



Implementation of non-medical prescribing by therapeutic radiographers: Views of prescribers and service managers in devolved UK health systems

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ABSTRACT

Introduction: Workforce shortages and rising demand have increased interest in advanced practice (AP) and task redistribution in healthcare. In radiotherapy, non-medical prescribing by therapeutic radiographers (NMP-TRs) may improve medicines management and symptom control. However, adoption varies due to governance, leadership, culture and regulation. Differences in legislation, prescribing models and implementation timelines across Scotland, Wales and Northern Ireland (N.I.) create variable conditions for role enactment and sustainability.

This study explored the experiences of NMP-TRs and radiotherapy managers regarding the implementation and impact of the role in Scotland, Wales and N.I.

Methods: Semi-structured interviews were conducted with seven NMP-TRs and six radiotherapy service managers across Scotland, Wales and N.I. Data were analysed using reflexive thematic analysis, with interpretation using the Consolidated Framework for Implementation Research and Diffusion of Innovations theory as sensitising lenses.

Results: Four overarching themes were identified: implementation and governance; preparation for the prescribing role; advantages and impact of NMP-TR; and disadvantages and constraints. NMP-TR was associated with medicines optimisation, continuity of care, delays in symptom management and service responsiveness. Prescribing authority supported professional autonomy, legitimacy and workforce retention. However, implementation was fragile and uneven, constrained by limited training capacity, banding and funding restrictions, legislative variability and reliance on prescriber cohorts. Professional identity work and emotional labour were prominent during transition into prescribing roles, particularly in early adopter sites.

Conclusion: NMP-TR represents a workforce innovation capable of enhancing patient care and service efficiency. In devolved health systems, sustainable implementation depends on coordinated system level alignment across legislation, governance, leadership and organisational culture.

Implications for practice: Successful integration of NMP-TR roles requires support beyond individual qualification, including governance, protected training capacity and clear pathways to strengthen sustainability and maximise impact.

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Introduction

Increasing workforce shortages and escalating service demands have heightened interest in advanced practice (AP) models and the redistribution of tasks within healthcare systems.¹⁻³ In radiotherapy services, effective management of treatment-related side-

effects and symptom control frequently relies upon prompt access to medications and sustained continuity of clinical care. Non-medical prescribing (NMP) by therapeutic radiographers (TRs) offers a mechanism to strengthen medicines management, reduce delays and optimise skill-mix within multidisciplinary teams.⁴⁻⁶

Although NMP is established across several professional groups, including nursing, pharmacy and therapeutic radiography,⁷⁻⁹ its enactment is shaped by national regulatory and policy contexts. Prior research highlights the importance of

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mentoring, strategic planning and supportive leadership in embedding prescribing roles within routine practice.^{10–12}

In England, independent prescribing (IP) by TRs has been supported by earlier legislative change, clearer governance infrastructures and greater professional scale, whereas the devolved administrations of Scotland, Wales and Northern Ireland (N.I.) have experienced differing timelines, prescribing models and levels of implementation support.^{13–16}

In particular, continued reliance on supplementary prescribing (SP) frameworks, delayed authorisation of IP and variation in medicines governance structures in some devolved systems may constrain clinical autonomy, service responsiveness and sustainability. These contextual differences have implications for how prescribing roles are implemented, experienced and embedded in practice, yet remain under-explored in the therapeutic radiography literature.

The qualitative evidence base for non-medical prescribing therapeutic radiographers (NMP-TRs) has expanded, including a substantial NIHR-funded evaluation providing detailed insight into implementation in England.¹⁷ However, less is known about how NMP-TR roles are implemented and sustained within the devolved administrations of Scotland, Wales and N.I. These systems differ in scale, governance structures, workforce configuration and legislative trajectories, creating distinct contextual conditions for workforce innovation. Examining the experiences of both NMP-TRs and radiotherapy service managers within these settings can deepen understanding of implementation mechanisms and inform context-sensitive policy and practice.

Aim and objectives

Aim

To explore views and experiences of NMP-TRs and radiotherapy service managers regarding the implementation and impact across Scotland, Wales and N.I.

Objectives

- To identify perceived benefits and limitations of NMP-TR prescribing for patient care and service delivery
- To examine organisational and individual factors that facilitate or impede implementation.
- To explore governance arrangements supporting safety, accountability and sustainability.

Methods

Design

This qualitative interview study represents Phase 2 of a multi-phase mixed-methods study examining NMP-TRs in Scotland, Wales and N.I. While earlier phase explored national prescribing patterns,⁶ this paper focuses specifically on in-depth qualitative exploration of implementation within devolved health systems.

Semi-structured interviews were adopted to generate explanatory insight into implementation processes, professional experiences and organisational dynamics. They were used to elicit rich, contextualised accounts while allowing flexibility to explore emergent issues.^{18–23}

Setting and rationale for devolved focus

England was purposively excluded to enable in-depth exploration of smaller devolved contexts and to complement existing English qualitative evidence.¹⁷ Scotland, Wales and N.I. operate under distinct legislative, regulatory and organisational arrangements relevant to prescribing scope, governance and workforce deployment.

Ethics

Ethical approval was obtained from the higher education institution. All participants received written study information and provided informed consent prior to participation, which was reconfirmed verbally at the start of each interview. Participation was voluntary, with the right to withdraw up to the point of data anonymisation. Interviews were audio-recorded, anonymised and securely stored on encrypted university servers in accordance with General Data Protection Regulation (GDPR) and institutional data protection policies. Transcription was undertaken using secure file transfer protocols and audio recordings were deleted following verification. Anonymity was maintained throughout analysis and reporting, with identifying details removed or generalised to protect participants working in small or specialist settings. Measures were also in place to safeguard participant welfare, including the option to pause or withdraw from interviews and signposting to appropriate support if required.

Sampling and recruitment

Purposive sampling was employed. NMP-TRs were identified from a previous national survey of NMP-TRs (phase 1 of study) who consented to follow-up contact,⁶ while managers were recruited via Society of Radiographers manager networks. Sampling prioritised depth and information richness rather than statistical generalisability.^{23–26} Recruitment ceased once data sufficiency was achieved.²⁶ Ten NMP-TRs and eight managers initially expressed interest; seven prescribers and six managers were available and consented to participate.

Data collection

The semi-structured interview schedule was informed by prior NMP literature and from the NIHR evaluation.¹⁷ The guide was piloted with one NMP-TR, resulting in minor refinements to question wording and flow. No formal patient or public involvement was undertaken in the development of the interview guide; however, the wider research study was informed by patient-centred outcomes identified in earlier phases.

Interviews were conducted via Microsoft Teams between May 2022 and May 2023, lasting between 19 and 45 min (mean 35). Videoconferencing facilitated participation across geographically dispersed sites while maintaining conversational depth.^{27–30} Interviews were professionally transcribed and accuracy-checked.

Rigour and trustworthiness

Rigour was supported through reflexive practice, transparent documentation of analytic decisions and multiple strategies to enhance credibility. Interview transcripts were checked for accuracy against original audio recordings. In-interview validation was undertaken through periodic summarising and clarification, allowing participants to confirm or refine meanings in real-time.²⁰

Transcription respondent validation was offered, with participants invited to review transcripts for factual accuracy rather than to verify analytic themes, consistent with reflexive thematic analysis principles that locate interpretive authority with the researcher.^{25,26}

Data analysis

Data were analysed using Reflexive Thematic Analysis (RTA) following Braun and Clarke’s six-phase process.^{25,26} Analysis was inductive, generating themes through close engagement with the data rather than applying a pre-existing coding framework. NVivo v14 supported data management.

Following inductive theme development, interpretation was strengthened using two complementary implementation science lenses: the Consolidated Framework for Implementation Research (CFIR)³⁰ and Diffusion of Innovations (DoI) theory.³¹ CFIR sensitised interpretation to multi-level determinants of implementation, while DoI supported explanation of how prescribing was perceived, adopted and normalised.

Results

Participants

Seven NMP-TRs (four from N.I., one from Wales and two from Scotland) and six radiotherapy service managers (two from each devolved nation) participated. Manager demographic details were withheld to preserve anonymity. Participant characteristics for NMP-TRs are presented in Table 1.

The NMP-TR participant demographic consisted of six females and one male, predominantly aged between 50 and 59 years. The group comprised both supplementary and independent prescribers, with a distribution of four supplementary prescribers and three dual independent and supplementary prescribers. The range of prescribing experience varied among participants, with the longest tenure being 14 years and the shortest only one year. However, the majority possessed over nine years of experience. In addition, six radiotherapy service managers were interviewed. NMP-TR roles were primarily embedded within radiotherapy review clinics, toxicity management pathways and supportive care services, with scope varying according to local governance arrangements and prescribing model. In some centres, prescribing was central to AP roles, while in others it functioned as a targeted solution to medical workforce gaps. Four themes were developed across prescriber and manager interviews.

An overview of major and descriptive themes derived from prescriber and manager interviews is presented in Tables 2 and 3, respectively.

Table 1
NMP-TR participants (n = 7).

ID	Gender	Age (range in years)	IP or SP	Years of experience prescribing	Region
NMP01	Female	50–59	SP	11	N.I.
NMP02	Male	40–49	SP	1	N.I.
NMP03	Female	50–59	SP	12	N.I.
NMP04	Female	50–59	IP	13	Wales
NMP05	Female	30–39	SP	9	N.I.
NMP06	Female	50–59	IP	14	Scotland
NMP07	Female	40–49	IP	12	Scotland

IP = Independent Prescriber; SP = Supplementary Prescriber.

Table 2
NMP-TR major and descriptive themes.

Major theme	Descriptive theme
Implementation and governance	1a. Facilitators & barriers 1b. Governance 1c. Implementation challenges
Preparation for the prescribing role	2a. Readiness to prescribe – requisites 2b. Transitioning to prescribing
Advantages and impact of NMP-TR	3a. Enhancing quality of medicines management 3b. Improving medicines access & service efficiency 3c. Optimising workforce resources 3d. Professional & personal benefits 3e. Patient experience
Disadvantages of NMP	4a. Legislative restrictions & models of NMP

Table 3
Radiotherapy managers major and descriptive themes.

Major theme	Descriptive theme
Implementation & governance	1a. Facilitators & barriers 1b. Governance 1c. Implementation challenges
Preparation for prescribing role	2a. Readiness to prescribe - requisites
Advantages & impact of NMP-TR	3a. Enhancing quality of medicines management 3b. Improving medicines access & service efficiency 3c. Optimising workforce resources 3d. Professional & personal benefits
Disadvantages of NMP	4a. Legislative restrictions & NMP models

Theme 1: implementation and governance

Role clarity emerged as a key facilitator of NMP-TR implementation. Where services invested in deliberate communication about prescribing scope and responsibilities, prescribers reported greater multidisciplinary understanding and acceptance of the role. One prescriber described an early, proactive approach to role clarification:

“We had a very engaging process whereby we informed everyone of what our roles were going to be and how we were going to fulfil those roles” (NMP01).

In contrast, limited role clarity contributed to persistent perceptions of therapeutic radiographers as primarily technical practitioners, requiring prescribers to actively legitimise their clinical decision-making role:

“Other professional groups initially perceived us merely as operators ... it was only upon explaining our actual responsibilities that they recognised our extensive knowledge” (NMP05).

Governance arrangements were viewed as central to both patient safety and professional legitimacy. Prescribers emphasised the importance of working within agreed scopes of practice and protocols:

“As long as we work within our scope of practice ... agreed frameworks and procedures ... we are providing a safe service” (NMP02).

Managers similarly described governance as embedded within local medicines policies and site-specific protocols. However,

implementation was constrained by structural factors, including limited access to funded prescribing training and banding implications that discouraged expansion. One manager explained:

"I can't create any more band seven roles without funding ... encouraging too many staff to do it gives me an issue" (RTM03).

Reliance on a small number of qualified prescribers created operational fragility, particularly during periods of absence or increased demand, highlighting the vulnerability of services dependent on individual role holders rather than embedded systems. Refer to Table 4 for additional examples of relevant quotations.

Theme 2: preparation for the prescribing role

Preparation for prescribing was shaped by a combination of service need, role requirements and individual motivation. Some participants undertook prescribing as a formal requirement of AP roles, while others were driven by interest in medicines management or service gaps arising from medical staffing shortages.

Although the prescribing programme was regarded as comprehensive, many participants described the academic demands, particularly pharmacology, as challenging and anxiety-provoking:

"Pharmacology ... when I started doing the module ... it kind of scared me. Oh God, what have I signed up for here?" (NMP05).

Transitioning from qualification to autonomous practice represented a significant professional milestone. Participants described the first act of prescribing as psychologically demanding despite formal competence:

"Whenever you sign that first prescription, it's a big step" (NMP02).

Mentorship and local clinical support were viewed as critical for building confidence and translating theoretical knowledge into safe, context-specific practice:

"Having someone to turn to, especially in the early days, is invaluable" (NMP03).

Several prescribers described professional isolation and early resistance to role development, particularly in settings with few or no existing NMP-TRs. These accounts highlight that readiness to prescribe extended beyond education and supervision, involving a

Table 4
Theme 1: Implementation and governance.

Quote ID	Participant ID	Quotation
Q1	RTM01	"Each of the clinical site specialists has their own protocol ... everything they do around non-medical prescribing would be written into that protocol. We also have a medicines policy."
Q2	RTM05	"Anytime we've tried to get radiographers onto courses, it's hard to get places ... because there's a lot of nurses."
Q3	NMP06	"... And it has actually been the bane of my life earlier this week when there was only me able to cover. Because I was getting emails from dieticians, from pharmacists, from chemo nurses, 'can you sort this out please?'"
Q4	RTM04	"... our immediate solution has been to deploy non-medical prescribers to support services. However, this is not a sustainable long-term solution."

Table 5
Theme 2: Preparation for the prescribing role.

Quote ID	Participant ID	Quotation
Q1	NMP02	"It was a requirement of my treatment review specialist ... my previous post, it was a requirement of that post. It is also a requirement of my current post."
Q2	NMP05	"I got a keen interest in prescribing ... was always something I liked. So, I went to my manager and asked if there would be any possibility ... they kind of said yes, as long as a consultant agreed ..."
Q3	NMP06	"I'll be honest, we just didn't have the medical staff. We were running with locums."
Q4	NMP07	"I had applied to do it [NMP] a few years before ... I faced a bit of opposition ... "I felt ... maybe a little bit unsupported ... there wasn't really anybody in my situation who was prescribing."

socially negotiated transition into a new professional identity. Refer to Table 5 for representative quotations.

Theme 3: advantages and impact of NMP-TR prescribing

Participants consistently reported that NMP-TR improved medicines optimisation and service responsiveness. Prescribers described more thorough medicines reconciliation and interaction checking when prescribing themselves, enhancing medication safety:

"You do medicines reconciliation, you are double checking interactions ... if there's something that interacts, I'll look at the next one" (NMP03).

Managers highlighted the value of having prescribing capacity embedded within radiotherapy services, particularly for managing unplanned toxicity presentations outside scheduled medical reviews:

"Patients turn up outside their review appointments with side effects and need medication ... having someone on duty to cover that is crucial" (RTM03).

Prescribing authority was perceived to enhance professional autonomy, role legitimacy and workforce sustainability. Several prescribers linked role development opportunities to job satisfaction and retention:

"Without being able to develop my role as I have, I may well have moved into something else" (NMP06).

Participants also emphasised improvements in patient experience, particularly the ability to dedicate time to medicines education and address polypharmacy within routine consultations, reinforcing the contribution of NMP-TR to patient-centred care. See Table 6 for illustrative quotes.

Theme 4: disadvantages and constraints

Despite clear benefits, implementation was constrained by funding, workforce and legislative limitations. Banding structures and financial pressures limited services' willingness to expand prescribing pathways:

"I can't create any more band seven roles without funding" (RTM03).

Table 6
Theme 3: Advantages and impact of NMP-TR.

Quote ID	Participant	Quotation
Q1	NMP02	"We [NMP-TR] have the knowledge and skills to review the patients. We know what drugs they need. And we are the best placed people to provide those medications. So, it's role development for our profession and it benefits the patient absolutely."
Q2	RTM03	"Our medical staffing has been in crisis for a number of years, which is why we started doing reviews and prescribing ... we are the team who are looking after the patients."
Q3	RTM05	"... especially now that she [the prescriber] is working more autonomously, and then at least can look after all the patients' needs, now that she has completed it."
Q4	NMP01	"I think any advancement to our profession, which sees us pushing the boundaries and extending our role and highlighting us as key professionals on the AHP stage, is important ... It's about what we bring to patients ... and how we change and benefit the lives of the patients and the carers ... It leaves us as a profession that we can deliver within AHPs as professionals who put our patients at the forefront of service delivery."
Q5	NMP01	"... being able to take the time to explain to a patient why and how they take their medicines, makes things more simple. And patients simply being able to discuss with you their polypharmacy issues and their medicines management. We have the time to do that ... we build that into our consultation time."

In N.I., delayed implementation of independent prescribing and reliance on supplementary prescribing frameworks were perceived as reducing clinical flexibility:

"The independent prescribing thing in Northern Ireland ... it's just been so slow" (NMP02).

Supplementary prescribing was described as administratively restrictive, particularly in relation to clinical management plans and controlled drugs:

"I'm hamstrung by not being able to prescribe controlled drugs" (NMP06).

Across settings, these constraints contributed to frustration among prescribers and reinforced the perception that while NMP-TR was clinically effective, its sustainability was undermined by system-level misalignment rather than individual capability. Participants described supplementary prescribing as limiting clinical responsiveness due to its reliance on clinical management plans (CMPs). These plans were perceived as administratively burdensome and insufficiently flexible to accommodate the dynamic nature of radiotherapy-related toxicities. As one prescriber noted, prescribing practice was shaped by procedural constraints rather than clinical judgement alone:

"I think the limitations that I have as a supplementary prescriber is that obviously I am limited by the red tape that supplementary prescribing has, in that I am limited by my clinical management plan" (NMP01).

Discussion

This study provides an integrated analysis of the implementation, service impact and persistent challenges associated with

NMP-TRs across Scotland, Wales and N.I. The findings demonstrate that NMP-TR is not simply an extension of technical skills, but a complex workforce innovation that depends on alignment between legislation, governance structures, professional culture and local service context. Viewed through an implementation science lens, prescribing functions as a system-embedded intervention rather than an individual competency, requiring organisational readiness and sustained structural support.^{30,31}

Consistent with existing evidence, NMP-TR was associated with improved medicines optimisation, reduced delays in symptom management and enhanced patient experience.^{6,17,32} Prescribers addressed complex medication-related issues, including polypharmacy and treatment-related toxicities, within routine radiotherapy care, supporting continuity, responsiveness and person-centred practice. These impacts align with wider policy priorities around service integration and the efficient deployment of specialist expertise.^{33–36} From a DoI perspective, the perceived advantages of NMP-TR over traditional, medically dependent models enhanced local legitimacy and supported adoption. Within CFIR, these benefits align with key Intervention Characteristics, including effectiveness and adaptability, and Outer Setting constructs related to responsiveness to patient and service needs.^{30,31}

However, despite clear clinical and experiential value, sustained organisational change was inconsistent. This highlights a persistent gap between local service impact and system-level embedding, whereby prescribing roles function effectively in practice but remain insufficiently institutionalised. NMP-TRs reported increased autonomy and professional fulfilment, reflecting findings from broader advanced clinical practice and allied health prescribing literature.^{37–39} Prescribing authority contributed to professional legitimacy, job satisfaction and perceived career sustainability, supporting retention within the workforce.

From a DoI perspective, prescribing increased the visibility and compatibility of advanced therapeutic radiographer roles within multidisciplinary teams. However, hierarchical assumptions and limited awareness among some medical colleagues persisted, indicating incomplete boundary work and entrenched professional norms. These challenges map closely to CFIR Inner Setting constructs, particularly organisational culture and implementation climate.³⁰ Without deliberate strategies to enhance inter-professional understanding and role clarity, NMP-TR risks remaining dependent on individual champions. Interprofessional education, visible leadership and consistent governance arrangements are therefore critical to achieving sustainable, system-level integration.³¹

Preparation, transition and identity work

Transitioning from education to autonomous clinical practice brought enthusiasm but also uncertainty, echoing findings from nursing and pharmacy prescribing literature, where formal education provides a foundation but confidence develops through experiential learning, mentorship and peer support.^{32,40} This reinforces prescribing as a situated practice, shaped by local context and relational support rather than qualification alone.^{30,41}

CFIR highlights the importance of self-efficacy, professional confidence, mentorship, informal learning and peer networks in supporting implementation, with early adopters often experiencing professional isolation in the absence of organisational readiness and structured support.^{30,39}

Transition into prescribing also involved an identity-based shift, requiring TRs to renegotiate professional boundaries and challenge perceptions of their roles as primarily technical. This aligns with identity work within AP, where new professional identities are constructed through competence, visibility and

relational negotiation.^{37,42,43} Successful identity reconstruction was central to sustained confidence and routine NMP-TR practice.³⁹

Governance, leadership and strategic alignment

Robust governance, clear practice scopes, CPD access, audit, and accountability, was essential for safe prescribing, consistent with literature.¹⁷ Yet, there was a disconnect between frontline implementation and strategic oversight, with some managers unaware of long-term plans for NMP-TR development.

Similar concerns were raised in Courtenay et al. (2011)⁴⁴ and Dobel-Ober et al. (2010),⁴⁵ suggesting longstanding structural challenges. In CFIR, this reflects weak Leadership Engagement and Readiness for Implementation, innovations are supported in principle but not embedded by coordinated planning, monitoring and evaluation.

Without proactive leadership and cross-professional governance, NMP-TR remains a local, fragile innovation, vulnerable to workforce turnover and shifting priorities. System-level ownership is needed for sustainability.

Devolved systems and the small-state perspective

Implementation challenges must be understood within the context of devolved health systems in Scotland, Wales and N.I., which are characterised by limited workforce scale and closer coupling between policy and practice (Exworthy et al., 2016; Institute for Government, 2020).^{13,46} In such systems, workforce innovations such as NMP-TRs are more vulnerable to leadership variability, legislative delay and constrained service capacity.³⁰

While CFIR and DoI provide explanatory insight into adoption and enactment, a small-state perspective helps explain why partial implementation and fragile embedding persist despite local benefit. In smaller systems, limited scale offers less organisational buffering, rendering alignment across policy, governance and professional culture particularly critical for sustainability.^{47,48}

Legislative and policy context

Legislative constraints, particularly delayed implementation of independent prescribing for TRs in N.I. and the limitations of SP frameworks, were identified by participants as a substantive and persistent barrier to implementation. This reflects prior research identifying regulatory inconsistency and governance misalignment as key inhibitors to the effective implementation of NMP.^{13,32,39} Restrictions on controlled drug prescribing under SP arrangements further constrained clinical responsiveness and undermined perceived advantages of the role.^{49,50}

From a DoI perspective, such legislative constraints reduce both compatibility and trialability, limiting integration into routine practice.³¹ Although recent legislative developments have extended prescribing rights for TRs,^{51,52} ongoing policy coherence and alignment across devolved systems remain essential to ensure equitable access and consistent enactment.^{13,41}

Divergent perspectives and implications for leadership

A notable divergence was observed between NMP-TRs and service managers. While NMP-TRs foregrounded patient experience, professional autonomy and the emotional labour associated with prescribing, managers focused on funding constraints, workforce planning and system-level pressures. Similar divergences between clinical and managerial perspectives have been

reported in AP and NMP literature, reflecting differences in proximity to everyday clinical decision-making.^{37,39,48}

Within CFIR, this divergence can be understood as a gap between Inner Setting priorities and Process-level engagement, where strategic decision-making may not fully incorporate practitioner insight.³⁰ Implementation research emphasises the importance of inclusive leadership approaches that integrate frontline experience into strategic planning in order to align policy intent with clinical reality and support sustainable implementation.^{41,53}

Limitations

This study has limitations typical of qualitative research conducted within small professional groups. The purposive sample reflects the limited number of NMP-TRs practising within devolved nations, and findings should therefore be interpreted in terms of contextual transferability rather than statistical generalisation.^{23,24} Data were collected within a dynamic policy environment; subsequent legislative developments may address some structural constraints, although organisational and workforce-related barriers are likely to persist beyond regulatory change. Patient perspectives were not included and should be prioritised in future research to explore perceived access, safety and experiential outcomes associated with NMP-TR services.

Conclusion

This is the first study to specifically examine the implementation of NMP-TRs across the devolved UK health systems of Scotland, Wales and N.I. and to explore the system-level challenges shaping its sustainability. By extending the evidence base beyond England, the study demonstrates that NMP-TR delivers clear benefits for patient care and service efficiency within radiotherapy services, including improved medicines optimisation, reduced delays in symptom control and enhanced continuity of care.

However, implementation across devolved systems was uneven and often fragile. The findings show that successful enactment of NMP-TR was shaped less by individual competence than by legislative constraints, governance arrangements, leadership engagement and local service capacity. Professional identity and role legitimacy emerged as critical mechanisms influencing sustainability, with prescribers undertaking identity work that was not always visible or recognised at strategic level. In devolved and small-scale health systems, reliance on limited prescriber cohorts, variable governance maturity and delayed legislative alignment further constrained scalability and resilience.

Overall, NMP-TR enhances patient-centred radiotherapy care and service efficiency, but its success depends on more than individual qualification. Sustained impact requires coordinated system-level commitment to legislative coherence, visible leadership and implementation infrastructure that embeds prescribing within routine practice. Without this alignment, workforce innovation risks remaining clinically effective yet organisationally fragile.

Beyond the UK context, these findings are relevant for health systems considering the introduction or expansion of NMP within allied health professions. The study demonstrates that workforce innovations such as NMP-TR require coordinated planning across legislation, governance, education, leadership and professional culture to support consistent enactment and sustainability. Participants' accounts indicate that qualification alone is insufficient to ensure long-term role embedding and that ongoing organisational support and strategic oversight are central to maintaining prescribing roles in practice. Policymakers and service leaders should therefore recognise that the impact of NMP depends on sustained system-level alignment rather than individual capability in isolation.

Ethics approval and consent to participate

- Ethical approval for this study was obtained from Ulster University Filter Committee (FCNUR-21-101)
- Written informed consent was obtained for anonymised participants' information to be published in this article.

CRedit author statement

KC: Conceptualisation, Methodology, Investigation, Resources, Data Curation, Writing - Original Draft.

NC: Conceptualisation, Methodology, Resources, Writing - Review & Editing, Supervision.

SMCF: Conceptualisation, Methodology, Writing - Review & Editing, Supervision.

JE: Data Curation, Writing - Review & Editing.

CH: Conceptualisation, Methodology, Writing - Review & Editing, Supervision.

Availability of data

Data required for this study may be made available by the author(s) upon reasonable request.

Generative AI use

Not applicable.

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Conflict of interest statement

The authors declares that there are no conflicts of interest.

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