Healthcare Improvement Scotland

Primary Care Phased Investment Programme: Final report

Appendix 6: Data collection and analysis methodology

The following data workstreams were used to evaluate progress against the aims of the Primary Care Phased Investment Programme (PCPIP):

1. Quality improvement (QI) data workstream
2. Week of care audit workstream
3. Economic analysis
4. Qualitative data workstream
5. Service user views
6. Local system and record sampling workstream, and
7. Board-wide data workstream.

This section will provide more details on which data was used for what purpose and their limitations.

Figure 1 illustrates what data workstreams were used to evaluate each of the aims of PCPIP.

Figure 1: Data workstreams used to evaluate each of the aims of PCPIP

Building evidence

Area of focus	Aim	QI	Week of care	Economics	Qualitative	Service user views	Local system & record sampling	National
Area of focus 1	Key **conditions** for change for change and **enablers** required to support MDT working	✓	✗	✗	✓	✗	✗	✗
Area of focus 2	**Learning from the QI approach** embed in PCPIP to support future implementation of the MDT and policy development	✓	✗	✗	✓	✗	✗	✗
Area of focus 3	MDT services that should be **prioritised** for further development	✗	✓	✓	✓	✗	✗	✗
Area of focus 4	Key **attributes** of a sustainable and effective model of MDT support	✓	✗	✗	✓	✓	✗	✗
Area of focus 5	Support requirements for **monitoring** and **evaluation** of the impact of MDT working	✓	✗	✗	✓	✓	✓	✓
Area of focus 6	**Requirements** to ensure MDT working supports the reduction of health inequalities	✓	✗	✗	✓	✗	✓	✗

Workstream 1: QI data

Aim

QI data was collected and reviewed at different stages of the QI journey. Demonstrator site teams collected data to understand their systems and to measure the impact of changes they were testing. QI measures were agreed locally by each demonstrator site with support from Healthcare Improvement Scotland and/or their local QI team. Data is collected primarily for the benefit of the local improvement team to learn from and guide their work.

Demonstrator site measures

This lists below details each demonstrator sites measures from their measurement plans. Measurement plans were developed locally and were refined throughout the programme. Grey rows indicate measures that sites intended to collect but were unable to, caused by factors including programme delays and limitations of IT systems for extracting data.

Demonstrator sites also collected qualitative feedback from pharmacotherapy and community treatment and care (CTAC) staff and practice teams. All demonstrator sites also collected patient feedback through Care Experience Improvement Model (CEIM) discovery conversations.

NHS Ayrshire & Arran

Table 1: NHS Ayrshire & Arran Pharmacotherapy measures

Pharmacotherapy measures
Percentage of serial prescriptions being fully optimised at 56 weeks practice level by members of the pharmacotherapy team
Time saved by admin producing repeats and serial prescriptions as they are moved to 56 weeks
Rate per 100 treated patients special/acute prescriptions requests (practice level)
Percentage of special/acute prescription requests processed by members of the pharmacotherapy team (practice level)
Average time taken to complete acute prescriptions as a consequence of using the decision tree
Count of prescriptions passed back (PPB) reduced as a result of the introduction of the Decision Tree
Count of patients on repeatable acute prescriptions who are transferred to repeat or serial
Annual equivalent percentage of polypharmacy reviews undertaken within residential care homes by members of the Pharmacotherapy Team
Rolling 12-month cumulative percentage of polypharmacy reviews undertaken within residential care homes by members of the polypharmacy team
Percentage of patients on antidepressant medication who have access to a review
Percentage of medicines reconciliation actioned and led by a pharmacy technician
Percentage of acute prescriptions processed by the pharmacotherapy hub
Count of discharge and outpatient letters completed in the pharmacotherapy hub
Time released to pharmacist because of pharmacy technician upskilling to review direct oral anticoagulant (DOAC) monitoring

Count of appointments fulfilled by advanced pharmacist practitioner
Percentage of pharmacy reviews carried out by advanced pharmacist practitioner role and outcomes
Type of patients seen by advanced pharmacist practitioners who would normally be seen by GP
Time taken to complete acute prescriptions (pharmacists in the preceptorship programme)
Count of errors/Datix recorded

Table 2: NHS Ayrshire & Arran CTAC measures

CTAC measures
Percentage of resilience workforce able to deliver on the full specification of CTAC delivery model
Percentage of CTAC appointments covered by resilience staff
Percentage of whole time equivalent (WTE) CTAC resilience staff who are in post
Percentage of practice profiles in place
Percentage of resilience staff completed induction process
Length of time for staff to complete competencies (weeks)
Percentage of resilience covered by reason

NHS Borders

Table 3: NHS Borders Pharmacotherapy measures

Pharmacotherapy measures
Count of hybrid contracts
Percentage of surveys returned
Percentage of staff reporting an improvement in work life balance
Percentage of staff reporting an improvement in wellbeing
Percentage of morning briefs that report improvement in communication
Percentage of protected learning time used for learning
Count of patient complaints in relation to high-risk medicines monitoring pathways
Percentage of medication reviews being done by GPs
Time saved by GPs from not doing the HRMM
Percentage of meetings reported as supporting integrated interprofessional collaboration
Average proportion of representation at multidisciplinary teams (MDT) of each professional group, for example physiotherapist, advance nurse practitioner (ANP), GP, pharmacist.
Percentage of practices adhering to standardised processes for hub working
Count of immediate discharge letters (IDLs) workflow to the hub
Percentage of IDLs completed by hub in less than 48 hours
Count of total Docman workflow to the pharmacy hub
Count of inappropriate workflow to the hub
Count of workflow sent back to practices
Count of IDLs requiring further information from sender
Percentage of staff that feel more part of a team
Percentage of staff that have access to supervision
Percentage of serial prescriptions
Count of DNAs for HRMM

Table 4: NHS Borders CTAC measures

CTAC measures
Count of appointments booked by patient via CTAC admin hub
Count of appointments booked in-person via health board receptionists
Count of occurrences of general practice staff booking appointment via CTAC admin hub
Mean wait time for CTAC appointment
Percentage of DNA appointments
Count of patients attending drop-in clinics
Count of occurrences of duplication of blood tests
Percentage of MDT meetings reported as supporting collaboration
Count of occasions requiring allocation of peripatetic staff
Percentage of occasions where peripatetic staff are actually allocated
Percentage of band three healthcare support workers (HCSWs) staff
Count of patients booking at location which is not their registered practice
Percentage of huddles reported as supporting improvement and safety
Percentage of staff reporting accessible route for development and training
Count of CEIM conversations
Count of patient survey responses
Count of equality and human rights impact assessment (EQHRIA) surveys
Count of patient complaints
Percentage GP practices reporting engagement with the practice dashboards
Count of meetings with third sector groups (EQHRIA conversations)

Edinburgh City Health and Social Care Partnership (HSCP)

Table 5: Edinburgh City HSCP Pharmacotherapy measures

Pharmacotherapy measures
Percentage of non-clinical medication reviews from PCPIP practices completed by pharmacy technicians and pharmacy support workers
Rate of items on repeat prescription per 1,000 not ordered in the past 12-24 months
Count of non-clinical medication reviews completed
Percentage of hub staff selecting agree or strongly agree with the following statement: 'I feel confident to complete medicines reconciliation'
Percentage of practice staff selecting agree or strongly agree with the following statement: 'The introduction of the hub has reduced my workload associated with the medicines reconciliation of outpatient letters (OPLs) and IDLs'
Percentage of IDLs received by each practice that are actioned by the pharmacy hub
Percentage of OPLs received by the practice that are actioned by the pharmacy hub
Count of IDLs received from PCPIP hub practices that are actioned by the south-east pharmacy hub
Count of OPLs received from PCPIP hub practices that are actioned by the south-east pharmacy hub
Count of IDLs received from non-PCPIP hub practices that are actioned by the south-east pharmacy hub
Count of OPLs received from non-PCPIP hub practices that are actioned by the south-east pharmacy hub
Count of polypharmacy reviews completed by pharmacist for patients over 65 years and coded as frail
Count of polypharmacy reviews completed

Count of patient consultations completed by pharmacist in practice
Percentage of practice pharmacists selecting each level of agreement with the following statement: 'Completing more level two and three pharmacotherapy improves my job satisfaction'
Percentage of all patients over 65 in each of the nine practices read coded as frail
Percentage IDL workflowed to pharmacy that are actioned by practice pharmacy team (all dashboard practices)
Percentage OPL workflowed to pharmacy that are actioned by practice pharmacy team (all dashboard practices)
Count of acute prescription requests completed by pharmacists
Count of acute prescription requests completed by technicians
Percentage of serial prescribed at each practice
Percentage high-risk medicines monitoring completed by pharmacy technicians
Percentage of patients who have up to date monitoring for high-risk medicine
Count of high-risk medicines monitoring completed by pharmacists

Table 6: Edinburgh City HSCP CTAC measures

CTAC measures
Count of overall CTAC appointments delivered in South-East Edinburgh
Percentage of CTAC patients in South-East Edinburgh seen at other CTAC locations
Count of CTAC cancellations by service in South-East Edinburgh (Nine practices)
Count of CTAC cancellations by service in South-East Edinburgh (All practices)
Count of South-East Edinburgh CTAC appointments used by patients not from a PCPIP practice
Percentage of patients seen by a practice nurse at Conan Doyle or Gracemount that could have been seen CTAC
Count of appointments delivered for each of the five key CTAC tasks in South-East Edinburgh
Count of catheter appointments delivered in South-East Edinburgh CTAC

NHS Shetland

Table 7: NHS Shetland Pharmacotherapy measures

Pharmacotherapy measures
Percentage of people on regular medication who have had a medication review completed within 180 days of birth month
Count of items on repeat prescription not ordered in the past 12 months
Percentage of items dispensed from a serial prescription
Percentage of practices receiving pharmacy team support with their acute and repeat prescription workload
Percentage of acute prescriptions issued by pharmacy team
Percentage of medication reviews completed by a pharmacist
Percentage of medication reviews completed by a pharmacy technician or pharmacy support worker (PSW)
Percentage of medication reviews requiring contact with patients that have been completed by the pharmacy team
Rate of polypharmacy reviews completed per 1,000 list size
Percentage of patients with regular medication who have had a medication review within the last 15 months.

Table 8: NHS Shetland CTAC measures

CTAC measures
Percentage of patients with CV long-term condition (LTC) who have been invited to a LTC appointment in the past 15 months
Percentage of patients with CV LTC who have attended a LTC appointment in the past 15 months
Percentage of people with a CV LTC who attended their first appointment within 60 days of being invited
Percentage of people with a CV LTC who attended a first appointment who have a House of Care letter sent out to them
Percentage of people with a CV LTC who attended a second appointment within 60 days of their first appointment

Table 9: NHS Shetland other measures

Other measures
Percentage of clinic letters with clear sections on actions for primary care and medication changes
Percentage of 'off-template'* read codes used to code LTC CDM monitoring/management appointments

Demonstrator sites' discovery conversations and patient engagement

NHS Ayrshire & Arran

Table 10: NHS Ayrshire & Arran CTAC discovery conversation plan

Touchpoint	Discovery questions	Digging deeper questions
Previous appointment information given	• Tell me about what information. you were provided at your last appointment?	• How did that make you feel? • Did you have enough information? • Tell me more about that?
Prescription requested from GP	• How did you know the process for requesting prescription?	• What were your first impressions? • How did it go?
Prescription collected from pharmacy	• How do you get your medicine? • How was the process for collecting your prescription?	• What was important to you about this?
Patient calls to make appointment or arrives at GP practice	• Did you feel you got your appointment arranged at an appropriate time? • Tell me about what happened when you arrived at the GP practice.	• How did that make you feel? • How was the process? • What did you feel like?
Books in with reception **Sits in waiting room**	• Tell me about what happened when you booked in. • How was your experience in the waiting room?	• How easy process • What were your first impressions? • How was this experience?
B12 administered by CTAC staff	• Tell me about your experience with B12 administration.	• What were your first impressions?

Patient given next appointment date	• What information was provided regarding your next appointment?	• How did you feel? • Did you receive enough information?
Patient leaves practice	• Tell me about your experience leaving the practice.	• What was important? • Did you get what you needed?

Pharmacotherapy discovery questions

New patients switched to chronic medication service serial prescribing

- We posted a letter to you about a change to your prescription. What happened when you received the letter? What did you do?
- How did you feel about the change to your prescription after that?
- What do you think your next steps are?
- Is there anything else you want to share about the change to your prescription?

Patients currently receiving a serial prescription

- Can you tell me how you receive your medication at the moment? What do you have to do?
- How did you feel about the change to your prescription after that?
- What do you think your next steps are?
- Is there anything else you want to share about the change to your prescription?

Table 11: NHS Borders protected characteristics RAG status in relation to the CTAC booking hub

Group / Protected Characteristic	Relevance	Rationale
Age	High	The Borders has an ageing population (27% aged 65+). Older adults are high users of CTAC services and may face barriers with telephone access, mobility, or digital exclusion.
Disability (physical & learning)	High	Individuals with disabilities are likely to face challenges with communication, understanding, and accessibility in a phone-based system. A priority group for inclusion.
Gender / Sex	Medium	No direct gender-based impact identified, but women are more likely to be carers and healthcare users. Consideration required to ensure equity in access.
Sexual Orientation	Medium	Potential for marginalisation or past healthcare discrimination. Important to ensure service is welcoming and inclusive.
Gender Reassignment	Medium	While small in number, trans individuals may experience additional barriers to accessing healthcare. Ensure inclusive language and respectful interactions.
Race / Ethnicity	Medium	Borders has a small but growing ethnic minority population. Language barriers and cultural differences may impact telephone booking experiences.
Religion or Belief	Low	No direct impact of service design identified related to religion or belief. Still important to maintain respect for cultural needs.
Marriage and Civil Partnership	Low	Unlikely to impact access to or experience of the CTAC booking process.
Pregnancy and Maternity	Low	No disproportionate impact anticipated.
Other Considerations		
Carers (Unpaid & Professional)	High	Carers often manage appointments for others and may have limited flexibility during working hours. Booking hub design must accommodate their needs.
People Living in Poverty (esp. rural)	High	May face digital exclusion, lack of phone credit, or limited connectivity. Rural isolation and deprivation are important equity factors in the Borders.
People with Limited English Proficiency	Medium	Small population, but potential barriers to understanding and booking by phone. Should be addressed to ensure equity and accessibility.

Table 12: NHS Borders CTAC discovery conversation plan

Touchpoint	Discovery questions	Digging deeper questions
Initial referral/being asked to call the hub	• How did you book your appointment?	If through hub then ask: • Can you tell me what you understood about why you were being asked to call the hub?
Calling the hub	• Can you describe how it felt when you called the Hub/to make your appointment? • What was that phone call like for you?	• Who did you speak to, and how did the conversation go? • How flexible did you feel the person taking the call was in terms of availability for example? • Was there anything you really liked or did not like about the call? Tell me more.
Booking your appointment	• How easy was it to book your appointment? • What were your thoughts following the call?	• How did you feel once your appointment was confirmed? • Was there anything else you would like to add about the call good or bad?
Arriving for your appointment	• How easy was it to book in for your appointment? What happened when you arrived?	• How did you know where to go? • Who did you first speak to and how did they treat you/make you feel? • What were your first thoughts about the space and the people?
During your appointment	• How do you feel the appointment went? How did you feel during the appointment?	• How did the staff treat you? • What was the room or space like where you had your care? • How do you feel about the amount of time you had for the appointment • Were family or carers included if needed?
Understanding what happens next	• What do you understand about what happens next. • Is there anything you have not mentioned yet that you think we should know about your experience?	• What would you do if you had questions or needed help after this appointment? • Is there anything else you wish had been explained?

Table 13: Edinburgh City pharmacotherapy conversation plan

Touchpoint	Discovery questions	Digging deeper questions
Patient is discharged from hospital	• Tell me about your experience of the day you went home from hospital?	• Did you understand what you had to next as a patient? • Did you receive a copy of your discharge letter? • Were you given any medication to take home?
Patient brings their discharge letter to the surgery	• What was your experience of contacting the surgery after discharge? • What happened next?	• How did you find contacting the GP practice? • How did it go? • What would have made that experience better? • How did that make you feel?
The hub pharmacy team contact the patient by home	• What was your experience of the phone call? • What happened next?	• How did you feel about that? • How long after leaving hospital were you called? • How did you feel about that? • How helpful was the phone call? • Tell me more about that.
Collection of prescription from requested site/appointment for bloods	• Walk me through what happened after this conversation. • Was there anything else you were asked to do?	• What was important to you about that? • How did you feel about that? • Is there anything else you would like to share?

Table 14: Edinburgh City CTAC discovery conversation plan

Touchpoint	Discovery questions	Digging deeper questions
Patient is asked to contact CTAC on discharge	• What information were you given about contacting the CTAC service?	• Who asked you/how were you asked to contact CTAC? • How do you feel about being asked to contact the service?
Self-referral - patient phones CTAC service	• Tell me about your experience of contacting the service.	• How long did you wait for your call to be answered? • How did that make you feel? • How did you feel about the timing and location of the appointment you were offered?
Patient arrives for appointment	• Tell me about your journey to the CTAC appointment.	• What happened when you arrived? • How did you travel? • How long did it take? • Tell me more about that. • What was your first impression? • What were you expecting? • Had you been there before?
Patient waits to be called for appointment	• How was your experience waiting for your appointment.	• How did you know where to wait? • How did you feel while you were waiting?
Appointment with nurse	• How was your appointment with the nurse?	• Were you satisfied with the care you received? • Were you seen on time? • How did you feel? • Had you met the person before? (if you have been there before) • Did you feel comfortable with the person you saw?
Make any further appointments	• What happened at the end of your appointment?	• Did you have further appointments booked for you? • How would you feel about coming back? • Were the next steps clear?

Table 15: NHS Shetland CTAC discovery conversation plan

Journey touchpoint	Discovery questions	Digging deeper questions
Making an appointment	• Tell me about how you got your appointment.	• What was that like for you? • What was your understanding of what the appointment was for?
Arriving at health centre	• Walk me through what happened when you arrived.	
Booking in	• What were your first impressions of reception?	• Who did you speak to?
Waiting room	• What was it like waiting in reception?	• How did that feel?
Clinic room	• Walk me through how you got to the clinic room.	
Clinic staff member	• What was it like meeting the clinic staff member? • What happened at your appointment?	
Tests or treatment?	• Tell me about any tests or treatment you received. • What else did they tell you?	• What were you thinking then? • What was important to you about?
Leaving the health centre	• What happened after you left the clinic room?	• What else would you like to share about your experience today?

Data collection and analysis

Demonstrator sites collected a range of QI measures, including:

- outcome measures: measures that directly reflect the project aim
- process measures: measures of the processes and systems that influence the aim, and
- balancing measures: any unintended consequences of the change.

Demonstrator sites collected and visualised data locally in a format of their choice and shared this with Healthcare Improvement Scotland monthly for review and discussion. In preparation for this report Healthcare Improvement Scotland improvement staff visualised the data using standardised run chart templates. Charts were reviewed with data and measurement advisors to ensure run chart rules had been applied appropriately and as consistently as possible. A baseline median of 12 points was used as standard for outcome measures. Six points were used for process and balancing measures.

Limitations

Data availability
Data available from IT systems varied from site to site. Some demonstrator sites planned to use system data but found it was not available or only provided snapshots.

All demonstrator sites had to collect some data manually. This created additional workload for clinical and administrative staff.

Data could not be collected against some measures because of issues including delays in testing changes, IT system limitations, and the time-consuming nature of manual data collection.

Data quality
QI data is collected on a small-scale aiming to provide 'just enough' information for the local improvement team. This makes it difficult to draw wider conclusions from the data.

A number of measures relied on manual data collection which led to quality issues including missing data, bias, and inconsistent collection over time.

Comparing between demonstrator sites
QI data is primarily for local use and demonstrator sites defined their own measures. Demonstrator sites chose to measure similar changes using different data and methodology which means demonstrator sites cannot be compared using the QI data.

Demonstrator sites had various levels of access to local QI support. This had an impact on the development of measurement plans and how data was collected and visualised.

Workstream 2: Week of care audit (WoCA)

Aim

The WoCA is a tool designed to capture activity over five consecutive working days. It was used in 18 GP practices on three separate occasions. The purpose of the WoCA was to assess the potential transfer of tasks from GPs and general practice nurses (GPNs) to other members of the MDT, as outlined in the General Medical Services (GMS) contract (2018), and to gain insight into current MDT working practices. WoCA was developed collaboratively with national clinical leads and tested by GPs and GPNs.

The WoCA data also helped to draw conclusions on the areas of focus shown in the table below:

Table 16: WoCA

Aim	Area of focus	Topic	Data collected
Build evidence	MDT services that should be prioritised for further development	GP consultations	• The main reason for the appointment. • The time spent on the appointment. • Which member of the MDT, including the GP, was most appropriate to conduct the consultation.
		GP non-patient facing activity	• The type of activity and the approximate number (for example, 10 acute prescriptions). • The time spent on each activity or bundle of activities. • Which member of the MDT, including the GP, was most appropriate to complete the activity.
		GPN activity	• the time spent on those appointments or activities. • Whether the CTAC team could have completed the appointment or activity. • the main activity or reason for the appointment (this includes non-patient facing activity).
		Pharmacotherapy staff activities	• The number of activities, by role, activity type, and whether carried out by practices and hubs.

Data collection and analysis

Data was collected as described in *Table 16* above. Once Healthcare Improvement Scotland received the data, it was reviewed for accuracy and completeness before being entered into MS Excel visualisation tools.

A total of 18 practices collected data: three in NHS Borders, three in NHS Shetland, three across the Edinburgh City HSCP demonstrator site practices, and three in each of the three HSCPs (nine in total) in NHS Ayrshire & Arran. There was a total of three WoCAs carried out in March, June and September 2025. The data presented in the final report are from the June audit as this represents the best quality data available at the time of writing the report. The tools used in the June WoCA are included in Appendix 7.

Limitations

Data completeness

- In some practices, staff members who were recorded as working did not submit data collection sheets. Data completeness was calculated as the percentage of working hours/GP sessions with submitted sheets. On average, data completeness was 94% for GP consultations and non-patient facing activity, and 93% for GPNs, though some practices had lower rates–down to 78% for GPs and 63% for GPNs–therefore results may not fully reflect the work in some practices.
- In addition, even where a clinician submitted sheet/s, it was not possible to assess whether the sheet included all their appointments and tasks, leading to a risk of undercounting of activity. This undercounting was not included in the data completeness figures above, as it is not possible to measure it.
- Completeness could not be calculated for pharmacy staff, as hub staff also worked on tasks for practices that were not part of the audit.

Data quality

- Some data submissions were partially incomplete, missing details like activity type, duration, most appropriate role, or whether CTAC could have completed the task (for GPNs). This meant some data had to be excluded from some analyses.
- Data collected manually by staff were transcribed into MS Excel by a practice coordinator, but since only the collated data were submitted, any issues with the original sheets could not be assessed.
- Data was collected manually and could therefore be influenced by the views and experiences of the people collecting the data.
- The time spent on all activities is an estimate and could be under or overestimated.

Comparing between demonstrator sites

- Large variations between practices were influenced by factors such as size, rurality, population demographics, staffing, working practices and availability of services. Additionally, NHS Ayrshire & Arran had nine participating practices, compared to only three in each of the other demonstrator sites.
- Combining data from different practices might hide what makes each one unique, so generalising results with other practices is not recommended.
- The participating practices represent only a small sample of each demonstrator site, and results are not applicable across demonstrator sites or to Scotland as a whole.

Data interpretation

- The WoCA did not consider work that may be added to GP or GPN workload, for example, by task transfer from GPs and/or ANPs to GPNs, or from additional checking/mentoring that GPs or GPNs may have to engage in to support MDT working.
- Pharmacotherapy data collection did not include time taken, so the complexity of tasks, which affects duration, should be considered when interpreting results.
- Where data included a lot of items in 'other' categories, interpretation of results is less meaningful.
- Percentages are rounded, and in some cases may not sum to 100%.
- Some decisions about whether a consultation is more appropriate for a different member of the MDT may only be possible to make after the individual has been seen. Therefore, the potential for work to be transferred to another member of the MDT may be less than indicated.

Workstream 3: Economic analysis

Aim

The economic analysis aimed to assess whether the PCPIP demonstrator sites delivered value for money and improved workforce capacity in primary care.

Data collection and analysis

Two approaches were initially proposed: a Cost Consequence analysis (CCA) to capture the costs and outcomes of local 'tests of change' at demonstrator sites, and a Discrete Choice Experiment (DCE) to estimate potential efficiencies from transferring tasks from GPs to other MDT members.

Cost Consequence analysis (CCA)

The CCA aimed to identify the value expected for each demonstrator site in terms of the costs and outcomes they delivered. This was done by collecting data from teams within each demonstrator site on tests of change undertaken. Tests of change were developed locally and included in measurement plans. The number of 'tests of change' varied between demonstrator sites as did the amount of time available to collect data, as some took more time to begin their changes. Final data submissions were sent by demonstrator sites in September 2025.

Costs were available in Pounds Sterling for the most recent price year available (2024). As is standard practice for economic evaluations, the proposed analyses focused exclusively on NHS Boards and HSCPs. Wider public sector or societal costs and benefits were not considered.
The CCA was constrained by short implementation timescales and limited outcome data from demonstrator sites.

Discrete Choice Experiment (DCE)

The aim of the DCE was to assess efficiency of capacity within the system by sampling staff regarding their preferences for choosing between standardised and hypothetical examples of caseload scenarios, including the time taken to complete tasks. A four-part DCE questionnaire was developed based on information from the WoCA, which gave information about tasks undertaken by different staff groups. The first part asked about preference for task transfer and taking on tasks from colleagues generally, the second part asked about the factors that influence decisions to transfer tasks and take on tasks. The third and fourth parts included questions relevant to the tasks undertaken by each staff group (GPs, GPNs, CTAC, Pharmacists, pharmacy technicians and PSWs) and asked about transference of tasks to colleagues or taking on tasks from colleagues.

A scenario was created that asked participants to imagine that they had been called away urgently and had to make a choice about transferring a task to a colleague or to imagine that the colleague had been called away urgently and they had to make a choice about taking on a task for them.

The questionnaire was piloted with clinicians who gave valuable feedback. The DCE proved infeasible following piloting because of difficulties designing realistic task transfer scenario and identifying a consistent quantitative variable for analysis.

In practice, limitations in available data meant that neither the DCE nor the CCA approach could generate robust results.

WoCA

As a result, additional analysis using WoCA data was undertaken to estimate potential resource efficiencies if certain tasks currently undertaken by GPs or practice nurses were performed by more appropriate MDT staff. This included identification of:

a) a limited choice of relevant alternative MDT members who would have, on reflection following the task, been more appropriate for the task where clinicians (GPs and GPNs) said that they were not the most appropriate person, and
b) time taken, specifically considering capacity and comparative costs/potential savings if it was considered feasible to make efficiencies gains with further changes to MDTs compared to the week of care data.

Potential GP and GPN resource savings were calculated by collecting the sum of the total time taken across all WoCA tasks where staff members said it could be done by someone else. Based on these data, an efficiency savings estimate was calculated as the difference between the costs of a GP/GPN doing the work where they stated they were not the most appropriate person, compared to the cost of the most appropriate person doing the work. The analysis drew on data from the second WoCA, which represented the highest-quality data available at the time of writing.

Limitations

It is important to note that the data used in this analysis were not specifically designed to assess efficiency or substitution between professional roles. In particular:
The analysis included possible capacity savings but should be interpreted cautiously because of several limitations, including short programme timescales, incomplete data on time spent by different staff groups, assumptions about task duration and uncertainty about how generalisable the demonstrator site findings are across Scotland.

The WoCA analysis focused primarily on GPs time. The WoCA did not capture sufficient data from pharmacy staff to support robust analysis of potential alternative resource use. For GPN staff, the audit considered only CTAC staff as the alternative MDT staff group. As a result, any estimates of resource savings carry a high degree of uncertainty, given the potential overlap in Agenda for Change pay bands between GPN and CTAC nursing staff.

Estimates are based on clinicians' retrospective judgements about whether they were the most appropriate person to undertake a given task, rather than on prospective triage decisions made as part of routine clinical practice. As such, these assessments may not fully reflect how MDT workloads would be allocated in real-time service delivery.

The analysis also does not account for emerging clinical complexity that may require multiple contacts or sequential input from different members of the MDT. For example, a patient may initially be seen by an alternative practitioner but subsequently require review by a GP. Implicitly, the analysis assumes that patients are accurately directed to the 'right' MDT member prior to consultation and that the presenting problem is fully managed without the need for further GP involvement. These assumptions represent an idealised model of care that may be difficult to achieve consistently in practice.

The estimated efficiency gains should not be interpreted as cash-releasing savings for GP practices. The analysis does not capture other sources of inefficiency that occur in routine clinical settings– such as duplication of work, staff absences, or constraints on availability of the most appropriate professional– which are difficult to measure and cannot be readily attributed to audit data. The analysis does not capture other sources of inefficiency that occur in routine clinical settings–such as duplication of work, staff absences, or constraints on availability of the most appropriate professional–which are difficult to measure and cannot be readily attributed to audit data.
Unit costs of staff time are derived from the Personal Social Services Research Unit (PSSRU) 'unit costs of health and social care', a widely used and standard source for health economic analysis. These costs reflect full economic costs, including overheads, equipment, and training, which may disproportionately affect GP cost estimates. Moreover, the PSSRU figures are based on English NHS contractual arrangements. While routinely applied in UK health economic work, differences in staff pay structures and employment arrangements in Scotland may affect the transferability of these cost estimates and, consequently, the results of the analysis.

Workstream 4: Qualitative data

Aim

The qualitative workstream aimed to explore service user and staff experiences and perceptions of the impact of implementation of the GMS Contract, the impact of a focus on CTAC and pharmacotherapy services on fuller implementation of the contract, and to assess the impact of Healthcare Improvement Scotland QI support in improving implementation of services covered by the regulation in the GMS contract.

Qualitative data collection focused on topics aligned with the aims in the evaluation proposal. Analysis was conducted in relation to five out of the six focus areas, as outlined in the table below:

Table 17: Qualitative evaluation

<table>
<tr><th>Aim</th><th>Area of focus</th><th>Topics explored</th></tr>
<tr><td rowspan="5">Build evidence</td><td>Key conditions for change and enablers required to support MDT working</td><td rowspan="5">• MDT working (including workforce planning, development and supervision).
• Strategic leadership and partnership management.
• Previously identified and emerging barriers and facilitators.
• Release of GP time to act as expert medical generalist.
• Staff retention.
• Integrated MDT team.
• Staff wellbeing.
• Service user engagement.
• Addressing inequalities.
• Efficiency of system.
• Integrated services.
• Primary and secondary interface.
• Unintended consequences.
• QI support and additional Scottish Government funding.
• Culture for improvement.
• Release of GP time to act as expert medical generalist.</td></tr>
<tr><td>Key attributes of a sustainable and effective model of MDT support</td></tr>
<tr><td>Requirements to ensure MDT working supports the reduction of health inequalities</td></tr>
<tr><td>Learning from the QI approach embedded in PCPIP to support future implementation of the MDT and policy development</td></tr>
<tr><td>MDT services that should be prioritised for further development</td></tr>
</table>

Data was also collected to explore service users' perceptions using Barbara Starfield’s 4C framework: Contact, Comprehensiveness, Coordination, and continuity of care, as well as the Safety and Efficiency of Care and were consequently excluded from the areas of focus analysis because of the limitations described below.

Data collection and analysis

Qualitative data collection took place from October 2024-July 2025. A multi-strategy, pragmatic approach was adopted to identify, access and recruit a sample of the primary care workforce and service users across the demonstrator sites, as outlined in the evaluation proposal. This included 61 uni-disciplinary focus groups (each involving between two and ten participants) and 139 semi-structured interviews across four stakeholder groups: primary care staff, demonstrator site leadership teams (including some demonstrator site QI team members), service users and Healthcare Improvement Scotland QI team. Staff data were collected both online and in-person across the four PCPIP demonstrator sites. Telephone interviews were held with service users, primarily recruited via practice staff. A total of 326 participants contributed to the qualitative evaluation (see breakdown in Table 18 and Table 19).

Table 18: Total number of staff and service user participants in an interview or focus group.

Staff group	Participants
GPs (including locums)	35
General practice nurses	15
Advanced nurse practitioners	15
Pharmacotherapy staff (Pharmacists, Pharmacy Lead Technicians, Pharmacy Technicians, Pharmacy support workers)	55
CTAC staff (including Healthcare support workers)	38
Practice managers	22
Administration staff	25
Additional services staff*	16
Subtotal	**221**
Members of leadership team (follow-up interviews included)	66
Members of the Healthcare Improvement Scotland QI team	11
Service users	28
Total participants	**326**

**Community link workers, mental health staff, first contact physiotherapists.*

Table 19: Total number of staff and service user participants in an interview or focus group, by demonstrator site.

Demonstrator site	Staff	Leadership team	Service users	Total
NHS Ayrshire & Arran	49	30	6	85
NHS Borders	54	12	9	75
Edinburgh City HSCP	63	13	12	88
NHS Shetland	55	11	1	67
Total	**221**	**66**	**28**	**315**

Data was collected, stored, and managed in accordance with the Healthcare Improvement Scotland Data Protection Regulation. Transcripts were coded using NVivo (v15), and the team engaged in regular discussions to refine the coding process, identify themes, and assess data saturation. Thematic analysis was conducted for each site and then reviewed collectively to reflect on and categorise themes across the four demonstrator

sites, while ensuring anonymity within each focus area. In June 2025, analysis for this workstream pivoted to align with the agreed areas of focus.

Limitations

Service user data

- Most service user participants were selected by practices and the demographic characteristics of the recruited service users varied little, resulting in a homogeneous sample. Further, NHS ethical approval was not sought for the qualitative evaluation (as this was not considered research). Participants could not therefore be selected based on protected characteristics, and topics related to their health or protected characteristics in relation to their experience of primary care could not be explored. The data would be best used to inform the development of more detailed qualitative service user research and evaluation, for which NHS ethics approval should be sought.

Staff data

- There may be potential bias in the staff data, as staff recruitment in some areas was a result of variations in recruitment strategies across staff groups in demonstrator sites.
- Activity related to PCPIP was known to be a variable according to local context. Different numbers of staff participating from each demonstrator site may have introduced bias in relation to delivery models in place at a particular site.
- Data was only collected at a single time point during the programme, with no follow-up, which may or may not have coincided with the introduction or implementation of PCPIP related changes at a given site. Therefore, the data does not consistently capture pre- and post-implementation or ongoing PCPIP related changes. Furthermore, the qualitative data are not intended to represent a definitive pre- or post-PCPIP assessment. Instead, they offer a snapshot of experiences and perceptions at the time of data collection, illustrating how PCPIP activities were being understood and operationalised within local contexts.

Workstream 5: Service user views from Citizens' Panel

Aim

The Citizens' Panel for health and social care was established in 2016 as a nationally representative body of citizens, not limited to the PCPIP demonstrator sites. It brings together the views of over 1,100 members of the public, asking their opinion on different health and social care issues.

As mentioned earlier, qualitative data were collected to understand service user outcomes, particularly their experiences and behaviours within the MDT component. In addition, PCPIP focused on gathering comprehensive quantitative data on service user experiences across the current primary care system. This data was sourced from the Sixteenth Citizens' Panel report, which covered a wide range of topics among service users.

As a result, data from Citizens' Panel report informed the findings on the following areas of focus.

Table 20: Citizens' Panel for health and social care

Aim	Area of focus	Topic	Data/measure(s)
Build evidence	Support requirements for monitoring and evaluation of the impact of MDT working	Local Medical Practice	• Access to care when needed • The extent to which care met healthcare needs over the past year • The level of joined-up approach among healthcare staff • The importance of seeing the same healthcare professional
		Continuity of care	• Awareness of fast access vs personal continuity of care • Importance of fast access to care • Importance of personal continuity of care • Importance of benefits of personal continuity of care • Ability to request personal continuity of care

Data collection and analysis

Data collection methods

A survey was sent out to all panel members between the end of June and mid-September 2025. This survey ensured that the data collected was reliable, representative, meaningful, and able to provide valuable insights into public opinion. This work was conducted by Healthcare Improvement Scotland's Engagement Practice-Evidence Unit in the Community Engagement and Transformation Directorate.

Responses were collected through multiple channels: post, email, and telephone. Using diverse methods helped reach a broader audience and improve the representativeness of the sample.

Sample size and response rate

The survey received a total of 659 responses, which represented a 59.5% response rate. This response rate indicated a good level of engagement from Citizens' Panel members.

Accuracy and margin of error

The survey aimed to be accurate to +/-5%. This level of return provided data accurate to +/- 3.8% at the overall panel level (based upon a 50% estimate at the 95% level of confidence). This margin of error indicated the range within which the true values in the population were expected to fall, providing confidence in the survey results.

Statistical significance

All comparisons made are statistically significant unless otherwise stated. This ensured the differences observed were likely because of actual differences in opinions rather than random chance. The response was underrepresented by younger respondents and overrepresented by older respondents. The response was also underrepresented in terms of those living in social housing and private rented accommodation. To ensure the data was representative by age and tenure, survey data was weighted to adjust for this imbalance and ensured the survey was representative of the population.

Limitations

- While the Citizens' Panel is designed to reflect the Scottish population, younger age groups and those in rented housing are underrepresented. Weighting was applied for age and housing tenure, but other seldom-heard groups may remain underrepresented. The Citizens' Panel is generally regarded as representative of the 'general population.'
- Results are robust at national level but do not support detailed analysis for small subgroups or local areas.

Workstream 6: Local system and record sampling

Aim

Sampling of local data was required to obtain operational data for the evaluation where there was no national system that routinely collects and shares the data. It provided additional insights into the quantitative data. As a result of the need to use ad-hoc processes to obtain this data, sampling data from a small number of practices per demonstrator site was conducted instead.

Some of these measures were not expected to change over the short lifetime of the project but were intended to establish a baseline and inform the creation of a standard set of national measures for ongoing monitoring and future evaluation of the impact of the MDT component of the GMS contract.

Data from local system and record sampling informed the following areas of focus:

Table 21: Local system and record sampling

Aim	Area of focus	Topic	Data/measures(s)
Build evidence	Requirements to ensure MDT working supports the reduction of health inequalities	Access to care	• Number and rate of direct encounters by staff group. • Proportion of direct encounters and practice population by health board Scottish Index of Multiple Deprivation (SIMD) quintile. • Comparison of service user SIMD profile per MDT service with local population by SIMD to identity gaps.
	Support requirements for monitoring and evaluation of the impact of MDT working	Access to care	• LTC reviews attended, including chronic obstructive pulmonary disease (COPD) and Type II diabetes.
		Continuity of care	• Proportion of consultations with the person's regular care provider out of all consultations.
		Improved medicines management	• Percentage of all dispensed prescriptions that are serial prescriptions.
		Impact of MDT on workforce	• Staff turnover rate. • Vacancy rate. • Absence rate.

The evaluation overview includes details on the rationale for selecting the above measures.

Data collection and analysis

Public Health Scotland (PHS) was commissioned by Healthcare Improvement Scotland to support local data collection and analysis for PCPIP. PHS provided this support through the period September 2024-December 2025, in addition to the ongoing support provided to each Demonstrator Site by PHS's Local Intelligence

Support Team (LIST). Where data could be obtained centrally, for example using PHS-held data or with Albasoft's support, this was done and outputs shared with the relevant practices.

PHS worked with local services, HSCPs and their associated GP clusters to access and extract relevant data from local systems to inform the evaluation.

GP practice recruitment

- PHS worked with 19 practices across the four demonstrator site areas.
- Practices were labelled with letters for example A, B, C, and so on) to maintain anonymity.

Data extraction

- PHS worked with the participating practices to identify data collection methods specific to their local IT system.
- Data was collected from the practice's Egton Medical Information Systems (EMIS) or Vision Systems, SCI Diabetes, national Prescribing Information System (PIS), and Public Services Delivery Scotland (formerly NHS Education for Scotland (NES)) Workforce Survey.

Analysis considerations – encounters measure

- The analysis of data on practice encounters divided staff into two broad groups, GP and wider MDT, for analysis. This decision was taken as it was not possible to reliably distinguish between board employed staff members on EMIS or Vision by the job roles defined on practice systems. For example, practice nurses included both practice-employed nurses and board employed CTAC nurses.
- The analysis used direct encounters to assess patient access by SIMD. This ensured, as far as possible, the data reflected patient facing activity only. Direct encounters included surgery consultations, telephone consultations, home visits, clinic, e-consultations and triage on the practice EMIS and Vision systems.
- The analysis used health board SIMD quintiles which ranked areas within the health board by deprivation and assigned them to quintiles based on their position within the health board. As a result, an area categorised as SIMD 1 within the health board was not necessarily categorised as SIMD 1 nationally. As the data was analysed and presented at a practice level, this methodology best reflected any local inequalities experienced by participating practices.

Practice feedback and quality assurance

Practices were presented with a data pack containing their own indicators for review and were invited to provide feedback on the trends observed. For each indicator, practices were asked whether they were aware of any data quality issues, any practice led QI work in the area, what additional resources were available to the practice during the time period (both PCPIP and practice-employed) and whether the trends observed are what they would have expected. Not all practices were able to provide feedback within the timeframe of this work.

Limitations

Data quality

- Variation in coding and recording approaches between practices prevented comparisons between demonstrator sites.

- There were known data quality issues with GP encounter data that were detailed in the national GP in hours publication: General Practice in-hours activity visualisation. The analysis used direct encounters to ensure that these known issues had a minimal impact.
- Data on direct encounters reflected only the total numbers of encounters, no account was taken of how long an encounter lasted or its complexity in this analysis.

Data extraction

- Demonstrator sites had different methods of extracting data from their EMIS and Vision systems for analysis. In NHS Ayrshire & Arran and NHS Borders, local GP IT facilitators built EMIS web queries to extract the data on encounters and COPD LTC monitoring. Additional work by facilitators and practice staff was also required in these areas to map encounter types in EMIS web before extraction.
- By contrast, Edinburgh City HSCP and NHS Shetland extracted data centrally for all participating practices from the DataLoch and NHS Shetland Health Information Platform (SHIP) platforms respectively, both of which utilise data from the Albasoft ESCRO data pump.

Limited data availability

- Workforce data is only available through the PSDS Workforce Survey. Not all practices from the cohort participated consistently year on year.
- Continuity of Care data was only available from July 2023 because of high computational demands limiting historical data availability.
- Data on repeat prescriptions was only available as a snapshot on the Scottish Therapeutics Utility (STU) system in practices. Trend data for this indicator was therefore not able to be collected.

Influence of external factors

- Other activities may have affected indicator rates independently of PCPIP Demonstrator work.
- Healthcare systems are complex and influenced by multiple factors, making it difficult to attribute changes seen in system level data to any single factor.

Workforce survey limitations

- There was incomplete participation in PSDS Workforce Survey across the cohort of practices (not all practices participate every year, or at all).
- There were changes in survey question wording across years, which led to inconsistencies.

Workstream 7: National data

Aim

These data are a subset of the measures identified as potential indicators for monitoring and evaluating primary care. These indicators are routine system data held by PHS.

These measures were not expected to change over the short lifetime of the project but were intended to establish a baseline and inform the creation of a standard set of national measures for ongoing monitoring and future evaluation of the impact of the MDT component of the GMS contract.

These data inform the focus area below.

Table 22: National data

Aim	Area of focus	Topic	Measure(s)
Building evidence	Support requirements for monitoring and evaluation of the impact of MDT working	Patient outcome data	National Therapeutics Indicator (NTI) data. • Falls, fractures, and delirium, (anticholinergics). • Mental health triple whammy. • Poor asthma control. • Type two diabetes and atherosclerotic cardiovascular disease (ASCVD) management. • Wound care.
		Primary care activity data	• Number of encounters for GPs, GPNs and members of the wider MDT. • GP referrals to elective care.
		Data on unscheduled care	• Accident and emergency attendees who are not admitted to hospital. • Potentially preventable admissions. • Use of NHS24 and out of hours (OOH).

Data collection and analysis

PHS provided data from January 2022 until the most recent data available. Data for each measure was analysed by demonstrator site where possible. The findings from the national data cannot be used to inform any meaningful conclusions on the work carried out during the lifespan of PCPIP. Therefore, the data is not presented within this report. As described in the limitations of this data, the limited number of data points since the start of the programme means it is unlikely that statistically significant changes would be seen in these short timescales. These measures have the potential to be useful for assessing trends over longer periods of time. However, healthcare systems are complex and influenced by multiple factors, making it difficult to attribute patterns seen in these data to system level changes.

Limitations

- These indicators do not provide definitive proof about the quality of care (good or poor) and should not be used to make judgements about quality/performance.
- These measures have the potential to be useful for assessing trends over a longer timescale, rather than during the lifespan of the PCPIP programme. Limited data points beyond April 2024 (when the PCPIP programme began) meant that it was not possible to highlight statistically significant changes in the data that were attributable to the PCPIP.
- The data are high-level system data and are far removed from changes at practice level. Small-scale improvements made in individual practices were unlikely to be seen in these data unless/until changes are adopted more widely across the system.
- Long-term patterns provide important context for interpreting the indicators. Where patterns in the data predated the start of improvement work, these patterns cannot be attributed to the improvement work undertaken, but this historical or background pattern should always be considered when interpreting these data over time.
- Healthcare systems are complex and influenced by multiple factors, making it difficult to attribute changes seen in system level data to any single factor.

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