



# Innovation in the Allied Health Professions: Evaluation of supplementary prescribing by dietitians and independent prescribing by therapeutic radiographers

**NIHR Policy Research Programme Project PR-R19-0617-21001**

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December 2024

## Abbreviations

ACP	Advanced Clinical Practice/practitioner
ADP	Advanced Dietetic Practice/practitioner
Afc	Agenda for Change
AHP	Allied Health Profession/professional
AP	Advanced Practice/practitioner
APTR	Advanced Practice Therapeutic Radiographer
AUD	Australian Dollars
BDA	British Dietitian Association
CMP	Clinical Management Plan
ATRP	Advanced Therapeutic Radiography Practice/practitioner
CAMRT	Canadian Association of Medical Radiation Technologists
CMP	Clinical management plan
CP	Consultant Practice/practitioner
CPD	Continuing Professional Development
D	Dietitian
DMP	Designated Medical Practitioner
DNA	Did not attend
D-SP	Dietitian supplementary prescribing/er
DOB	Date of Birth
DTR/ D-TR	Dietitian and Therapeutic Radiographer
EQ5-D	EuroQol 5-D
EN	Enteral Nutrition
GP	General Practitioner
HCPC	Health and Care Professions Council
HEI	Higher Education Institute
HR-QoL	Health related quality of life
ICER	Incremental cost-effectiveness ratio
IP	Independent Prescribing/Independent Prescriber
MDT	Multi-disciplinary team
MMA	Medicines Management Activities
NHS	The United Kingdom's National Health Service
NICE	National Institute for Health and Care Excellence
NISPs	Nurse Independent Supplementary Prescribers
NMB	Net monetary benefit
NMC	Nursing and Midwifery Council
NIHR	National Institute of Health Research
NMP	Non-medical Prescribing
NP	Non-prescriber

NP-DTR	Non-prescribing Dietitian and Therapeutic Radiographer
ONS	Oral nutritional supplements
OOP	Out of pocket expenses
OTC	Over the counter
PAG	Project Advisory Group
PERT	Pancreatic enzyme replacement therapy
PGD	Patient Group Direction
PIS	Participant Information Sheet
PN	Parenteral Nutrition
POM	Prescription only medicine
PSD	Patient Specific Direction
PPI	Patient Public Involvement
PPV	Patient Public Voice
QALYs	Quality adjusted life years
RD	Registered Dietitians
RT/RTT	Radiation Therapist
SCoR	Society of Radiographers
SP	Supplementary Prescribing/Supplementary Prescriber
TRaDiP	Evaluation of Therapeutic Radiographer Independent Prescribing & Dietitian Supplementary Prescribing
TPN	Total Parenteral Nutrition
TR	Therapeutic Radiographer
TR-IP	Therapeutic Radiographer independent prescribing/er
UK	United Kingdom
US	United States
WTP	Willingness to pay

## Glossary of Terms

Advanced Clinical Practice (ACP)	In the UK ACP is defined as a level of practice characterised by a high degree of autonomy and complex decision-making, underpinned by master’s level education or equivalent that encompasses the four pillars of clinical practice (clinical practice, leadership and management, education, and research), whilst demonstrating core capabilities and area-specific clinical competence (Health Education England, 2017).
Advanced Practice	A term applied differently in different professional and national contexts and at different times, usually denoting higher levels of autonomy, training and experience coupled with specialist expertise in specific areas of practice.
Allied Health Professional	In the UK, a member of one of 14 degree-level professions not including medicine, dentistry, pharmacy and nursing who provide care within and across a broad range of health and social care settings (NHS England).
Clinical Management Plan	A clinical management plan is an agreed defined plan of treatment for a named patient which sets the legal boundaries of the medication and the parameters of prescribing responsibility for the supplementary prescriber. The plan must be agreed as the result of a voluntary partnership between the independent doctor or dentist prescriber and the supplementary prescriber, and with the knowledge of the patient and/or carer <sup>1</sup> .
Extended Practice	Practitioners working at a high level of expertise who have extended their practice and skills.
HEE ACP framework	Multi-professional framework for advanced clinical practice in England which sets out a new and bold vision in developing this critical workforce role in a consistent way to ensure safety, quality, and effectiveness. Developed for use across all settings including primary care, community care, acute, mental health and learning disabilities
Independent Prescribing	Prescribing by an appropriate practitioner responsible and accountable for the assessment of patients with undiagnosed or diagnosed conditions and for decisions about the associated clinical management.
Medicines Management Activities	Systems of processes and behaviours that determine how medicines are used by patients and by the NHS. For the purposes of this review, Medicines Management Activities refers to prescribing and/or the process of giving advice about medicines and the supply or administration of medicines. <sup>2</sup>
Non-medical Prescribing	Prescribing by specially trained nurses or allied health professionals working within their clinical competence as either independent or supplementary prescribers.
Order-writing privileges	Ability to write or modify orders or recommend medication changes by specially trained nurses or allied health professionals with or without requiring a clinician signature.
Over the counter medicines	Over the counter medicines are sold directly to a consumer without a prescription from a healthcare professional <sup>5</sup>
Patient Group Directions	Written instructions allowing the supply or administration of a specified medicine or treatment by named, authorised health professionals to a pre-defined group of patients for a condition described in the Patient Group Direction without the need for a prescription from a prescriber.
Prescription-only medicine	Requiring a prescription issued by a general practitioner or other suitably qualified healthcare professional. The prescription is then dispensed by a pharmacy or dispensing surgery.
Prescribing	To authorise in writing the supply and administration of a medicine or other healthcare treatment for a named patient.

Supplementary Prescribing	A voluntary partnership between an independent prescriber and a supplementary prescriber to implement an agreed patient-specific Clinical Management Plan with the patient's agreement.
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### **Key Words**

Dietitian; therapeutic radiographer; independent prescribing; supplementary prescribing; evaluation, mixed methods; case studies; health economics

## 1. Executive Summary

### 1.1 Background

Evidence suggests NMP, initially performed by nurses and pharmacists, offers improved service efficiency, access to medicines, cost savings, quality of care and better use of knowledge and skills. Recent changes to the law allow dietitians and therapeutic radiographers, working at an advanced level, to prescribe medicine for their patients. Using supplementary prescribing, dietitians, who manage diet and nutrition for many health problems, can prescribe medicines from a treatment plan agreed with a doctor. Therapeutic radiographers, who deliver radiotherapy and manage the side effects of this for people with cancer, can however use independent prescribing to assess patients and prescribe medicine without the need of a doctor. This study was commissioned in the wake of this policy change to provide an evaluation of dietitian supplementary prescribing (D-SP) and therapeutic radiographer independent prescribing (TR-IP) in England.

### 1.2 Study Aim and objectives:

The aim was to identify effective prescribing practice and innovative service models through evaluation of D-SP and TR-IP implementation in England. The objectives were to:

1. Undertake rapid review of literature.
2. Describe and classify services and identify innovative service models.
3. Examine prescribing activity and trends and factors that inhibit/facilitate uptake and implementation.
4. Explore patient/carer views and experiences.
5. Identify impact on patient choice, experience, access to medicines and outcomes.
6. Assess quality, safety and, clinical appropriateness.
7. Explore cost-consequences.
8. Evaluate quality, effectiveness and cost of prescribing educational programmes.
9. Develop a prescribing implementation toolkit.

### 1.3 Methods

A four-phase mixed method study undertaken March 2019- April 2024. **Phase 1:** literature review to determine medicines management activity, evidence of effectiveness and barriers and facilitators in practice. **Phase 2:** surveys of NHS trusts across England to assess D-SP-TR-IPs to explore prescribing activity and trends over 18 months and identify innovative service models. **Phase 3:** comparative case study with economic analysis across 8 sites (8 D-SP-TR-IP and 8 non-prescriber) in 7 geographical locations. Methods comprised: self-report audit, interviews, documentary evidence, observations, patient questionnaires, and case record review. Economic analysis examined cost consequences through comparison of care delivery at D-SP-TR-IP and non-prescribing sites and consideration of costs of benefits of prescribing training. **Phase 4:** development of an online prescribing toolkit.

## **1.4 Results**

### **1.4.1 Phase 1**

The 20 identified articles revealed a dearth of literature evaluating advanced practice or prescribing in either profession, and the extent of UK medicines management essentially unknown. A lack of clarity regarding advanced practice roles often led to ambiguity and hindered implementation.

### **1.4.2 Phase 2**

*NHS Trust Manager Survey:* 56 service managers (D=33, TR=23), with follow-up interviews (n=6 per group) 18-22 months later. Prescribing uptake was higher for TRs (15/23) than dietitians(12/30). Personal motivation, backed by managerial support were key facilitators for early adoption, whereas demonstrating clinical need facilitated later adoption. Implementation issues were similar for both professions across time including clinical need; funding competition; organisational support; course preparation; and planning for advanced practice roles. SP limitations hampered uptake and use by dietitians.

*D-SP and TR-IP questionnaires:* A total of 92 (D=38, TR=54) respondents completed survey 1 and 34 (D=16, TR=18) survey 2 around 18 months later. More TR-IPs (87%, 94%) than D-SPs (60.5%, 68.8%) were prescribing in practice in both surveys. TR-IPs prescribed 11.6, and D-SP 3.1 items per week. There were no major changes between surveys. TR-IP frequently prescribed gastrointestinal medicines, skin treatments and drugs for urinary tract disorders. D-SPs prescribed nutrition and blood products, gastrointestinal medicines and endocrine system drugs most often. Those with higher degrees tended to prescribe from a broader range of therapy areas.

### **1.4.3 Phase 3**

*Self-report audit:* Of 513 self-report audits (169 dietitians and 344 therapeutic radiographer) medicines management activities occurred in over 70% of all consultations, with D-SP used in 16% and TR-IP 35% of consultations. Predominant dietetic activities were medicines related to nutrition and blood, parenteral nutrition, and vitamins. Therapeutic radiographers were frequently involved with analgesia, ear nose and oropharynx, and gastrointestinal medicines.

*Interviews:* A total of 33 interviews were conducted with DTRs (n= 15) and team members (n=18) across case sites. Reported service benefits included improved efficiency and access to medicines, care quality, accountability and safety, with improved professional reputation and job satisfaction. A lack of organisational preparation, leadership, and high workload and challenges using the model of supplementary prescribing and CMP affected implementation. Interviews (n=27) were also undertaken with patients who had consulted with either a dietitian (n=6) or therapeutic radiographer (n=16) within sites. While awareness of prescribing was low prior to the study, acceptance was high with patients citing a range of benefits that they either experienced or could anticipate, so long as it was safely governed.

*Patient questionnaires:* 180 patients completed a questionnaire (dietitian=49 and TR=131). Most (93.9%) agreed that D-TRs should be able to prescribe. Patients were equally satisfied with the care (consultation satisfaction (80.4%) and general medical interview satisfaction (83%)) they received from D-TR prescribers and non-prescribers. A significantly higher proportion of patients who saw a prescriber reported they had received medicines advice or information during the consultation ( $p=0.0022$ ). Highest levels of satisfaction across both groups related to information on 'what the medicine was for', 'name of the medicine' and 'how it works'. Least positive responses related to information 'on how long to take the medicine for' and 'if it would affect sex life'.

*Case record review:* 32 case records (D=10 and TR=22) were assessed. Records were found to be of high quality, with a high level of agreement between assessors. One medication error (D-SP) related to a wrong dose was identified.

*Economic analysis:* Differences in health-related quality of life were not statistically significant among patients managed by prescribers and non-prescribers for either profession. Analysis suggests that D-SP and TR-IP is likely to save money with minimal or no effect on patients' well-being in the long term.

#### **1.4.4 Phase 4**

Priorities for the NMP implementation tool kit were identified and agreed with a consultative group and a subsequent plan of action. The NHS Learning Hub was identified as a suitable hosting platform with content developed in 3 key areas i) Patient Leaflet; 'who's who to prescribing'; ii) demonstrating need; online preparing to prescribe toolkit and innovative practice leaflets iii) transitioning; how to stay prescribing ready with examples from practice.

### **1.5 Key findings**

This is the first research to investigate the effectiveness and efficiency of dietitian supplementary prescribing and therapeutic radiographer independent prescribing. The project was undertaken between March 2019 and April 2024.

- There is a lack of empirical evidence related to prescribing and a need for robust evaluation of dietitian and therapeutic radiographer involvement in medicines management activity, including prescribing.
- Key areas where DSP worked were renal, intestinal/nutrition and diabetes. Key therapy areas were nutrition and blood products, oral and IV nutrition, gastro-intestinal and endocrine system.
- TR-IPs provide on- treatment review services for a range of tumour groups. Key therapy areas were gastro-intestinal; skin and drugs for urinary tract disorders.
- D-SPs and TR-IPs were more active than non prescribers in most aspects of medicines management activity, most notably over the counter medicines, amending prescribed medicines and medication reviews, and fewer recommendations to doctors etc.



- Patients and healthcare professionals were generally positive about D-SP and TR-IP. The majority of patients agreed that dietitians and therapeutic radiographers should be able to prescribe medicine, as long as it was safely governed.
- Perceived benefits included: service efficiency, greater flexibility and resilience to cope with demands.
- Implementation issues were similar for both professions across time including demonstrating clinical need; funding competition; organisational support; course preparation; and planning for advanced practice roles. SP limitations hampered uptake and use by dietitians.
- D-SP and TR-IP is likely to save money with minimal or no effect on patients' well-being in the long term.

## **1.6 Conclusions**

This is the first research to investigate effectiveness and efficiency of DSP and TR-IP and provides valuable information for key stakeholders. D-SP and TR-IP is acceptable to the majority of patients with reported high levels of satisfaction with information and access to services. The study confirms D-SP and TR-IP is developing in line with original policy intentions to improve care across a range of services, by advanced practitioners who regularly engage in medicines management. Evidence at this stage of implementation and from case sites suggest that D-SP and TR-IP is likely to save money with minimal or no effect on patients' well-being. However, the process of SP hampered uptake, use and innovation for dietitians. Evaluation of the educational programme was satisfactory. The vast majority of medicines decision were found to be safe and appropriate. A toolkit, co-produced with patients, was developed to support healthcare workers get the most out of the prescribing qualification.

## **1.7 Dissemination plans**

Multiple routes including social media, voluntary organisations, distribution of the executive summary and Lay summary and a national online dissemination event. The recently developed prescribing implementation toolkit, a free and available resource is live on <https://learninghub.nhs.uk/Catalogue/prescribingtoolkit>

## **1.8 Impact**

The prescribing role can help optimise AHP skills, improving care quality, sustainability, and cost savings. This will help inform plans for extension to other healthcare professionals.