding." PCN Digital transformation lead and practice nurse

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4.4. Acceptability & feasibility of lipid management

Overall, staff were positive about the lipids optimisation project, and described the project as feasible and widely acceptable. A number of key themes were identified associated with the project's acceptability and feasibility.

Time and support
Despite the time-consuming nature of the process, the clinicians acknowledged the value of this workstream in helping them better integrate into their PCN roles and foster stronger connections with patients. Some participants emphasised the importance of being supported throughout the implementation, which contributed to a positive experience. This suggests that having adequate support structures in place can alleviate some of the challenges associated with time constraints and foster a more positive experience for healthcare professionals.

"It takes a lot of time, but that's the only thing that I can think about. Otherwise, everything seems good..it's a good experience for me to merge into my PCN role and also build a good connection with the patients as well. Experience wise is fine and I get well supported." PCN pharmacist

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Information dissemination
Participants reflected on the challenge of ensuring that all key healthcare professionals across the pathway received the necessary information and resources to effectively implement the lipids optimisation workstream. People highlighted information sharing could have been better between the PCN level and individual practices, particularly for salaried GPs, nurses, and prescribers.

"I think it's identified, it's opened up, a whole new world, a whole new arena actually. There's lots and lots of work to be done, and it's just picking that work and trying to see how we can systemize this." PCN pharmacist

"Thank you so much for the opportunity. I mean the fact that they put this program of work together, it is pertinent for a time like now where you know cardiovascular disease is a priority. So, it was very enjoyable and you know it kind of just that the learning, I think that we got from it, which unity to sort of partake in the webinars and you know collecting the data and everything. It came at the right time." PCN Digital transformation lead and practice nurse

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Increased competence and confidence

Through their participation in the workstream, clinicians reported that they had developed new skills and knowledge, leading to increased confidence in their ability to manage lipid-related issues and answer difficult questions. The workstream also enabled them to better understand patient needs, address statin hesitance, and improve patient outcomes.

"It gives you the boost to know actually you're doing the right things. You know you've ruled out the more serious aspects and actually know this patient needs to you know maybe just take their medication really or we need to change their therapy a little bit to get them the best results." PCN pharmacist

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Holistic approach and patient rapport

Participants underscored the significance of considering patients' individual circumstances, lifestyles, and personal needs when managing their lipid levels. Clinicians noted that taking the time to inquire about patients' recent dietary habits or lifestyle changes could provide valuable context for understanding their lipid profiles. The also reported that by building rapport and fostering open communication with patients, healthcare professionals can better address their concerns and tailor treatments to their unique situations.

"It's just nice to know that statins aren't the end. That has been the case for a couple years, but that's not the end for us. There is other stuff we might not be initiating at the moment. There're so many more streams of what can be done to improve those outcomes and that is really, really good" PCN pharmacist

"I think there's still that grey area between 10 and 20% well, sometimes they say prescribe and sometimes they say don't. We all know that definitely 20% and above you need to prescribe but there's that 10 to 20 do we not and there's a school of thought saying we should and it's better to do so I would...." GP

System and workflow improvements

Participants emphasised the importance of refining different aspects of systems and processes used in primary care for lipids management. Clinicians highlighted the need for clearer referral pathways and better communication among healthcare professionals. They reported that this would help ensure patients receive appropriate care and prevent confusion or miscommunication that could lead to suboptimal patient management. Some clinicians suggested that the current 10-minute appointment duration might not be sufficient for addressing patients' needs effectively. They advocated for longer appointment times, particularly for educational clinics, as this could lead to improved patient understanding and compliance with treatment plans, ultimately reducing the need for follow-up appointments.

"We [primary care] offer a lot. I think it's just that. I don't know, 10 minutes I would say sometimes it's not enough and when I suggested that, you know, it's just like I'm thinking – give [the] patient a little bit more time because you can get so much more from that you know educational clinic. But you know, primary care follows a little bit of a regime. They only have a 10-minute review with the patient and believe me if you spend a little bit more you might not need to see that patient again. But if you rush everything in 10 minutes you would see the patient six months down the line." PCN Digital transformation lead and practice nurse

5. Conclusions

Overall, the evaluation found that the first wave of PCNs engaged with the lipids optimisation programme to produce improvements in prescribing trends, which adhere to the NICE guidelines, in addition to improving lipids management through primary and secondary prevention workstreams. There were positive impacts on prescribing trends, patients care and staff through the project. All six PCNs increased the percentage of prescribed high-intensity statins, as a percentage of all statins prescribed between the baseline period in January 2022 and follow-up in March 2023. Additionally, 600 more patients were prescribed ezetimibe.

Clinicians reported a range of perceived impacts on patients, such as improved patient education and awareness leading to more informed decisions about healthcare, and recent positive press coverage of statins contributed to countering misinformation and negative perceptions. However, patient anxiety and resistance to treatment were prevalent and presented challenges, with some patients being resistant to starting statins due to concerns about side effects and negative perceptions. Clinicians acknowledged the need for clear communication and a compassionate approach to help alleviate patients' anxieties and build trust.

Personal experiences and acceptability of the lipids optimisation project among clinicians were broadly positive. Despite the additional time required, clinicians appreciated the opportunity to better integrate into their PCN roles and build stronger connections with patients. Adequate support structures played a significant role in fostering a positive experience. Participation in the workstream increased the competence and confidence of healthcare professionals in managing lipid-related issues, addressing statin hesitancy, and improving patient outcomes. The importance of a holistic approach to patient care and the need for system and workflow improvements were emphasised, highlighting the need to refine systems and processes in primary care for more effective lipid management.

These findings are encouraging and demonstrated the commitment to improving lipid management across the first-wave test bed sites.

6. Limitations

This evaluation collected quantitative data across primary, secondary prevention and FH coding across six PCNs. Five interviews were conducted with six clinicians who represented all six PCNs. However, there were limitations to this evaluation. The patient record data received from PCNs were not matched at the patient or cohort level between the baseline 2022 and follow-up 2023 periods. This means that the analyses conducted for this evaluation were not comparing the same groups at baseline and follow-up. This limitation hinders the ability to draw definitive conclusions about the lipids optimisation project's impact on specific patient groups over time. It may also introduce confounding factors, as any observed changes could be attributed to variations in the patient population rather than the direct effects of the lipids optimisation strategies employed across the PCNs.

A further limitation of this evaluation was the lack of representation from all staffing groups, particularly administrative staff. While the study included representation from clinical staff across all six first-wave test bed PCNs, with a total of six members interviewed, no administrative staff participated due to staff turnover or competing obligations at the time of recruitment for the interviews. This limitation may have resulted in a biased understanding of the lipids optimisation workstream's implementation and impact, as the perspectives and experiences of administrative staff could provide valuable insights into the practical and logistical challenges associated with the workstream.

7. Recommendations

Primary Care's role in lipid management
The insights from this evaluation emphasise that Primary Care should retain a key role in identifying patients with high-risk of cardiovascular disease and FH, and optimising lipid management where possible. Primary Care are also key to ensuring appropriate referrals and triage mechanisms are in place to lipid specialists and/or cascade testing.

Resource and workforce
The additional burden on clinicians' time to successfully implement and deliver the lipids optimisation workstream needs to be recognised in the workforce and caseload planning. Having clearly defined roles, such as project and data management, will help with task delegation and reduce the impact of clinicians' time on patient care.

Patient education and engagement
Statin hesitancy and misinformation about preventative measures for lipid management were reportedly prevalent among patients. Patient-specific and targeted educational materials and communication strategies to improve patient understanding of lipid management and statin therapy should be introduced and standardised. Where resources have been created by individual PCNs or our networks, these should be shared widely across the community of practice and with future test-bed sites. For example, Patientcentre.org's Shared Decision-Making tool for CVD[7] in its current Alpha format, supported and tested in the Northeast of England NHS region, personalises the care options and prepares the patient for a shared decision-making consultation with their clinician.

Wider PCN engagement and support
Facilitated wider PCN engagement should continue to be supported. The Community of Practice for lipids management was highlighted as a key factor that supported successful project delivery. The ICB could actively support the lipids optimisation workstream by providing the necessary resources, coordination, and data analysis support. Clinicians should actively engage with the wider PCN group to foster greater engagement and ensure the project is progressed across all practices.

Professional development and training
The training and learning opportunities throughout the lipids optimisation project were highlighted as having a beneficial impact to staff professional development and patient care. Continued professional development and training opportunities for clinicians involved in the lipids optimisation workstream should be considered as part of ongoing support for the project. Within this, clinicians should continue to take responsibility for their continuous learning to stay updated with the latest information on lipid management.

Review of FH-coded patients
Two PCNs addressed the FH pathway during the project and both reported numerous incorrect coding of current FH on their systems. It is feasible that these errors may have occurred across other PCNs and therefore, it is recommended that a review of current FH-coded patients be added to the pathway as an additional step along with identification of possible new cases. The standard operating procedure developed by one PCN is a helpful visual guide which could be used to standardise the review process for FH-coded patients across other PCNs. Additionally, a knowledge-gathering exercise to examine how these errors frequently occurred may be useful to prevent future coding errors.

[7] https://alpha.patientcentre.org/calc/

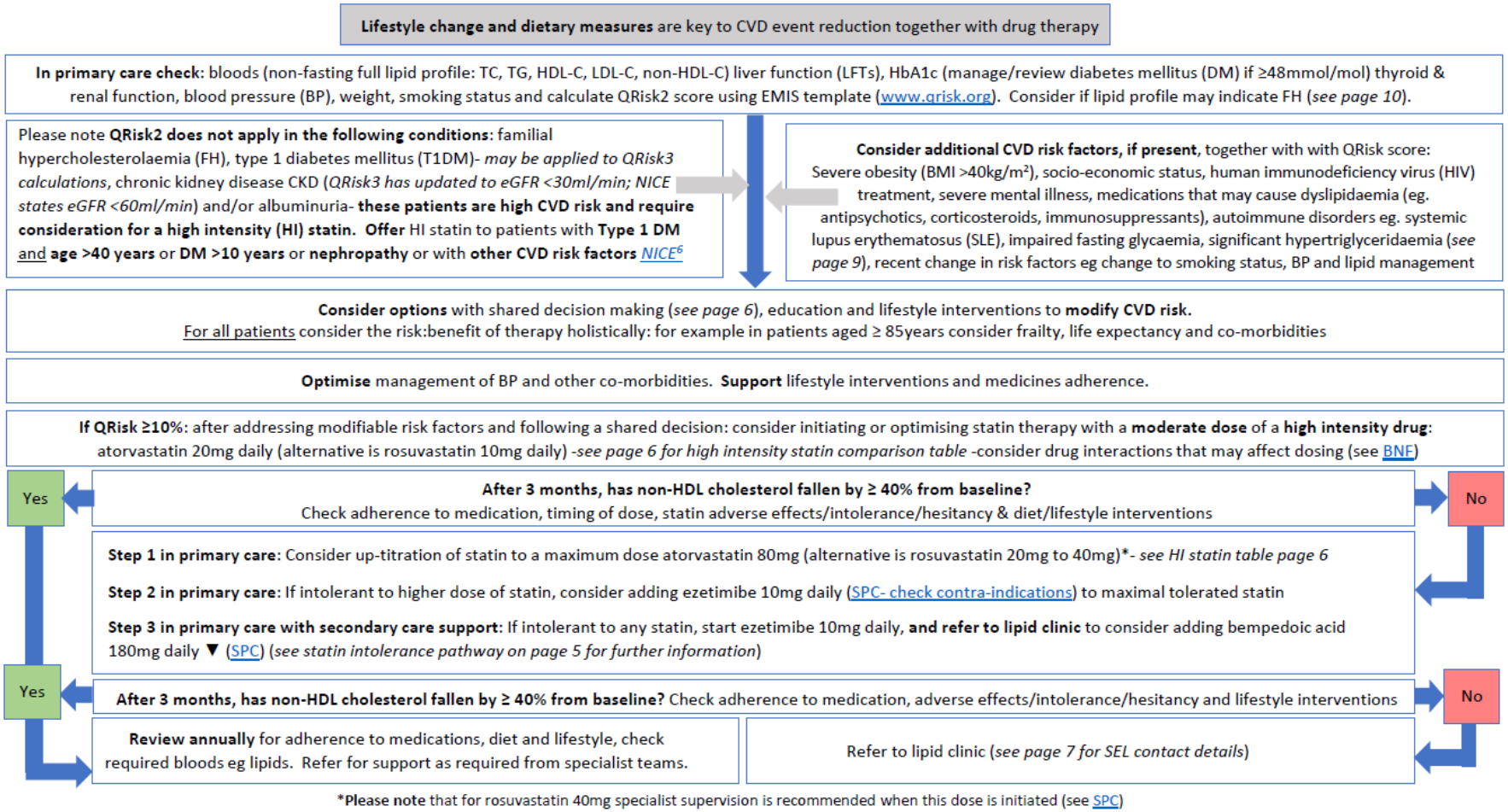
Match patient data at cohort level

Measuring clinical outcomes is an important driver for the sustainability of the lipid optimisation project. The current searches are limited in what they can currently compare. Future work should ensure patient data is matched at the cohort level between baseline and follow-up periods. This will allow for more accurate comparisons and assessment of the lipids optimisation project's impact on specific patient groups over time. The UCLPartners Search and Stratification Tools should be updated to extract cohort-level data, rather than population-level data. Where individual practices have created their own effective search templates or protocols, these should be shared among the wider Community of Practice.

8. Appendices

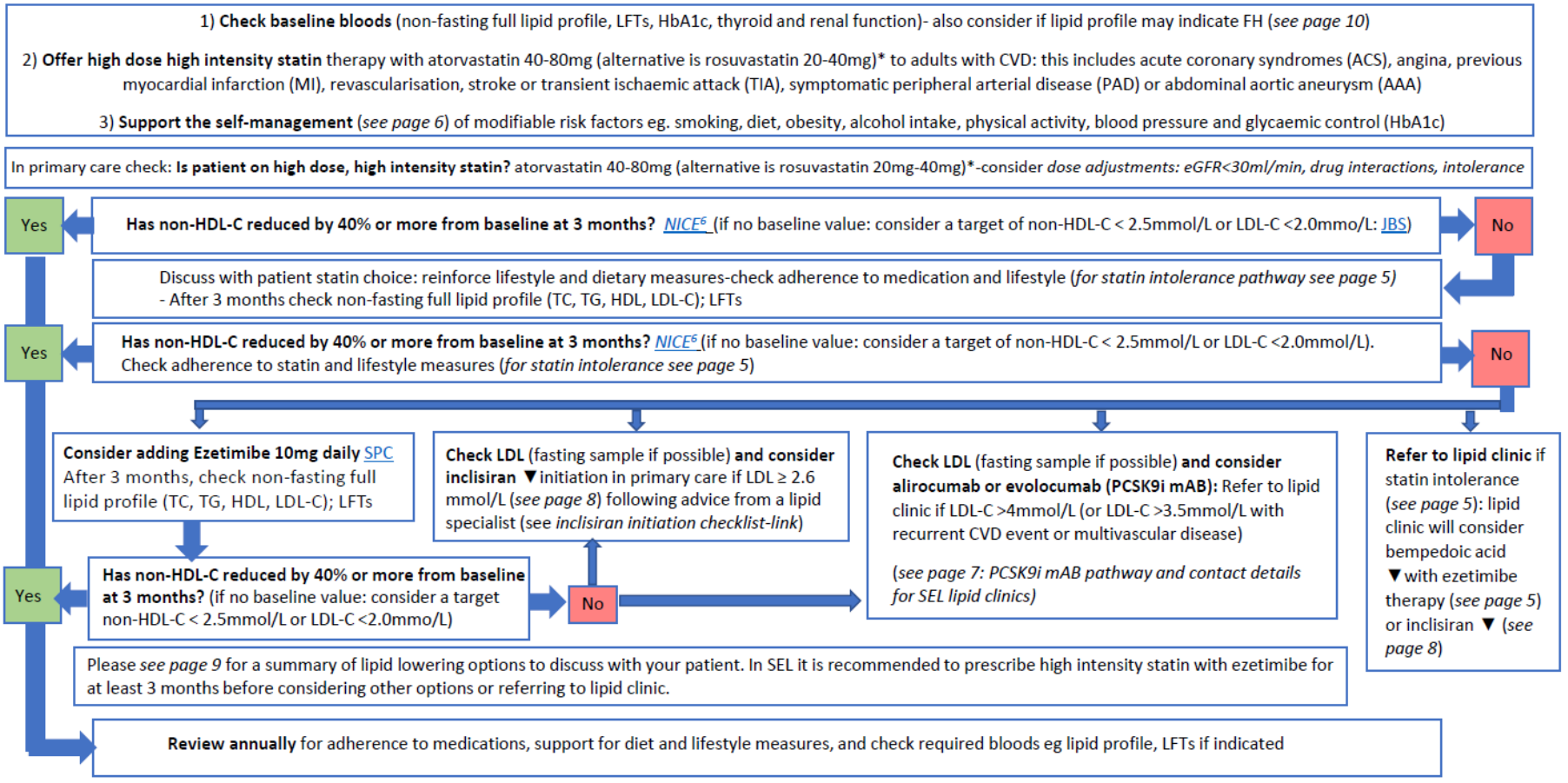
A) Primary Prevention Pathway

Primary Prevention: Medicines Optimisation for Lipid Management



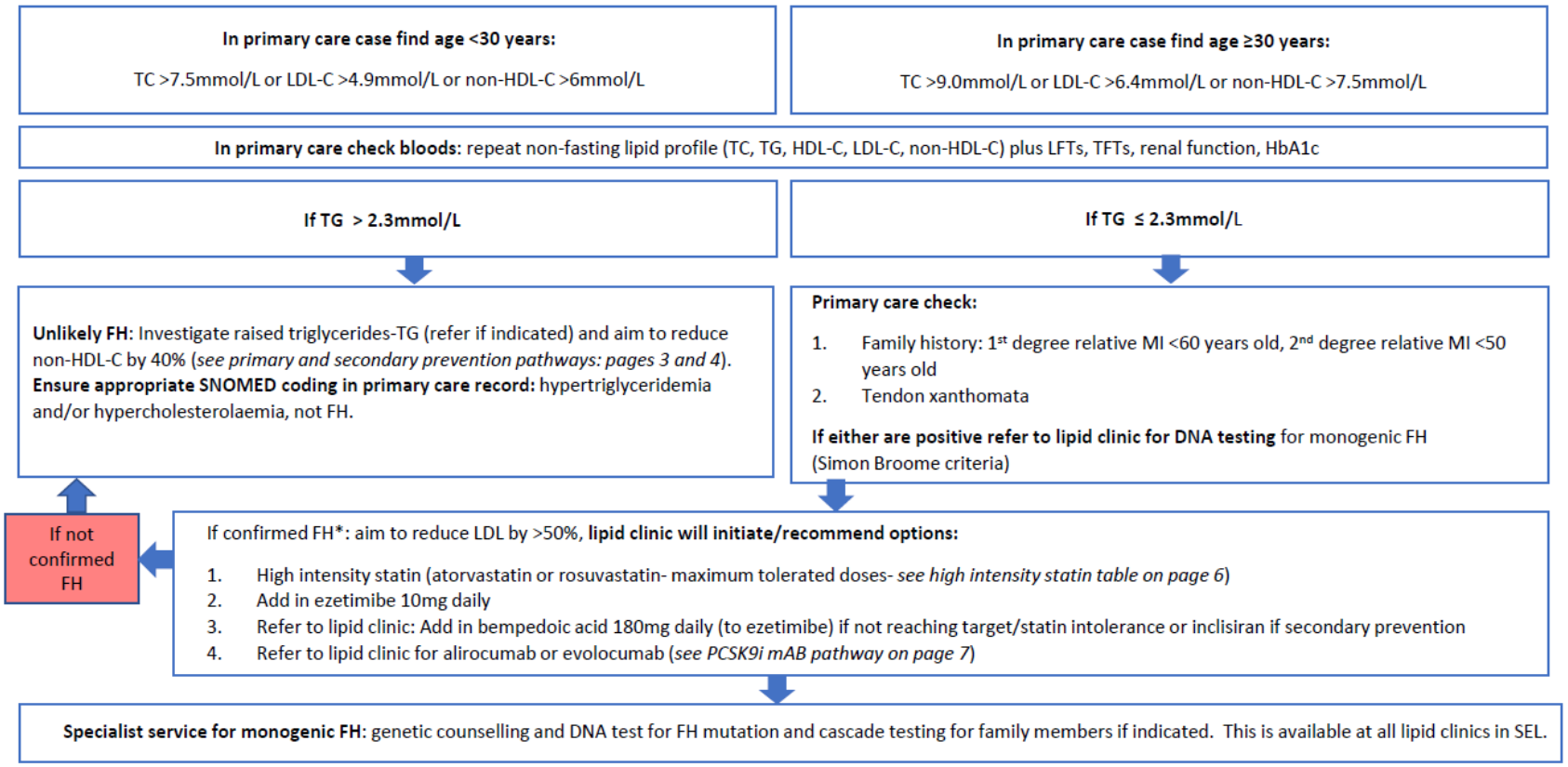
B) Secondary Prevention Pathway

Secondary Prevention: Medicines optimisation for Lipid Management



*Please note that for rosuvastatin 40mg specialist supervision is recommended when this dose is initiated (see SPC)

Familial Hypercholesterolaemia (FH) Pathway



D) Evaluation Framework

Evaluation objectives	**Data collection methods and data source(s)**
Understand the different approaches taken within primary care to improve lipid management associated with the project.	Define approaches (or model) for each PCN • Documentation (e.g. SOPs) • Interviews with staff (in primary care, ICS)
Explore the factors influencing the implementation of these approaches (to guide spread and adoption).	Staff interviews and/or focus groups
Determine (early) impacts of approaches to improved lipid management (on the identification of priority groups and/or prescribing behaviour of lipid therapies).	Prescribing behaviour of lipid therapies (via OpenPrescribing) Change in # and % of primary groups not on (appropriate) statin therapies Change in # and % of patients identified (<30 and ≥30 years old with FH Change in # and % of patients identified diagnosed (coded) with FH
Explore primary care staff's knowledge and confidence in lipid management.	Staff interviews
Understand primary care staff's experience and acceptability of the approaches to improving lipid management.	Staff interviews
Understand patient experience and satisfaction with the approaches within primary care for improving lipid management.	Staff interviews
Identify areas for improvement in enhancing lipid management within primary care.	Staff interviews