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PROGRAMME DESCRIPTION

# Developing and evaluating pharmacist prescribing supervision for foundation trainee pharmacists in South East London

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## Abstract

**Background:** In response to the General Pharmaceutical Council's new standards requiring pharmacists to qualify as independent prescribers at registration in the UK, the South East London Prescribing Integration Project aimed to address the resulting challenges in supervision capacity and training design for Foundation Trainee Pharmacists (FTPs). **Methods:** A multi-phase programme was co-designed with stakeholders from general practice, hospitals, and community pharmacies. It involved creating a prescribing training workbook for Foundation Trainee Pharmacists (FTPs), a specialised training package for Designated Prescribing Practitioners (DPPs), and a multi-sector pilot, with the training design guided by a hypothetical collaborative prescribing endpoint. A mixed-methods evaluation was conducted using survey data, learning logs, and progress reviews, although qualitative findings from focus groups are not included in this paper. **Results:** Fifty-eight pharmacists attended the DPP training, with 44 participating in the pilot and 42 providing survey data. The training significantly improved DPP preparedness ($p < 0.001$), and FTPs logged over 860 hours of learning. Six supervision dimensions emerged from the pilot, highlighting practical considerations for structuring prescribing-related learning, supervision and assessment. **Conclusion:** The programme provides evidence of the feasibility and potential value of a co-designed model for supervision for trainee pharmacists grounded in a collaborative prescriber endpoint. Findings offer practical insights to inform national implementation and policy development.

## Introduction

In January 2021, the General Pharmaceutical Council (GPhC) published new Standards for the Initial Education and Training of Pharmacists in Great Britain (General Pharmaceutical Council, 2021). This marked a pivotal change, with Foundation Trainee Pharmacists (FTPs)—previously known as pre-registration pharmacists—training to a new set of standards and qualifying as independent prescribers at the point of registration.

Pharmacists in the UK have been able to train as prescribers since 2003, first as supplementary prescribers, and by 2006 as independent prescribers. Traditionally, doctors have taken on the primary role of supervising prescribing training. However, there is a recognised and significant shortage of supervisors, known as Designated Prescribing Practitioners (DPPs). A scoping report by Health Education England highlighted the extent of this shortfall, which poses a substantial challenge to meet the growing demand for independent prescriber training and ensuring adequate supervision across healthcare settings (Health Education England, 2022). The integration of

prescribing training into the five years prior to pharmacist registration underscores the need for innovative training and supervision models. As all pharmacists will now train as prescribers, there is a need to expand the pool of DPPs, building this capacity within pharmacy rather than relying primarily on doctors.

Against this backdrop, the Prescribing Integration Project (PIP) in South East London aimed to address these challenges and opportunities. It achieved this by collaborating with local stakeholders, including pharmacy professionals from the Integrated Care Board, NHS Trusts, community pharmacies, and General Practice. Together, they co-designed and piloted a training package for DPPs, which was followed by the development and evaluation of approaches to prescribing supervision for FTPs. Co-design fosters collective creativity, allowing all participants to contribute meaningfully and align with project outcomes. Sanders and Stappers highlight that co-design enables 'all stakeholders in the design process to recognise and utilise their own creativity', a crucial aspect when addressing complex, multi-faceted challenges within educational settings (Sanders & Stappers, 2008).

The project was supported and funded by NHS England Workforce, Training and Education (WT&E) – London region. It is important to note that this project work began before the NHS England WT&E foundation training assessment strategy and guidance was published (NHS England, 2024).

A key part of this project was to define what early-career prescribing activity should look like for pharmacists. This conceptual work informed the use of a hypothetical collaborative prescriber endpoint, which underpinned the design of the training programme and supervision model. Given the novel nature of prescribing at the point of registration, pharmacy professionals in South East London sought to explore whether traditional models—typically built around competency in a specific therapeutic area—were appropriate or sufficient.

A group of pharmacists with broad cross-sector representation engaged in a structured process to appraise different approaches to defining prescribing scope of practice. Approaches drawn from practice included defined medicine lists, condition-specific scopes, and a collaborative approach, which prioritised the flexible application of transferable prescribing skills, enabled through multidisciplinary collaboration. These models were appraised across five domains: patient safety, foundation-year feasibility, adaptability to local services, impact on DPP recruitment, and supervisor development needs.

Consensus was reached around the collaborative approach as most appropriate end point for early career pharmacists, which was adopted as the foundation for the remainder of the project, including the FTP training plan, DPP training package, and multi-sector pilot.

This conceptual work informed the design of the training programme and supervision model evaluated in this paper. The aim of this service evaluation was to examine the implementation of this approach within a multi-sector pilot in South East London.

## Description of the programme

### *Phase 1 – Co-design of the prescribing training workbook and DPP training package*

Building on the conceptual model of collaborative prescribing, Phase 1 involved the co-design of two key training resources: the prescribing training workbook for Foundation Trainee Pharmacists (FTPs) and a bespoke training package for Designated Prescribing Practitioners (DPPs).

#### *Prescribing training workbook*

The prescribing training workbook was co-designed to guide Foundation Trainee Pharmacists (FTPs) through a structured, yet flexible, period of learning in practice. Drawing on the collaborative prescribing approach, the workbook translated the GPhC learning outcomes into practical activities and workplace-based assessments (see figure 1). The design prioritised broad applicability across sectors and aimed to support the development of prescribing skills grounded in collaboration and routine clinical oversight—rather than preparing trainees for highly autonomous prescribing within a defined therapeutic area (e.g., a clinic setting).

The co-design process involved first rating the relevance of the GPhC learning outcomes to prescribing, and then developing workbook objectives, suggested activities, and appropriate assessment strategies to support trainee progression (Figure 1). This resource provided a framework for DPPs and FTPs to plan, undertake, and reflect on prescribing-related activities during the 90 hours of learning in practice time.

#### *Designated Prescribing Practitioner (DPP) training package*

In parallel, a three-hour online induction training package was co-designed to prepare pharmacist prescribers for the role of DPP. The training clarified

expectations for both FTP as a future prescriber and the DPP's supervisory role within the context of collaborative prescribing. It also provided practical guidance on using the workbook, conducting workplace-based assessments, and delivering effective feedback.

It is important to note that the training did not set out a fixed approach for how the workbook should be implemented by each DPP. This flexibility was intentional, allowing different supervision methods to develop organically across organisations and settings and enabling these to be explored through evaluation.

Both the workbook and the DPP training package were finalised in mid-2023, forming the core infrastructure for Phase 2: delivery of the DPP training and implementation of the pilot for evaluation.

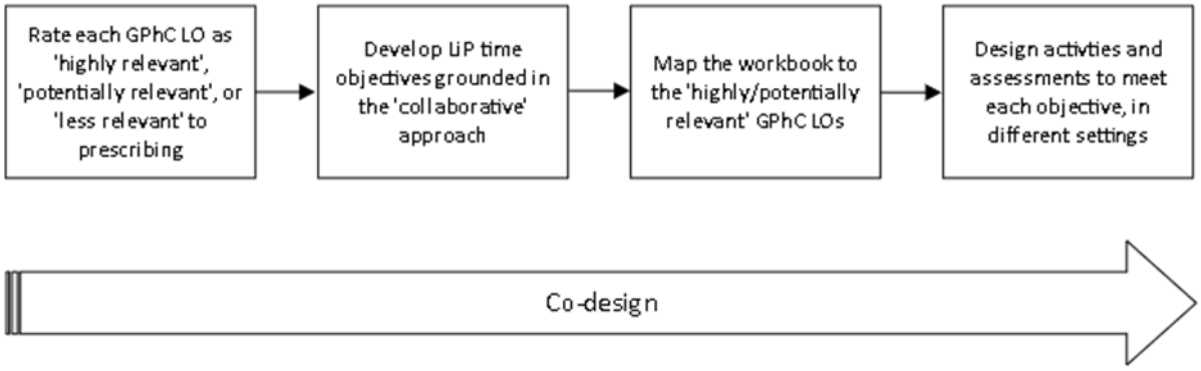


**Figure 1: Co-design of the foundation training workbook. The process involved aligning the workbook objectives with the new GPhC learning outcomes (LOs), developing relevant suggested activities and an assessment strategy**

***Phase 2: DPP induction training and pilot phase***

The training for DPPs was conducted over six weeks in September and October 2023. Following this, the pilot phase—in which DPPs supervised prescribing training and collected data—ran from November 2023 to February 2024 in multiple organisations and settings across South East London.

*Participants: DPPs*

A total of 58 pharmacists attended the DPP induction training. Of these, 55 completed the pre-training survey and 50 completed the post-training survey. Following the training, 44 DPPs agreed to participate in the pilot phase. Not all pilot participants completed evaluation surveys; therefore, analyses relating to pilot survey data are based on available responses (n = 42 for pre-pilot survey; n = 39 for post-pilot survey).

*Participants: FTPs*

62 FTPs attended the induction session, with 41 then going on to log Learning in Practice (LiP) time hours during the delivery of prescribing training part of the pilot.

Participants were recruited through expressions of interest from organisations across South East London participating in the Prescribing Integration Project. Eligible participants included pharmacists undertaking the Designated Prescribing Practitioner (DPP) role and Foundation Trainee Pharmacists (FTPs) involved in the pilot.

***Evaluation***

The evaluation focused specifically on Phase 2 of the project i.e., the DPP training package and the pilot.

## Methods

A mixed-methods evaluation approach was used for Phase 2 (Palinkas et al., 2019; Hsieh & Shannon, 2005). Quantitative data were collected through pre- and post-surveys. Additional contextual data were collected through free-text survey responses, learning in practice logs, progress reviews, and focus groups; however, formal qualitative analysis is not reported in this paper. The findings presented here therefore focus on the survey data, logged learning in practice hours, and progress review data. To ensure compliance with the General Data Protection Regulation (GDPR), unique identification codes were assigned to DPPs and FTPs for all surveys. The project was classified as a 'service evaluation' by the UK Health Research Authority's decision tool, and, therefore, did not require review by a research ethics committee (Health Research Authority, n.d.). This classification reflected the

project's aim to evaluate the implementation and delivery of a locally developed training and supervision model, rather than to generate generalisable research findings. Data collection methods, including surveys and focus groups, were used to support service improvement in line with UK Health Research Authority guidance.

This service evaluation was informed by principles from the SQUIRE 2.0 guidelines for reporting quality improvement and service development studies (Ogrinc et al., 2016).

### *Measures*

The following tools were used to collect data. Surveys included pre- and post-training surveys for DPPs, employing a 1–5 Likert scale to assess preparedness across multiple aspects, such as understanding of collaborative prescribing, role clarity, manageability of supervision time, confidence in supervision, ability to identify and meet learning needs, and skills in workplace-based assessments and feedback. Additionally, pre- and post-pilot surveys for DPPs and FTPs evaluated experiences during the pilot, opinions on the workbook, and views on supervision models, with the DPP post-pilot survey also assessing the training package's effectiveness. Learning in Practice (LiP) Logs were completed by FTPs using a custom Microsoft Form to record prescribing-related learning hours, including the sector. Progress Review Forms, also using bespoke Microsoft Forms, were completed by DPPs and FTPs for up to three reviews (initial, interim, and final) during the pilot. Focus groups were conducted via Microsoft Teams, with two sessions for FTPs and DPPs.

Survey instruments were purpose-designed for this service evaluation and aligned to the objectives of the training programme and pilot. Items were developed to capture key domains relevant to prescribing supervision, including preparedness, role clarity, supervision confidence, and use of workplace-based assessments. The surveys were iteratively reviewed by the project team during development. Formal validation of the instruments was not undertaken.

Likert-scale data were analysed using paired samples *t*-tests. Although Likert items are ordinal in nature, parametric tests are commonly used in health education research where data are approximately normally distributed and where multiple items are aggregated to reflect underlying constructs. This approach is considered appropriate for detecting changes in mean scores over time in similar evaluation studies (Norman, 2010). Effect sizes were calculated for paired comparisons using Cohen's dz to quantify the magnitude of observed changes.

Multiple statistical comparisons were conducted across individual survey items. Given the exploratory nature of this service evaluation, formal correction for multiple comparisons was not applied. Findings relating to individual items should therefore be interpreted with caution, with greater emphasis placed on overall patterns and summary measures.

### *Data collection*

Pre- and post-training surveys were distributed to DPPs immediately before and after training sessions, while pre- and post-pilot surveys were administered to DPPs and FTPs at the start and end of the pilot period. FTPs logged their LiP time related to prescribing from November 1, 2023, to February 29, 2024, using the designated Microsoft Form. Progress reviews were conducted by DPPs and FTPs during the pilot and documented via Microsoft Forms. Two focus group sessions each for DPPs and FTPs were held, involving 7 DPPs and 8 FTPs in 1.5-hour discussions, which were recorded and transcribed for analysis, though the qualitative analysis is not included in this report.

In addition to the quantitative analysis, patterns observed across survey responses, progress reviews, and pilot data were used to inform the development of an interpretive framework describing supervision practices. This was not derived through formal qualitative analysis.

Data from multiple sources were integrated at the interpretation stage to provide a more comprehensive understanding of supervision practices during the pilot. Quantitative survey data were used to assess changes in preparedness and capture overall trends, while contextual data from learning in practice logs, progress reviews, and focus groups were used to support interpretation of these findings and identify patterns in how supervision was implemented across settings. This approach allowed triangulation of findings across data sources, enhancing the robustness of the evaluation.

## Results

### *DPP induction training package surveys*

The induction training was associated with significant improvements in DPPs' preparedness to act as supervisors, with notable improvements across all measured dimensions (see Table I).

The overall preparedness score increased significantly post-training (mean difference = 6.68, 95% CI 4.94–8.42; $t = 7.498$, $p < 0.001$, Cohen's d = 1.06), indicating a large effect size.

**Table I: Mean preparedness scores of Designated Prescribing Practitioners (DPPs) on a 1–5 Likert scale before and after induction training (1 = disagree, 3 = uncertainty, 5 = agree), with statistical comparisons**

| Survey question | Pre-training Mean (SD) N= 55 | Post-training Mean (SD) N= 50 | *t*-test* | *p*-value |
|---|---|---|---|---|
| I understand the concept of MDT collaborative prescribing | 4.26 (0.923) | 4.69 (0.468) | 3.481 | 0.001 |
| I know what is expected of the FTP pharmacist during their learning practice time | 3.25 (1.142) | 4.35 (0.565) | 7.080 | <0.001 |
| I know what is expected of me as a DPP | 2.98 (1.152) | 4.38 (0.640) | 8.079 | <0.001 |
| Finding the time within my role to supervise 90 hours of practice will be manageable | 2.83 (1.221) | 3.44 (1.070) | 3.869 | <0.001 |
| I am confident in my ability to supervise a FTP pharmacist as part of their foundation year as a DPP | 3.60 (1.062) | 4.13 (0.761) | 2.970 | 0.005 |
| I am able to identify my learning needs with regards to being a DPP | 3.58 (1.167) | 4.23 (0.627) | 3.723 | <0.001 |
| I will be able to meet my learning needs with regards to being a DPP | 3.66 (0.919) | 4.17 (0.663) | 3.817 | <0.001 |
| I know how to select the most appropriate workplace-based assessment for a given situation | 3.87 (0.680) | 4.54 (0.544) | 5.318 | <0.001 |
| I am able to conduct effective workplace assessments to assess prescribing skills | 3.94 (0.818) | 4.42 (0.577) | 3.817 | <0.001 |
| I can provide effective feedback in relation to prescribing skills | 4.11 (0.776) | 4.44 (0.542) | 2.837 | 0.007 |
| OVERALL PREPAREDNESS SCORE | 36.0943 (7.01993) | 42.7708 (4.43986) | 7.498 | <0.001 |

*The *t*-test analysis excluded five participants due to missing post-training survey data.

Overall, 58% of DPPs felt that the 3-hour time commitment for the training was manageable alongside their other work commitments. Additionally, 88% agreed that the training format facilitated their learning, and 84% found it inclusive and accessible. Survey responses from DPPs indicated that the practical aspects of the training, such as discussing workplace-based assessments and reviewing the workbook in detail, to be the most useful for their supervision roles. Open-text survey responses also suggested including more example scenarios of DPP supervision and opportunities to learn about other DPPs' plans and approaches in future training.

Survey responses from DPPs indicated that the induction training's emphasis on practical aspects of the pilot —such as understanding the new approach to FTP such as understanding the new approach prescribing training end-point (i.e., collaborative), and clarifying workbook learning objectives—most effectively prepared them for the learning in practice (LiP) time. Open-text survey responses suggested enhancing the training by incorporating greater opportunities for networking with other DPPs to explore diverse approaches and foster 'cross-fertilisation of good practice' in FTP prescribing training, as well as providing further guidance on the collaborative prescribing endpoint and expected FTP performance levels.

### *Pilot phase data*

The findings from the pilot phase are presented in narrative form below. These findings draw on data collected during the pilot, including logged Learning in Practice (LiP) hours, progress reviews, and pre- and post-pilot survey responses from both FTPs and DPPs. Although focus groups were conducted, those qualitative findings are not reported in this paper.

#### *Logged learning in practice time and progress reviews*

Between November 1, 2023, and February 29, 2024, FTPs documented a total of 860 hours of prescribing-related LiP time. This equates to an average of approximately 21 hours per FTP, substantially lower than the intended 90 hours of prescribing-related learning in practice time. These hours were distributed across various sectors, with 45% occurring in General Practice and the remainder in NHS managed settings split across Acute Secondary Care Trusts (41%), Mental Health Trusts (10%), and Integrated Care/community

based services (4%), reflecting the diverse settings in which training took place.

A total of 52 progress reviews were conducted using bespoke Microsoft Forms. These reviews were divided into 23 initial reviews, 6 interim reviews, and 23 final reviews. The relatively low number of interim reviews suggests that this stage of the supervision process was less consistently implemented during the pilot.

*Pre and post pilot surveys*

Pre and post pilot survey response rates differed between DPPs and FTPs. For DPPs, the pre-pilot survey yielded a response rate of 95.45%, while the post-pilot survey achieved a response rate of 88.64%. In contrast, FTPs recorded a pre-pilot response rate of 82.26% and a post-pilot response rate of 54.84%. To ensure the validity of paired samples t-tests, only respondents who completed both pre- and post-surveys were included in the analysis. For DPPs, paired analysis of the induction training survey included n = 50 participants. For pilot survey data, paired analysis included n = 32 DPPs and n = 34 FTPs.

***DPP pilot survey results***

Table II presents the mean scores from Designated Prescribing Practitioners (DPPs) in response to Likert scale questions assessing their opinions on the workbook. Overall, responses from DPPs were positive, with scores increasing post-pilot; however, this increase was not statistically significant ($p > 0.05$).

**Table II: Mean responses from DPPs scoring 1 – 5 on a Likert scale on their opinions of the workbook both before and after the pilot. A score above 4 indicates agree, 3 is uncertainty and below 3 is disagree.**

| Range 1 - 5 | Pre-pilot mean (SD) N= 42 | Post-pilot mean (SD) N= 39 | *t*-test* | *p*-value |
|---|---|---|---|---|
| The objectives in the workbook will be attainable for my FTP within 90 hours of LiP time | 3.40 (0.912) | 3.82 (1.103) | 1.759 | 0.090 |
| The suggested assessments are sufficient for demonstrating competence to the objectives in the workbook | 3.62 (0.825) | 3.83 (0.985) | 1.548 | 0.133 |
| I am confident that other practice supervisors will be able to assess prescribing skills against the objectives in the workbook | 3.60 (0.857) | 3.50 (1.136) | 0.146 | 0.885 |
| If the FTP meets all the objectives in the workbook, I would be satisfied they would be a competent prescriber, working to an MDT-collaborative 'scope of practice' (nominated prescribing area) | 3.14 (1.002) | 3.28 (1.224) | 1.272 | 0.215 |
| I do not have any concerns about other colleagues supervising learning in practice time | 3.60 (1.083) | 3.68 (1.249) | 0.169 | 0.866 |
| I met with my FTP to make a plan for their learning in practice time ** | | 4.21 (0.978) | | |
| The workbook helped me plan the FTP(s)'s learning in practice time** | | 3.69 (1.051) | | |

* Paired analyses were based on the 32 DPPs who completed both pre- and post-pilot surveys.

** Questions were not asked in the pre-pilot survey so cannot perform *t*-test for pre and post pilot scores

According to the survey responses, 45% of DPPs were satisfied with their supervision approach and expressed willingness to continue in the same capacity. However, 35% of DPPs reported that acting as a DPP significantly impacted their workload. Table III presents illustrative quotes from DPP open-text survey responses on aspects of their supervision approach that worked well and areas they would modify.

**Table III: DPP quotes from the post pilot surveys in relation to effective aspects of their supervision approach and desired changes**

| DPP Quotes in response to: What worked well regarding your approach to being a DPP? | DPP Quotes in response to: What would you change about your approach to being a DPP? |
|---|---|
| “I gained a good understanding of competence quite quickly. Developed a level of trust - I felt confident in my FTP's decision making due to plenty of 1:1 supervision.” | " I would want to have more opportunities to directly supervise my FTP. I would want the FTP to work alongside me in my ward area.” |
| "Communication” | "Arranged for FTP to shadow more prescribers” |
| “Direct supervision is best to get a picture of the FTP's competence but this is not practical for the whole 90 hours.” | “To have more direct supervision of hours and to have more active discussions on evidences in order to better assess competency” |
| “I didn't have any issues with the delegated approach - it would involve linking in with other colleagues working with the FTPs.” | "I would like to have more direct contact with the FTP in order to assess their competence, however this is not possible with my Trust's current supervision structure.” |
| “Regular catch ups to review evidences.” | "Delegation where possible. Having a more structured approach” |
| “Regular contact and ability to test rationale” | “I would like to learn more about other approaches of being a DPP and perhaps national guidance on expectations.” |

Table IV presents illustrative quotes from DPP open-text survey responses about aspects of their FTPs’ learning in practice time that worked well and what they would change. Illustrative open-text survey responses pointed to several recurring issues, including opportunities to work with prescribers from a range of professions, the use of workplace-based assessments, protected learning time, and access to activities that supported development of prescribing skills.

**Table IV: DPP quotes from the post pilot surveys in relation to aspects of their FTPs learning in practice time that worked well and what they would change**

| DPP quotes in response to: Which aspects of the learning in practice time arrangements worked well? | DPP quotes in response to: What (if anything) would you change about the learning in practice time arrangement for your FTP(s)? |
|---|---|
| “System of logging hours via a form motivated FTPs to do this (rather than keeping own word document log for example) The large overlap between activities needed to demonstrate the interim learning outcomes for this year and then the prescribing competencies for the pilot helped not to overwhelm TPs.....Also embedded the idea that prescribing is an extension of pharmacist work, not separate.” | " Timing in the year...The second half of the year would likely be the best time to undertake assessments and observations of prescribing practice.” |
| " The FTP was able to spend time with a range of supervisors in order to gain experience in a wider range of clinical scenarios, e.g. ward rounds, out-patient clinics, different ward-based specialities. The FTP could be self-directed for some of the objectives.” | " My personal opinion is that FTPs need a dedicated space/access to a prescribing environment just to move the focus away from traditional clinical pharmacy activities like medicines reconciliation.” |
| " The workbook, the FTPs commitment and the practice support” | " More protected time allocated for them” |
| " Able to work 1:1 and ample prescribing opportunities. Also, exposure to the risks associated with prescribing e.g. correcting errors made by GPs after feedback from community pharmacy.” | " If done over a longer time period I would have liked as the DPP to plan and spend more direct time with my FTP assessing their competence.” |

***FTP pilot survey results***

Among FTPs, 51 responded to the pre-pilot survey and 34 completed the post-pilot survey. Post-pilot responses indicated mixed perceptions of the workbook and learning in practice (LiP) experience. Specifically, 38.2% agreed that the workbook supported planning and structuring of LiP time, and 53% felt the activities aligned with their training year. However, 70.6% reported difficulty identifying prescribing-related LiP opportunities, and many struggled to allocate sufficient time to complete workbook activities. These findings suggest that, although the workbook provided a useful structure for some trainees, many required additional support to access and engage with prescribing-related learning opportunities.

Survey responses from FTPs indicated several aspects of their LiP time arrangements that functioned effectively. These included having the workbook and its objectives, planning activities within it, securing dedicated time to complete those activities, and collaborating closely with prescribers—such as their DPP, other pharmacist prescribers, or members of the multidisciplinary team (MDT). Dedicated time allowed trainees to focus on the prescribing objectives without the competing demands of their usual responsibilities.

Survey responses from FTPs suggested several potential enhancements to their LiP time arrangements. These included improving practice supervisor awareness of requirements and providing additional examples or structured activities to support achievement of workbook objectives. Participants also expressed a desire for increased active involvement and adjustments to the timing of the pilot.

Furthermore, FTPs highlighted factors that could have better prepared them for LiP time. These included more specific examples of expected tasks, additional planned activities, closer collaboration with their DPP, and ongoing formal training, with one participant specifically recommending simulation-based learning.

## Discussion

The Prescribing Integration Project sought to address critical challenges in prescribing supervision arising from new regulatory standards requiring Foundation Trainee Pharmacists (FTPs) to qualify as independent prescribers at registration (General Pharmaceutical Council, 2021). A key feature of the programme was its use of a co-designed, hypothetical collaborative prescribing endpoint to guide the design of learning activities, supervision and assessment for FTPs.

### *Collaborative prescribing*

In this project, collaborative prescribing was used as a pragmatic educational reference point rather than as a proposed regulatory category or formal framework. It helped shift the design of prescribing-related learning away from defining practice solely by therapeutic scope, towards considering the level of supervision, collaboration and decision-making autonomy that may be realistic during early career prescribing.

This framing aligns with wider literature describing pharmacist autonomy as a context-dependent construct, shaped by organisational structures, governance frameworks, and interprofessional collaboration, particularly within decentralised models of care where decision-making is closely linked to system-level accountability and risk management (Taiwo et al., 2021). More recent work further conceptualises autonomy as "*independence within interdependence*", emphasising that prescribing decisions are inherently relational and embedded within wider organisational contexts (Forsyth et al., 2026). This is particularly relevant at foundation level, where prescribing is developing within supervised environments and supported participation in decision-making is expected.

This approach also reflects the complex nature of prescribing itself. Prescribing involves therapeutic reasoning, contextual judgement, and the integration of patient-specific factors, which develop through experience and guided reflection rather than solely through knowledge acquisition or adherence to defined therapeutic domains (Hartjes et al., 2024). Evidence suggests that early-career prescribers may experience variability in confidence and competence, and face challenges when translating theoretical knowledge into clinical decision-making, reinforcing the need for structured support during this stage of development (Woit et al., 2020; McDermott et al., 2024).

It is important to note that this study does not evaluate collaborative prescribing as a model of clinical practice or its impact on patient outcomes. Rather, collaborative prescribing is used as a training construct to define the intended level of prescribing capability for foundation learners, which in turn informed the design of supervision, learning activities, and assessment. However, evidence from multidisciplinary settings suggests that pharmacist involvement in collaborative prescribing processes can improve medication-related communication and appropriateness, indicating potential value in such approaches beyond training contexts (Bullock et al., 2019).

The evaluation therefore focuses on the feasibility of delivering training towards this defined prescribing endpoint, rather than measuring the effectiveness of collaborative prescribing in practice. Future research should explore how different levels of prescribing autonomy, including collaborative models, relate to prescribing quality, safety, and progression over time.

### *DPP training*

The induction training was associated with improvements in DPPs' preparedness, particularly in clarifying their role, building supervisory confidence, and supporting effective assessment and feedback. A key enabler was the use of collaborative prescribing as a pragmatic educational reference point. This helped contextualise training expectations and reduced reliance on defining prescribing development solely by

therapeutic area, allowing DPPs to focus on developing transferable prescribing skills.

This finding aligns with wider literature describing the DPP role as largely relational and practice-based, often centred on coaching, feedback, and support rather than formalised teaching (Jarmain et al., 2023). In this context, improved preparedness may reflect not only increased knowledge, but greater clarity in how the supervisory role should be enacted. The emphasis on practical elements of training is also consistent with literature highlighting the importance of supervision and workplace-based learning in supporting pharmacists' development in patient-facing roles, including through feedback, guided participation, and supported role progression (Styles et al., 2022).

However, implementation of the DPP role is also influenced by wider organisational factors. Barriers such as time constraints, competing workload pressures, and availability of support have been identified in previous studies and are likely to influence how supervision is delivered in practice (Jebara et al., 2022). These factors should be considered alongside training interventions when planning for wider implementation.

### *Dimensions of supervision*

The supervision dimensions were developed as an interpretive organising framework to describe patterns observed across survey responses, progress reviews, and pilot data. This framework was not derived through formal qualitative analysis but reflects a pragmatic synthesis of observed supervision practices during the pilot. Rather than treating supervision arrangements as distinct 'models', this approach provides a way of describing key features of supervision that varied across settings. Collectively, these dimensions reflect variation in the intensity of supervision, the infrastructure supporting supervision, and the continuity of supervision across contexts.

**FTP-supervisor ratio**: Refers to the number of FTPs supervised concurrently by a single DPP. This ranged from 1:1 to 5:1 during the pilot. Higher ratios appeared to be associated with much lower engagement overall in our pilot by both DPPs and FTPs. This finding is consistent with wider evidence highlighting workforce capacity and time constraints as key challenges in the delivery of prescribing supervision (Jarmain et al., 2023). The feasibility of higher ratios may increase as organisational supervisory processes become established in the coming years.

**Balance between direct and indirect supervision**: The proportion of time FTPs spent under direct observation versus indirect oversight impacted DPP confidence and satisfaction. Greater direct supervision was associated with higher supervisor satisfaction and perceived competence in FTP prescribing practice. Variation in this balance may reflect differing interpretations of the purpose of supervision, with educational supervision often focused on formative and supportive functions, and clinical supervision more closely linked to direct oversight of practice (Jarmain et al., 2023). This preference for direct supervision may also reflect the early stage of training and the relative novelty of the collaborative prescribing endpoint, where supervisors may have felt greater reassurance through direct observation of prescribing-related activities.

**Delegated supervision**: The extent to which supervisory responsibilities were delegated to other healthcare professionals otherwise known as practice supervisors (PS). Delegation appeared to reduce DPP confidence in FTP prescribing abilities and increase the complexity of progress reviews, although it also enabled FTPs to gain experience from a wider range of supervisors and clinical settings. Effective delegated supervision required clear communication and adequate training for delegated practice supervisors, particularly where supervisory responsibilities are distributed across professional groups.

**Multi-sector Learning in Practice (LiP) Time**: Distributing LiP time across different healthcare sectors (e.g., hospital and general practice) was generally feasible and perceived as beneficial, enriching trainee experience. However, complexities around tracking FTP prescribing competency progress and how this is effectively communicated highlighted organisational considerations. These findings reflect wider variation in supervision arrangements across settings, where access to structured support and supervisory input may differ (McDermott et al., 2024).

**Longitudinal integrated versus short dedicated format during Learning in Practice (LiP) time**: A longitudinal approach to prescribing training spread throughout the year may be less risky in terms of staff changes and/or absence than a short placement, and may offer a more equitable experience for trainees. Protected learning time appeared to be important for effective trainee engagement regardless of the approach. The low number of interim progress reviews further highlights challenges in embedding structured supervision processes within routine practice, particularly in the context of competing service pressures. Interim progress reviews may be more feasible within longitudinal training models delivered over extended periods, whereas shorter or less structured placements may limit opportunities to incorporate additional review points.

A key consideration identified during the pilot was the need for genuine protected learning time, regardless of whether LiP time was delivered longitudinally or as a short placement. FTPs undertaking LiP activities alongside their usual foundation duties often struggled to prioritise prescribing-related learning unless clear boundaries were set. In this context, protected time does not necessarily require additional hours, but rather explicit integration of the 90-hour LiP requirement into existing roles and rotas. This aligns with evidence suggesting that effective supervision requires structured opportunities for reflection, feedback, and supported learning, particularly during transition to independent practice (McDermott et al., 2024; Styles et al., 2023). Without this, supervision and assessment risk becoming ad hoc or deprioritised.

**Combined Designated Supervisor (DS) and Designated Prescribing Practitioner (DPP) role**: DPP and DS roles were found to be distinctly different. Combining them did not appear to reduce workload and in some cases may have complicated tracking of prescribing competency, particularly where opportunities for direct observation were limited. This highlights the importance of role clarity and appropriate structuring of supervisory responsibilities, consistent with previous work emphasising the need for clear frameworks and support for supervisors undertaking these roles (Jarmain et al., 2023).

Taken together, these findings highlight that implementation challenges were not limited to supervision approach alone, but included practical considerations such as allocation and prioritisation of LiP hours, completion of progress reviews, and maintaining continuity of supervision across settings. These factors suggest that successful implementation of the model depends not only on training and supervisory capability, but on the establishment of clear organisational processes to support consistent delivery and oversight.

### *Limitations*

The pilot was confined to South East and South West London, which may limit its transferability to other regions, and the minimal inclusion of community pharmacies raises questions about sector-specific feasibility. In addition, participants (DPPs and FTPs) may have been unusually motivated, so real-world uptake could differ. The timing over winter meant that the pilot was competing with extra service pressures, that may have skewed engagement—though testing under demanding conditions was also viewed as a strength. Finally, late participant recruitment in the training cycle (due to the project timeline) gave sites little opportunity to adjust plans in time for the pilot which may have impacted overall engagement.

The relatively low response rate to the post-pilot survey among FTPs raises the possibility of response bias. It is possible that those who chose to respond were more engaged with the pilot or had particularly positive or negative experiences, which may limit the representativeness of the findings. As such, FTP survey results should be interpreted with caution. In addition, the survey instruments used in this evaluation were purpose-designed and not formally validated, which may limit the reliability and generalisability of the findings.

## Conclusion

The South East London Prescribing Integration Project provides evidence of the feasibility of a co-designed model for prescribing supervision for Foundation Trainee Pharmacists, within the context of a time-limited pilot and with variable implementation across settings. This work responds to significant challenges arising from the integration of independent prescribing training into the foundation training year.

Structured DPP induction training, informed by collaborative prescribing as a pragmatic educational reference point, was associated with improvements in supervisors' perceived preparedness, highlighting the potential value of targeted supervisor development. However, the extent to which this translated into consistent supervision practice varied, reflecting differences in local infrastructure, service pressures, and supervisory capacity.

The evaluation led to the development of six supervision dimensions as a useful framework for understanding how prescribing training was operationalised in practice. These findings suggest that effective implementation is contingent on factors such as protected learning time, opportunities for direct DPP supervision, meaningful integration of prescribing training within routine practice, and clarity of expectations for both trainees and supervisors, rather than the adoption of a single supervision model per se.

Some trainees reported difficulty identifying and accessing prescribing-relevant learning opportunities, and project engagement varied across sectors, reflecting differences in capacity, infrastructure and competing service pressures. These findings indicate that additional structural support, clearer guidance, and stronger system-level alignment may be required to enable more consistent delivery at scale.

Overall, this study offers practical insights to inform the development of prescribing supervision models, while underscoring the need for further evaluation across a broader range of settings. Future work should explore the utility of autonomy as an educational construct in prescribing, particularly whether it helps trainees, supervisors and organisations to describe how competent prescribing decisions are reached, supported and governed in practice.

## Conflict of interest

The authors declare no conflict of interest.

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## Ethics approval and informed consent

This project was classified as a service evaluation using the UK Health Research Authority's decision tool (https://www.hra-decisiontools.org.uk/research/). Therefore, it did not require formal ethical review. All participants were informed about the purpose of the evaluation and consented to participate.

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