

Research for Patient Benefit Final Report Form

Project Title	Co-producing Practice Guidelines and Research Recommendations To Support Early Diagnosis Of Colorectal Cancer In Community Pharmacy
Reference Number	NIHR203526
Contracting Organisation	Central and North West London NHS Foundation Trust
Approved Duration	12
Current Duration	14
Contracted Start Date	01/03/2023
Contracted End Date	30/04/2024
Original Award	145,170.00
Current Award	145,170.00

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Contracted Start Date:	01 March 2023	Contracted End Date:	30 April 2024
First Contracted Start Date:	01 December 2022	Current Award:	145,170.00
Original Award:	145,170.00		

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Research Team

Chief Investigator	Professor Christian Von Wagner (University College London)
Joint Lead Applicant:	Professor Andy Husband (University of Newcastle upon Tyne)
Co-Investigators:	Professor Adam Todd (University of Newcastle upon Tyne) Mrs Lindy Berkman (PPI representative) Professor William Hamilton (University of Exeter)
Selection List	Professor Andy Husband
Role in research	Joint PI expertise in community pharmacy
Selection List	Professor William Hamilton
Role in research	Co applicant expertise in CRC risk assessment in general practice
Selection List	Mrs Lindy Berkman
Role in research	Co applicant PPIE expertise personal experience of CRC
Selection List	Professor Adam Todd
Role in research	Co applicant leading on PPIE and dissemination, expertise in community pharmacy
Selection List	Professor Christian Von Wagner
Role in research	Joint PI expertise in CRC screening and methodology

Involvement of NIHR Infrastructure

Please indicate which NIHR Infrastructure organisations were involved in your research.

CRN, Other

Please describe the role of each organisation in your research

We have integrated with Clinical Research Networks (CRNs) in both London (LCRN North Thames Core Team, NIHR Clinical Research Network) and Newcastle to help engage potential research participants. This was successful and we did recruit people through the CRN in both areas.

The initial grant proposal was supported via the Research Support Service (RSS) by Newcastle University and Partners (then called Research Design Service) to engage Patient and Public Involvement and Engagement (PPIE) groups to discuss the idea of the project and help refine our approach. This was very helpful and the majority of the initial PPIE work was done through these groups. Joanne Lally in Newcastle co-ordinated these activities.

Changes to Research Team

Please outline any changes that have been made to the research team over the course of the research, including an explanation of why they were required.

None

Scientific Summary

Please provide a structured summary of your work.

Research Question: What can Community Pharmacy staff do to facilitate earlier diagnosis of colorectal cancer (CRC)?

Background: Colorectal cancer (CRC) is the second most common type of cancer death, despite early diagnosis of CRC being associated with nearly 90% 5-year survival. Community pharmacy (CP) is the third largest provider of healthcare and to people in urban and deprived areas, often more accessible compared with General Practice (GP). International research has shown that CP is used by people with potential cancer symptoms to purchase products used to manage these symptoms. CP could play an important part in identifying and/or screening-eligible individuals who have not participated in screening and assist them in making an informed choice about participating.

Aim: To co-produce practice guidelines and research recommendations for community pharmacy staff to increase awareness and support for early diagnosis of bowel cancer.

Methods: We held six co-production workshops in across London and North-East England. Each workshop included 20 participants, which were a mix of members of the public, primary care colleagues and community pharmacy staff. Workshops were structured around Nominal Group Technique (NGT), which is a formal consensus development method. Each of the workshops introduced one question around community pharmacy involvement in raising CRC awareness, assessing CRC risk and sign-posting people with CRC symptoms to other health services and screening. The workshops produced practice guidelines and research recommendations, which were consolidated across the two regions in a fourth workshop.

Timelines: Co-production workshops took place between March and November 2023 with two dissemination meetings in February 2024. PPIE advisory and steering group meetings ran alongside the workshops.

Key findings: Recommendations addressed six overarching themes including: pharmacy infrastructure (modifying the pharmacy environment, improving communication and collaboration with other health care providers, and supporting and training, increasing autonomy of community pharmacy) and services (raising awareness, targeting people at risk, supply of home-based stool test kits).

Impact and Dissemination: Throughout the project, we used social media including a series of posts on 'X' and one podcast from the research team, and the Public and Patient Advisory Group. At the end of the project, we held two dissemination meetings with experts and stakeholder groups, such as Cancer Research UK (The Social Behavioural Research Group, and The Early Detection & Prevention Diagnosis Research Committee), The British Oncology Pharmacy Association, North Central London Cancer Alliance, England's Pharmacy Integration Programme in London and stakeholders from Cancer Research UK, Community Pharmacies, Pharmacy Integration Fund and North East and North Cumbria Clinical Research Network. Given that there are over 11,000 thousand community pharmacies in England, who see 1.6 million people per day, even small changes to practice achieved as a result of this project are likely to have important immediate benefits for earlier to CRC identification outcomes. Furthermore, research recommendations will act as a catalyst to develop and test novel pathways to CRC diagnosis and thereby make a contribution towards the NHS long-term plans to increase the number of cancers diagnosed earlier. Our microsite (<https://phabric.org.uk>) includes information around dissemination of the project outcomes.

KEYWORDS 1

Keyword 1:	Pharmacy
Keyword 2:	Community
Keyword 3:	Cancer
Keyword 4:	Colorectal
Keyword 5:	Screening

Keyword 6:	Access
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Keyword 7:	Diagnosis
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Keyword 8:	
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Plain English Summary

Please provide a plain English summary of your research.

Background: Catching bowel cancer early increases the chance of successful treatment. People in general but especially in deprived areas (where more people are diagnosed with advanced bowel cancer) have better access to community pharmacy (CP) than to their General Practitioner (GP). However, pharmacy staff are not routinely involved in talking with the public about bowel cancer.

Aim: This project brought together people working in CP, primary care, bowel cancer specialists and members of the public. They discussed the pros and cons of CP staff talking to patients about bowel cancer. The groups voted on guidelines around on how CP staff could help when people are invited for bowel cancer screening or when trying to manage bowel-related problems with pharmacy medicines, which could be signs of bowel cancer.

Design and Methods: Face-to-face workshops were held in London and Newcastle. The workshops used a structured approach to agreement within the groups called Nominal Group Technique to collect a series of data leading to practice guidelines and research recommendations.

Patient and public involvement (PPIE): Throughout the project PPIE representatives co-led workshops by giving testimonies or co-facilitating question and answer sections. Our lay co-applicant was also directly involved in extracting higher level themes, which were voted on at the end of our workshops. Another member of the PPIE panel led the scripting/editing of our podcast.

Key findings: Participants generated over 100 individual ideas for community pharmacy which mainly addressed infrastructure (modifying the pharmacy environment, improving communication and collaboration with other health care providers, and supporting and training, increasing autonomy of community pharmacy) and services (raising awareness, targeting people at risk, supply of home-based stool test kits).

Dissemination and outcomes: Public facing materials include a microsite, and a podcast developed by our PPIE contributor.

Please tick the box if this section of the report has been written with members of the public who have been involved in the research.

Confirmed

Aims and Objectives

Please describe the original aims and objectives of the research.

Primary Aim

To co-produce practice guidelines and research recommendations for community pharmacy staff to increase awareness and support for early diagnosis of bowel cancer. To co-produce a set of practice guidelines and research recommendations about how community pharmacy can facilitate early CRC diagnosis.

Specific objectives:

To elicit and rank ideas if and how community pharmacy staff could i) promote awareness of screening and symptoms, ii) undertake individual CRC risk assessment and iii) make integrated referrals.

To identify variations in attitudes (as expressed during workshops) towards community pharmacy supporting early diagnosis of CRC by sex, ethnicity, professional background, and region.

To develop a plan to develop a plan of disseminating practice guidelines and research recommendations.

Changes to Aims and Objectives

If the aims and objectives changed, please explain in what way and why.

The aims and objectives did not change over the course of the research programme.

Description of Research

Please provide a structured summary of your work.

Study completion

Our study was completed in line with all original time estimates. At present we are finalising this report, a publication and a video podcast for dissemination of the work, all of which will be available on our dedicated microsite (Pharmacy Based Research in Cancer, (Phabric) (<https://phabric.org.uk/>)).

Recruitment

In total, there were 31 participants across all the workshops in Newcastle with some individuals participating in multiple sessions. There were 16 members of the public, 7 community pharmacists who worked in a pharmacy setting and 7 GPs. We also had a number of academics attend the Newcastle meetings all of whom had interests in community pharmacy and in aspects of the proposed methods.

In London, a total of 51 participants were recruited. 48 attended the co-production workshops and 4 pharmacists participated in our supplementary one-to-one interviews, which we offered to prospective participants who could not attend a workshop or preferred a one-to-one interview for other reasons. 14 were primary healthcare professionals, 16 were community pharmacists or worked in a pharmacy setting, 17 were members of the public, and 4 were expert witnesses, such as screening practitioners, health promotion specialists, cancer epidemiologists, and gastroenterologists.

Workshops

This group of participants contributed to one or more of our series of three workshops that were in Central London and Newcastle. Each workshop had a unique theme about how community pharmacy might support early diagnosis of bowel cancer. These included 1) raising awareness, 2) assessing bowel cancer risk, and 3) navigating people at higher risk of bowel cancer to access screening or diagnostic services. Each workshop presented people with an introduction and expert testimony, before facilitating a nominal group exercise, which included 1) private generation of ideas, 2) round-robin style brainstorming, 3) interpretation and synthesis of recommendations, and 4) prioritisation via private and anonymous voting. The workshop themes are outlined below in section 'workshop themes.' Workshop 4 and the two dissemination meetings are outlined in sections 'Workshop 4: Consolidation meeting' and 'Dissemination meetings.'

Workshop themes

Themes from the six workshops are outlined below in Tables 1, 2, and 3. Themes are split by region and designated with **PG**, **RR** or **M** depending on whether they were deemed as practice guidelines (PG), research recommendations (RR) or a mixture of both (M) .

Table 1. Themes generated in response to the question "What can community pharmacy staff do to raise awareness of the CRC screening programme, risk factors and symptoms?"

Workshop 1: Raising awareness of colorectal cancer (CRC) screening, risk factors and symptoms via community pharmacies (CPs)	
London Themes	Newcastle Themes
1. Collaboration between healthcare professionals M	1. Raising general awareness PG
2. Support, training, and education for pharmacists RR	2. Targeted interventions for people at risk M
3. Broader public health campaigns PG	3. Supply test kits from pharmacies directly M
4. Targeting those at risk/symptomatic M	4. Investing more in the pharmacy role – e.g.: Education RR
5. Pharmacist role and general pharmacy environment M	5. Using technology to promote screening – e.g.: Apps PG
6. Advertisement of pharmacy services and competencies M	6. Integration of pharmacy services RR
7. Providing test kits M	7. Make the pharmacy environment more suitable PG
8. Digital approach RR	
9. Pharmacist's time M	

Table 2. Themes generated in response to the question “What can community pharmacies do to identify people at above average risk of CRC?”

Workshop 2: Identifying people of above average risk of CRC in CPs	
London Themes	Newcastle Themes
1. Developing a range of approaches to raise awareness and signpost to support availability in pharmacy. PG	1. Clinical assessment or examinations PG
2. Bowel cancer specialist knowledge, staff training and use of risk assessment tools. M	2a. Capturing and analysing patient purchase data M
	2b. Providing support for symptomatic patients PG
3. Integration with other NHS systems e.g., bowel cancer screening programme, flu vaccination and general practice. PG	3a. Creating a safe space /environment for having conversations about CRC PG
	3b. Better access to patient information RR
4. Enable pharmacy autonomy e.g., to make referrals and order tests. RR	4. Incentives and support for community pharmacy staff RR
5. Improving inclusion and accessibility e.g., for underserved communities. PG	5. Raise awareness via local and national campaigns PG

Table 3. Themes generated in response to the question “Workshop 3: What can CP staff do to sign-post people of higher CRC risk to relevant services?”

Workshop 3: Sign-posting people with higher CRC risk to relevant services in CPs	
London Themes	Newcastle Themes
1. Raise awareness of bowel cancer and screening PG	1. Integration of GP and community pharmacy M
2. Give out FIT kits to people at high risk (e.g., by age, symptoms, purchases) PG	2. Integration of community pharmacy and hospital M
3. Provide training to pharmacy staff PG	3. More pharmacy-based assessments around risk PG
4. Improve communication and collaboration between pharmacy and different health services PG	4. Raising general awareness of CRC PG
5. Combine with other health campaigns (e.g., flu campaign or Stoptober) M	5. Increasing knowledge and education of pharmacists M
6. Optimising the pharmacy environment (e.g., form to prompt private consultation) RR	6. Supplying tools to assess risk (e.g., test kits/diary) PG

Regional differences:

Workshop 1:

- Pharmacists' time: In London, participants questioned whether the pharmacists would have the time and capacity to help with raising awareness of CRC, particularly in view of increased demands in recent years.

Workshop 2:

- In London, the participants expressed that screening for symptoms and lifestyle factors linked to bowel cancer could be carried out during booked/routine appointments for vaccinations and/or general health check-ups.
- In Newcastle, the participants stated that we could identify people of above average risk by tracking patients' purchases and linking it to their records, which are held in the pharmacy.
- In Newcastle, the participants felt that pharmacists should have access to centralised patient records, which encompass all their demographic details, case histories, symptoms, medications, etc.

Workshop 3:

- In London, the participants stated that a practical way to target patients meeting the FIT criteria, is to integrate bowel cancer campaigns with other public health campaigns.

Reoccurring Themes Across Workshops 1-3 in London and Newcastle

In total, there were six themes that reoccurred in both regions, when discussing raising awareness of CRC, risk assessing, and sign-posting patients. The six themes are outlined below and summarised in table 4.

Table 4. Reoccurring Themes Across Workshops 1-3 in London and Newcastle

Reoccurring Themes Across Workshops
Improving communication and collaboration between healthcare professionals
Raising awareness and public health campaigns
Targeting those at risk and providing test kits
Improving inclusion & accessibility for underserved communities
Support, training, & education for community pharmacy staff
Increasing autonomy of community pharmacy staff and making the community pharmacy environment more conducive to hosting conversations about bowel cancer.

Improving communication and collaboration between healthcare professionals

The participants expressed that it is necessary to bridge the gap between GPs and pharmacists via an improvement in the bi-directional communication and collaboration between pharmacies, GPs, and other agencies like NHS 111. As GPs are under a lot of pressure, primary care staff should be encouraging patients to seek advice from CPs. Likewise, pharmacists should also be liaising with GPs, if patients are symptomatic and referring them to be seen. Pharmacists should also have access to GPs booking system, in a similar way that NHS 111 does, so that they can book appointments for patients to be seen when they deem it necessary and within a reasonable period for the issue in question. Additionally, participants stressed the need for a national communication system or database for healthcare professionals to access and feed in to.

Participants' suggestions for research recommendations and/or practice guidelines

1. Relationships with other healthcare/community care team. GP practice nurse could highlight role of pharmacy in screening and legitimise role.
2. Use a national IT platform like PharmOutcomes/SONAR – can it be linked to the screening programme – where patients are not lost and can be tracked and contacted.

Raising awareness and public health campaigns

The participants expressed that it is important to raise awareness of how treatable CRC is when diagnosed at an early stage, in addition to the support available to those who are at above-average risk of developing CRC, both at a local and national level. The participants stipulated various methods of doing this, including:

- Shelf hangers and QR codes near medications used to manage/lower GI and CRC symptoms;
- Utilising social media and broader public health campaigns. Including celebrities in campaigns could be useful to remove the stigma around CRC screening;
- Advertisements/educational videos about CRC both on television and on displays in-store, which could also highlight the support available within the pharmacy;
- Posters on display in the pharmacy to provide people with information and advice about CRC;
- Leaflets should be given to those presenting with symptoms;
- Messages on till receipts;
- Advertisements on prescription bags or stickers in April (bowel cancer month).

Additionally, CP staff should promote discussion with patients who are purchasing constipation/anti-diarrhoeal medications and ask them how long they have had said symptom(s) and perhaps suggest a consultation with the pharmacist for those making repeat purchases. Finally, we could also integrate bowel cancer campaigns with the seasonal 'flu and/or other public health campaigns.

Participants' suggestions for research recommendations and/or practice guidelines

1. Print screening information on QR code in the paper bags the medication comes in or the sticky label.
2. Time is limited when people visit the pharmacy, so maybe flyers, emails/letters, private booked sessions could address this issue.
3. Place pick up cards about colorectal cancer (CRC) symptoms on the edge of shelves which contain medication used to manage lower GI and CRC symptoms.

Targeting those at risk and providing test kits

The participants emphasised that patients who are at high risk for developing CRC should be able to access a FIT kit from their local pharmacy. Additionally, there should be demonstration kits in the pharmacy so that CP staff members can walk patients through the procedure. Pharmacy staff, particularly sales staff, should invest in their relationship with their patients, so that they are able to target those who are showing symptoms and/or repeatedly buying over-the-counter medications for ailments such as diarrhoea, constipation, or haemorrhoids, and encourage them to engage in the CRC screening programme, by highlighting the opportunity and importance of doing so. Patients who haven't engaged should be given a non-responder's test kit.

Participants' suggestions for research recommendations and/or practice guidelines

1. If a patient over 50 years buys a bowel-related medication (e.g., loperamide) ask them if they've done their bowel screening in the last 2 years. If they say no, offer them a test kit.
2. If of an age where risk is higher and go into pharmacy to get bloating pills for example, the pharmacy staff member should mention screening.

Improving inclusion & accessibility for underserved communities

The participants voiced a necessity to consider cultural barriers relating to stigma around discussing health. Support should therefore be accessible in multiple languages; thus, it is key to utilise both male and female CP staff who are able to engage with their community. This includes minority populations, individuals who do not typically engage with healthcare systems, socially deprived populations, and addressing the gender gap in healthcare.

Participants' suggestions for research recommendations and/or practice guidelines

1. Option to provide support and advice in multiple languages, especially in socially deprived areas.
2. Better use of Audio Visual equipment within the pharmacy, perhaps utilising screens that people may watch when waiting in the pharmacy.

Support, training, & education for pharmacists

As CRC is such a highly emotive topic, the participants expressed that the whole pharmacy team should receive training around communication, as it is vital that they refrain from using fear-inducing language with patients enquiring about bowel cancer and instead aim to inform and educate patients. Pharmacy assistants should also be trained in noticing the signs and symptoms of CRC as they are often the first port of contact and speak to patients the most. CPs should be provided with risk assessment tools for possible onward referrals. The participants highlighted the importance of a standardised national training programme for pharmacists.

Participants' suggestions for research recommendations and/or practice guidelines

1. Ensure that pharmacy assistants know how to ask the correct questions and when to refer to pharmacist or pharmacist technician.
2. Better support for sales staff who are likely first port of call. Confidence to raise issue e.g., age and access to screening. Address hesitance e.g., explain testing.
3. Pharmacy assistants would need full training to be able to answer their questions fully otherwise confidence in pharmacy will be compromised.

Pharmacist role, environment, & autonomy

The participants stated that, in the near-future, pharmacists should be incentivised to be a part of the CRC screening programme, so that they are able to supply FIT tests to symptomatic patients and make direct referrals. The group expressed that there needs to be some changes made around the culture of pharmacy, as it feels like they have become quite transactional e.g., a place to buy toiletries and make-up products, not receive a health diagnosis or to have a discussion about private or complex health needs. Additionally, there needs to be more privacy within the pharmacy and private spaces for confidential conversations, as this not something that should be discussed on the shop floor. Consultation rooms are a contractual requirement in the UK, however, patients often do not know that they exist, so this should be highlighted in the pharmacy. Equally, they are not always used for their intended purpose and can be inaccessible due to storing stock and other things. They also mentioned that there needs to be some changes made to the narrative around the roles. Staff should wear name tags, which stipulate their role, so that people are aware of who is qualified to assist you with such a sensitive topic, the pharmacists should be clearly identifiable.

Participants' suggestions for research recommendations and/or practice guidelines

1. Incentives for pharmacies to be part of bowel cancer screening programme use this to ask patients if they have symptoms.
2. Work on approachability. Sometimes the public find pharmacists a little intimidating as they always look busy and that you are disturbing them. Local villages are perceived as being more friendly - is this about familiarity with the same team?

Workshop 4: Consolidation meeting

Workshop 4 brought together representatives from London and Newcastle to compare priorities across the two areas. The workshop consisted of four members of the public, eight community pharmacy staff and eight primary care staff. For each of the three lists of priorities (outlined in Tables 1-3), we reflected on geographical similarities and differences.

Most themes came up in both region's workshops, but they were ranked as a different level of priority. For example, in workshop 1, 'providing test kits' was ranked as number 7 in London, but was ranked at number 3 in the North-East of England. The group discussed whether they believed that the differences should be upheld, or whether they

were also applicable to their region. It was agreed that the highlighted differences were applicable to both areas, thus, they were considered similarities.

We then presented the group with the 6 reoccurring themes across all workshops. In breakout groups, representatives from the two sites reconciled and/or upheld differences to agree on a final list of practice guidelines (something we can address now) and research recommendations (something that can be addressed in the future), including any remaining variations. In the second part of the workshop, a spokesperson from each group explained their group's rationale (see appendix 1). We reviewed the extent to which each of the priorities could be implemented directly via practice guidelines or required further research. At the end of this process, each area provided us with a well-specified list of practice guidelines and research recommendations, relating to each of the core themes. These lists were then brought to our steering committee and presented in the dissemination meetings to key stakeholders.

Dissemination meetings

We ran dissemination meetings in London and Newcastle with a broad range of stakeholders from pharmacy organisations, general practice and colorectal cancer organisations. Our PPIE colleagues were involved in both meetings. The focus of these sessions was to look at how we can best get our outputs from this project disseminated so that the work has the potential to create impact. The sessions were well attended and we received some valuable advice around how to take the work forward. There were clear messages about dissemination to the full pharmacy team, including assistants and technicians

Key achievements to date

As part of the Nominal Group Technique, we now have a list of research recommendations and practice guidelines. We discussed the similarities and differences across the two sites in a jointly held virtual workshop on the 20th of November 2023. This was followed by two dissemination events to discuss strategies on how to promote awareness of practice guidelines and research recommendations respectively.

We have also drawn up a protocol describing our methodology. In addition to this, we have filmed and recorded a podcast in collaboration with our Patient Participation and Involvement Panel and our Expert group (which have been consulted via online meetings and offline communications).

Details of any adverse events/problems + steps taken to resolve them

We have not experienced any significant issues with this research in terms of timeline or budget. We were able to recruit on time and hold workshops on time and within our budget. We were also pleased that all of our participants expressed high levels of satisfaction with their participation in this project and many expressed a strong desire to participate in future workshops.

Intellectual Property, Commercialisation and Clinical Adoption

Please provide brief details of IP outputs arising from this research.

We do not expect any IP to arise from this project.

Our guidelines and research recommendations have the potential to be adopted clinically. However, at this stage we expect that further work to implement these outputs needs to be done and in turn evaluated systematically to ensure that if pharmacists become involved in early CRC detection or in promoting screening that it is done as part of the already embedded services that exists within the NHS.

Actual and Anticipated Impact

Please provide a brief impact statement.

Our guidelines will produce immediate impact around awareness of bowel cancer for community pharmacy. Our connection to the Royal Pharmaceutical Society, Primary Care Networks, and Local Pharmaceutical Committees allows dissemination nationally. Bowel Cancer UK has expressed interest in working with our guidelines as part of their training materials for CP. Our team have demonstrated that areas in which these improvements would take place are likely to be urban, economically deprived and ethnically diverse where CRC awareness is low and outcomes are worse. We expect this work to support further research and grant acquisition in this area.

Describe the impact the research has already achieved or might achieve in the short, medium and long term.

Throughout our project, we have actively disseminated our results via our project website and social media channels and using blogs, vlogs and podcasts. The wider and longer-term dissemination of our findings and implementation of guidelines will be underpinned by the two dissemination meetings we have held, these are described below.

Dissemination meeting 1: Practice guidelines. The workshop brought together the PPI Advisory Group, the research team, members from the steering group, and external stakeholders. We were able to garner already have active interest from key stakeholders, including (see letters of support from Bowel Cancer UK, The Royal Pharmaceutical Society, the Transforming Cancer Services Team of the Healthy London Partnership). We were able to widen the scope of organisations to Health Education England, the Company Chemists Association, large multiple community pharmacy organisations, decision makers of the new Integrated Care Systems and our Clinical Research Network. During the four-hours of workshop time, we were able to discuss how we can develop a targeted policy brief. This will ensure that the key findings and recommendations are presented in a way that will maximise the likely of policy and practice impact. This will be further supported by a video, which will summarise the process used to obtain guidelines, provide video clips of co-production in action and statements from participants.

Dissemination Meeting 2: Research recommendations. This meeting discussed the top 10 research recommendations across awareness raising, identifying risks and sign-posting to other health services. The session aimed to identify appropriate research designs; develop specific aims and objectives and identify funding opportunities. For example, in the section on research designs we discussed whether a specific recommendation (e.g., test the effectiveness of using Faecal Immunochemical Tests in community pharmacy to support people with low-risk symptoms) is ready for testing in a Phase 3 substantive trial or requires feasibility or pilot testing and develop matching aims and objectives. This was followed by considering implications for sample size, approximate study lengths and budget. Several key stakeholders agreed to attend the meeting. For example, the senior programme management lead from Kings College London Cancer Prevention Trials Unit advised on methodology. Research Programme Managers from the Cancer Research UK Early Detection and Diagnosis Committee and from Bowel Cancer UK brought their expertise on how our research recommendations align with their strategic priorities and how they can publicise these recommendations with the research community.

We do believe that there is the potential for larger pieces of work to continue on from this project to try and produce a clear referral pathway for a patient who presents at the community pharmacy with alarm symptoms. At present there are many informal routes or local arrangements to support this. Our work clearly outlines views that suggest these routes should be formalised and made more reliable for the patient and the health professionals involved. The same argument applies to the screening kits and how we can use community pharmacies to increase uptake of screening. Our participants outlined the requirement to have reliable systems of referral or screening kit issue, which were embedded in existing services and not stand alone approaches, which may have the potential to increase workload and cause confusion for the public. It is our contention that further research work could define the best way to approach this system and even have the potential in the long-term to examine how much impact such services could have on earlier CRC diagnosis. We would also argue that once defined that such approaches could be applied to some other cancers.

Dissemination

Please describe how you have disseminated your research findings and what your plans for further dissemination are.

Throughout the grant, academics at UCL and Newcastle used social media to raise awareness of the project. This included several communications via 'X' to announce the launch of the project and various messages to invite members of the public and health care professionals to express their interest in workshops. We did ensure that these invitations were also circulated in various commonly spoken languages in both areas to improve engagement with minority groups. Both teams posted pictures from each workshop and circulated more posts during the days meetings were held, these posts received attention within the social media sites we used.

We held two dissemination meetings in February 2024. The first meeting was online and led by the Newcastle Team. The objective of the meeting was to discuss practice guidelines for community pharmacy staff. The sessions involved a variety of people including general practitioners, pharmacists, academics, members of the public and representatives of various groups with an interest in this area. During the workshop, we presented participants with the practice guidelines and then allocated them into small breakout groups. Each breakout discussed the individual practice guidelines (e.g. improving communication, raising awareness, improving inclusion and Pharmacy staff role, environment and autonomy). Within each theme, each breakout group selected the most important guideline. For this guideline, the groups discussed feasibility and training needs, which were brought back to the main plenary for further discussion and debate. We repeated the same process in a in-person workshops attended by representatives from Cancer Research UK, NHS England and pharmacies.

We have written a manuscript for submission to a journal, this is currently undergoing the final steps of preparation and will be submitted in the near future. During and after the second dissemination workshop, we recorded several interviews for a video podcast. The podcast was co-developed with our public co-applicant and one of our patient representatives (Stephen Rowley). We will publish our podcast via a microsite, which will also contain a copy of the final report and the list of recommendations and guidelines. We have submitted an abstract of the work to the Cancer Research UK Early Diagnosis Conference 2024 in Birmingham, which has now been accepted for inclusion in the conference as an oral presentation. Finally, we will work with Cancer Alliances, our PPI and steering committees to consider additional ways of disseminating our findings among deprived communities and community pharmacy staff (e.g. community listening sessions).

Publications

Number published	0
Number in press	0
Number submitted	0
Number in preparation	1

Publications and Other Outputs

Grant holders are required to ensure that NIHR is named and acknowledged appropriately when submitting a paper or report for publication. Please ensure that the following statement is included in any presentations, posters or papers.

STARTS

This project is funded by the National Institute for Health and Care Research (NIHR) under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number NIHRXXXXXX/PG-PB-XXXX-XXXX). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

ENDS

Use of the correct project reference greatly aids the automated identification of publications and contributes to NIHR's ability to report accurately on the outputs, outcomes and impact of the work we fund.

It is no longer a requirement to notify us of your dissemination outputs, however you are still required to send details of all media activity (e.g. press releases, media exclusive journalist briefings etc) to RfPB@nhr.ac.uk.

Please add any research outputs that incorporate findings from the research and have been published since the last progress report.

Where outputs have not been published online (or the full text is not available through Europe PubMed Central (Europe PMC) or open access from the publisher) please append a copy of the final version as an annex to this report in the '**supporting documentation**' section.

Please detail any awards and/or prizes received by the team as a result of undertaking the research.

None

Identifying newsworthy, impactful or sensitive research

Is the research likely to generate newsworthy and/or potentially impactful outputs?

Yes

Is the research likely to generate politically sensitive outputs? Is the research likely to generate politically sensitive outputs?

No

If you answered yes to either of these questions, please provide brief details as to why.

Community pharmacies are key part of society, they are very frequently used and are more accessible than any other healthcare provider, with convenient access, generally available without an appointment for people. Extended opening hours, improve this accessibility and convenience. Equally, we know from our previous research that pharmacies are more accessible by people who live in socioeconomically deprived areas and so they have the potential to address some of the inequalities that we know exist around cancer diagnosis and survival amongst people within these societal groupings. We believe our work highlights a key issue that people with potential early symptoms of cancer often use community pharmacies to purchase medicines that help them, to manage these symptoms. Our outcomes outline a co-produced set of guidelines and research recommendations that could contribute towards improving awareness of CRC within the population, improving the uptake of screening in the populations that are subject to national screening and also to design more reliable communication channels between community pharmacies and general practices so that we can fully utilise the potential role that community pharmacies have within our healthcare system in the future.

Patient and Public Involvement

Please provide a summary of the patient and public involvement in this research.

The idea of exploring the role of community pharmacy in early diagnosis of colorectal cancer (CRC) was first discussed with the lay co-applicant before the COVID-19 pandemic (which was facilitated by the RDS Service in Northeast and North Cumbria). Even at that time, there was recognition that access to primary care for people with vague symptoms was difficult. There was acknowledgement that in urban areas, community pharmacies would be more accessible. The panel expressed general enthusiasm for the concept, but also several concerns including lack of privacy, insufficient awareness by the public about the role and skill set of community pharmacists and issues around fitting these services around the existing commitments and busy environment of a community pharmacy. It is worth highlighting that this session was done prior to the explosion in workload community pharmacies have experienced both during and after the pandemic. The panel endorsed the ethos of co-production in which members from different stakeholder groups such as community pharmacists and primary care staff could share their concerns and come up with ideas to increase collaboration in this area.

Prof Adam Todd was our PPI lead alongside Mrs Lindy Berkman, roles and responsibilities were agreed between the two key people and within the wider PPI group. Prof Todd liaised with the research team via the PPI advisory group (which he co-chaired with Ms Berkman) and the Steering group. He was able to act as a single point of contact to process any queries relating to timetabling, access to meetings and payments of PPI advisory group members. He signposted training opportunities and assisted with practical arrangements. He has led on production of PPI contributions to interim reports and the evaluation of the PPI strategy.

The group recommended setting up a PPI advisory groups of 5 members that could provide ongoing input throughout the project. In preparation of the Stage 2 application, Prof Adam Todd and the lay co-applicant (Mrs Lindy Berkman) worked together to refine the plan for PPI where, in doing so, they identified a lack of PPI support in facilitating workshops held in the North East. Therefore, we agreed that one of the PPI advisory group members will co-facilitate all workshops to achieve a balance with the way workshops ran in London and to reduce the workload for Mrs Berkman. This worked well during our project and PPI groups provided with some excellent insight around how our results were viewed by patients and how they wanted to see the work taken forward in future.

As part of our preparation, we reviewed feedback from Stage 1. This included a discussion about how to better understand impact of other health providers. We reviewed different models of treatment and decided to integrate colorectal specialists and GPs with special interest in bowel cancer as members across each workshop; they had full voting rights in the workshops to ensure that our practice guidelines and research recommendations are aligned with their concerns and priorities. Again, this worked well and allowed us to include key perspectives in the care pathway for CRC, whilst ensuring that we provided an open forum for patients to feel they could contribute to discussions openly and clearly.

We held two meetings with our PPI advisory panel during the project and invited the whole panel to attend each of our dissemination workshops. The panel agreed with the recommendations that were extracted from the workshops. One important reflection from the first panel was to ensure that community pharmacy should provide support for people across all age groups including younger adults. In the second group, there was also consensus that there are important challenges such as the fact that community pharmacists are time poor and would require more resource for any of the recommendations to work. The panel recommended that a series of small pilots would be important to identify and overcome practical barriers. The PPI panel was also unanimous in recommending to promote interventions supporting Early Diagnosis of Screening, particularly as this could include people of a younger age.

One of our PPI panel members has produced a video, which we will make available via a microsite (<https://phabric.org.uk/>), alongside a final report and links to publications. Our PPI panel also made specific recommendations about the potential audience, namely "people with the power to change things." Targets included NHS England, and Commissioners. This video includes the views of all the stakeholders and the research team and is intended to communicate the outcomes of the research in an easy to follow and accessible form.

Please tick the box if this section of the report has been written with members of the public who have been involved in the research.

Confirmed

Future Research Plans

Please outline your next steps to maximise patient benefit or to further inform policy development/evaluation.

Moving forward with this research work we have the following plans:

We will be liaising with Cancer Alliances, and Pharmaceutical Committees to disseminate the outcomes of this work and help implement the practice guidelines that were developed as part of our workshops and subsequent dissemination workshops. Raising awareness and public health campaigns was a recurring theme, which encompasses several more specific actions including:

1. Raising awareness among pharmacies in urban areas in England of our findings and resources that are already available to support implementation of our guidelines. For example, we have been in discussions with Dr Jackie Lewis who has developed training packages (Not Normal for you, and Let's Communicate Cancer) with the British Oncology Pharmacy Association to support early diagnosis in community pharmacy) about how we can combine our shared understanding of the potential role of community pharmacy in early diagnosis of cancer.
2. Raising awareness of pharmacy as a space in which people can discuss colorectal cancer screening and symptoms. We have also been in discussion with the Central London Cancer Alliance, and the London Middlesex Pharmaceutical Committee who have expressed a strong desire to participate in future campaigns. We will use in-depth analysis of our workshop data to develop plans on how to raise public awareness of colorectal cancer in community pharmacy. We are currently working with Claremont (a social marketing company) to use a 'positive deviance' approach in which we would identify 'bright spots' within the pharmacy network where some of our guidelines are already being implemented. We will then analyse what the replace conditions are that have removed barriers to implementation of the ideas. We will use insights from this work to then repeat this model and grow the number of pharmacies adopting our practice guidelines across urban areas in England.
3. In terms of policy development, we will be working closely with key stakeholders from cancer charities, Pharmaceutical Committees, NHS England and Cancer Alliances to understand how our outputs can influence future policy around the role of community pharmacists in identifying CRC and in cancer diagnosis more broadly. There are numerous initiatives already in existence, including the early cancer diagnosis referral pilots developed in the Early Diagnosis of Cancer pilot supported by the NHS. Our research should help inform this and future work to ensure that the voices of the public, pharmacists and pharmacy staff are included in how these programmes develop and are expanded in the future. We do have the opportunity to learn from the experiences within this pilot and understand some of the systematic challenges that exist to more widespread implementation of this approach.
4. Work with the Bowel Cancer Screening programme to understand what potential there is for pharmacists to be involved in the process of screening. Our research shows that there could be differing degrees of involvement from awareness building to issuing of kits and integration of IT systems. Clearly there are many unanswered challenges within that range of potential activity, not least how we can avoid unexpected workload for the screening programmes and what is possible in terms of IT integration, does the screening programme have the appetite for the involvement of pharmacists. We will look to understand these challenges in greater detail.
5. Our final aim is to look to pilot a CRC early detection pathway in a number of pharmacies to understand how we can address some of the challenges raised through our co-production and ultimately what is the potential benefit to patients in terms of numbers of cases detected earlier in the disease timeline. We have previously proposed a programme of work to address these issues, but NIHR felt we needed to answer some fundamental questions with our current project. Now this work is complete we can revisit that project with the information we have now.

Publication of Research Findings

Please indicate if there is any information that you do not wish us to place in the public domain and explain why.

None

Data Sharing

Where applicable, please provide a statement about your data sharing and accessibility. It should provide a clear and positive indication:

- Where and when the data will be shared
- Who can access the data
- How the data can be obtained

We will post recommendations on NCL and UCL website and in a research publication. Anonymised transcripts will be available on request.

No data has been shared from this project other than discussion of anonymised transcripts emerging from interviews.

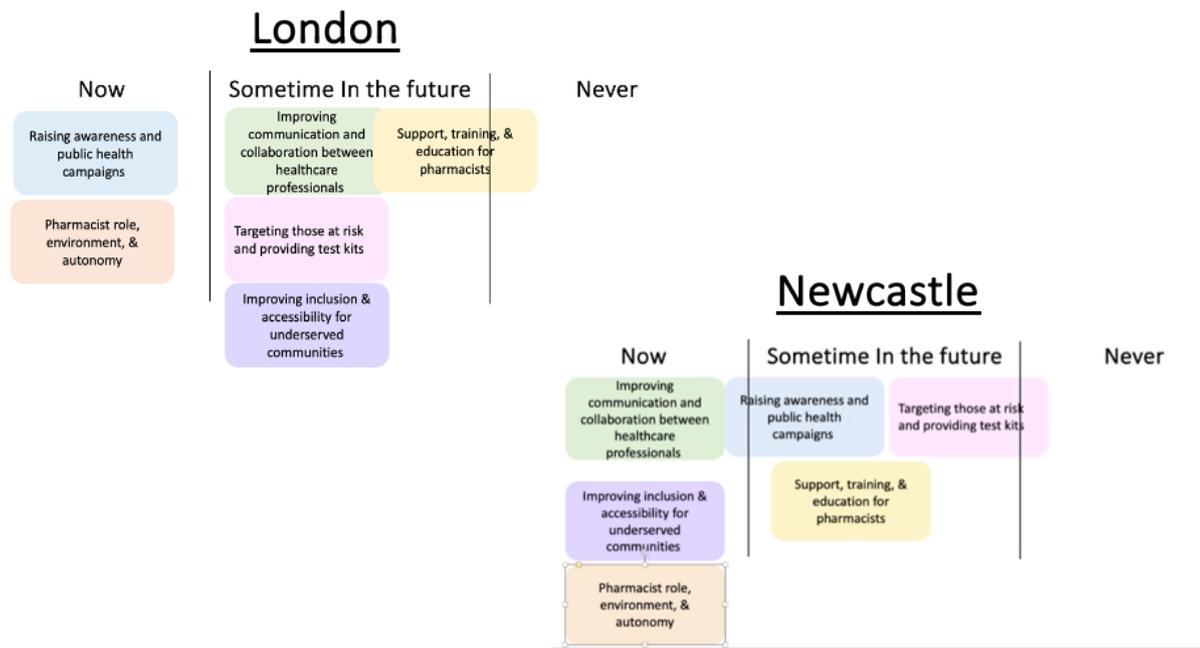
Post-Award Monitoring

Please provide the details of the individual whom we can contact for post-award monitoring of this project. Usually this will be the Chief Investigator, however, another individual, for example a project manager, may be named instead.

Contact name	Christian Von Wagner
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Supporting Documentation



Appendix 1. London and Newcastle’s final list of reoccurring themes categorised as practice guidelines or research recommendations.