

Workshop Participants & Stakeholder Recommendations for Research Priorities for Pharmacy Practice Research



March 2009

Summary of Recommendations from the Pharmacy Practice Research Summit

It is important for pharmacists throughout the UK, and in all sectors, to be recognised for their expertise and unique knowledge base. This recognition will inform service commissioning decisions, in collaboration with other members of the healthcare team. The future of pharmacy practice is dependent on building up the profession's research and evidence base.

Accordingly, this summary outlines the discussions and recommendations of a research summit hosted by the Pharmacy Practice Research Trust (the Trust)* to specifically discuss the future of pharmacy practice research across the UK.

The 2008 White Paper for Pharmacy, *Pharmacy in England - Building on strengths – delivering the future*, whilst stating that pharmacists should be involved in the delivery of a wider array of services, also clearly indicates that research underpinning both clinical and commissioning decisions needs to be strengthened. Indeed, the need for further development of the evidence base across all devolved administrations is clearly stated in the strategies for pharmaceutical care in Scotland, Northern Ireland and Wales. This is not surprising as quality of care and patient safety are essential principles underpinning the drive for continuous improvement in the delivery of services across all sectors by all providers. Demonstrating quality in care and pharmacists' contribution to patient safety can only arise from the development of a robust evidence base.

The White Paper is highly aspirational in terms of the services that pharmacists

could deliver, notably in the community but also for pharmacists working in secondary and primary care. There is, however, little recognition of where pharmacy practice is on the continuum of research in terms of workforce capacity and the infrastructure that should be in place. This is crucial to the delivery of many of the new services and roles within the White Paper. Furthermore, there is limited research on pharmacist interventions in the care pathways of key patient groups and whether these interventions demonstrate, for example, improvements in the long term outcomes of patients and/or value for money.

Although pharmacy practice research has come some way over the last 10 years and it is recognised that some highly influential research from all four countries has been undertaken, the fact remains that, in general, the research is largely small scale and exploratory in nature. This is in part due to a comparatively small research workforce unsupported by a robust research career framework and a shortage of pharmacists with PhDs in research and in teaching positions in schools of pharmacy; a factor identified more than 10 years ago in a report produced by the King's Fund and the RPSGB on the future of pharmacy practice research. This report published in 1997 highlighted the need for investment in the short-term in both research and the pharmacy research infrastructure.

Competition across all health professions for limited research funds is increasing and applications from pharmacists to funders such as the National Institute for Health Research (NIHR) and the Medical Research Council (MRC) are low compared to other professions and the quality varies with mixed success rates in England. Greater success has been noted in Northern Ireland. Accordingly, funding awards for medicines management are won by medical and nursing teams, and increasingly for applied research, by sociologists and non-pharmacists and, to an extent, by market research companies now undercutting universities on costs.

* The Pharmacy Practice Research Trust was established by the Royal Pharmaceutical Society of GB in 1999 as an independent research charity with a broad objective to promote and develop the field of pharmacy practice research.

The essential starting point for any strategy must be building research capacity and integrating research into practice.

The Pharmacy Practice Research summit held in November 2008 brought together key stakeholders from all sectors of pharmacy, employers and policy makers. The event looked at the three key areas that should be the immediate focus for a strategic direction for pharmacy practice research. These key areas being: research capacity and workforce, research priorities and integrating the findings of this research into practice. The event included presentations from the Chief Pharmacists of England, Scotland and Northern Ireland, The Welsh School of Pharmacy, the Director General of Research at the NIHR and from Australian researchers who have successfully secured dedicated research and development funding to underpin the government's contractual arrangements with community pharmacy. The presentations were followed by workshops around 5 key areas:

- Integrating Research into Practice
- Long Term Conditions
- Public Health
- Minor Ailments
- Integrating Evidence into Practice

The outputs and recommendations from participants have formed the outline of this theoretical strategic direction for pharmacy practice research.

The objectives of this document are to:

- 1) raise awareness of the critical need for investment in pharmacy practice research which will enable both the government and pharmacists to realise the vision within the White Paper;
- 2) raise awareness of the need to build research capacity in pharmacy, to build the pharmacy academic workforce and to encourage practitioner engagement with research;

- 3) identify research priority areas that must be funded to support future clinical decision making and the investment of public money in services; and,
- 4) outline the support infrastructure needed to both build research capacity and to undertake high quality research and ensure utilisation of this research findings.

Emerging Research Areas

Integrating Research into Practice:

There is a need to understand how research is taught and imbedded at undergraduate level, and why there is an apparent lack of engagement with research at practice level. The lack of research capacity and the dearth of research in the contractual arrangements for the delivery of services in the community are key areas that should be addressed. The lack of general engagement in clinical trials, notably amongst advanced practitioners, and the research skills and capacity of the pharmacy workforce in general should be highlighted as areas for both investigation and investment.

Long Term Conditions:

There is a gap in large scale trials that investigate the clinical and quality of life outcomes of patients and the cost of service delivery. Systematic reviews should be undertaken as there are a large number of small exploratory studies across England and devolved administrations that should now be built upon. Several key areas have been identified for investment in research, including the role of pharmacists in the care of newly diagnosed patients; transfer of care from secondary care to the community and the impact on medicines management; and, the impact of independent prescribers/pharmacist led clinics on the long term outcomes of patients. These areas should also include investigating the quality of care and full economic evaluation.

Public Health:

It is acknowledged that measuring the value of public health interventions in terms of patient outcomes is notoriously difficult even with well designed and large scale

research projects. For pharmacists, public health services largely consist of advice and information services to a transient population of customers who may or may not return. Monitoring throughput and, to some extent, satisfaction with services are inadequate measures of how effective a service is on the long term health of the public. There is evidence of a positive impact of pharmacist interventions arising from small scale studies, which should now be extended to large scale trials including economic evaluation of the services. These areas include screening, smoking cessation, sexual health, obesity and alcohol abuse. In addition, workforce skill base and the role of pharmacy in the wider healthcare team should be considered.

Minor Ailments:

As with long term conditions and public health, systematic reviews are required and investment to undertake large scale trials which evaluate the impact on patients and the cost of services delivered through pharmacies. Further work is needed to understand the triggers for seeking treatment for minor ailments from pharmacies rather than other providers. There is also a need for evaluation of the diagnostic skills of pharmacists and access to formal referral pathways.

Integrating Evidence into Practice:

Research is needed to understand how pharmacists currently access and use evidence in everyday practice across different sectors.

Preliminary Funding

The level of investment in workforce, research priorities and infrastructure required will be considerable to produce high quality research that follows MRC guidance for exploratory stages and Randomised Control Trials (RCTs). Participants and stakeholders felt that this would be in the region of approximately £15 – £20 million over 5 years.

There is a strong call for funding for priority areas for projects in Long Term

Conditions, Public Health and Minor Ailments across the UK countries and that funding should at least in part, come from the Departments of Health (all 4 countries) as the authors of the various published documents that promote pharmacy practice.

It is important to note that investment in other areas of research that seek to advance pharmacy as a profession and which seek to investigate current professional practice, education (undergraduate/preregistration) would not be deemed to align with national health priorities but be categorised as profession specific research. This research would need to be funded by the profession's employers and leaders. It is therefore essential that those with responsibility for delivering quality services must invest in delivering the evidence that underpins these.

Preliminary Support Infrastructure

Funding for research is not the only requirement to support the development of pharmacy practice. Academics and researchers themselves have a role to play in applying for funding for research that meets the needs of the wider health agenda. Successful applicants to large funding bodies, such as the MRC and NIHR, have tended to be collaborative in nature both across schools of pharmacy and across professions, recognising that pharmacy research cannot sit in a silo.

A UK wide research network of key pharmacy academics is required to ensure a cohesive strategic direction of research for pharmacy. This needs to be linked with other research networks from other professions so that opportunities for collaboration can be realised.

There also needs to be improved links between Higher Education Institutes and practice, these could be facilitated through local research champions.

A searchable index of pharmacy practice research which should include examples of good practice would facilitate access to research and promote collaborative working. However, this should link into

existing sources so that pharmacy research does not sit as a silo outside of health service research. This could be run through a 'centre of excellence' and funded by pharmacy organisations.

Without doubt the number of pharmacists undertaking PhDs who form the future leaders of the research profession is far less than other professions. This may in part be due to the lack of formal career structures and training opportunities that have benefited other professions[†] such as medicine, dentistry and nursing.

The return of a fellowship scheme like the Department of Health's Pharmacy Practice Research Enterprise Scheme which offered flexible/part time academic clinical fellowships for pharmacists should be considered. Governments should support the implementation of an additional 10 year period of support to build the academic and research workforce in the UK. In addition, employers must be willing to recognise and support research and development as part of a pharmacist's role.

Pharmacy leaders need to engage with other health professionals to identify collaborative research and educational needs (professional development and research support).

There is a need to look at the role of research and decision making in practice, and how this links with education at undergraduate level. Current work on the curriculum and future pilots for integrating the MPharm with preregistration could be an area to consider for evaluating this.

This work should be a catalyst for policy makers, leaders of the profession, academics, employers and pharmacists from all sectors to influence and build the foundations for the future of the profession.

[†] UK Clinical Research Collaboration: Clinical Academic Career frameworks.
<http://www.ukcrc.org/workforcetraining.aspx>

A Strategic Direction for Pharmacy Practice Research

The future of pharmacy practice is dependent on building up the profession's research and evidence base.

The White Paper for Pharmacy, *Pharmacy in England - Building on strengths – delivering the future* clearly indicates that research underpinning both clinical and commissioning decisions for pharmacy needs to be strengthened. Indeed, the need for further development of the evidence base across all devolved administrations is clearly stated in the strategies for pharmaceutical care in Scotland, Northern Ireland and Wales.

Historically, the nature of pharmacy practice research has tended to be of small scale and of insufficient power to build robust evidence. Case study research is common and, whilst interesting, findings cannot be generalised to wider contexts. It is recognised that some highly influential research from all four countries has been undertaken and, more recently, researchers in some areas are having increased success in securing large research grants. However, there is a continued need to '*harness the pharmaceutical profession's contribution to research*'. It is important for pharmacists in all sectors to be recognised for their expertise and unique knowledge base and for services to be integrated further into mainstream healthcare and this will require good evidence to inform the change process.

There is a great deal of aspiration within the various pharmacy strategies of all countries of the UK around the place of research informing workforce, education, and practice and commissioning. There is also a commitment to explore how best to create a clearer framework for the evaluation of pharmacy services in terms of patient outcomes, quality and value for money. Increasing the use of cognitive services will require evidence of outcomes not previously linked with contractual arrangements for pharmacy. All professions will increasingly have to demonstrate value for money in

comparison or in co-operation with an increasing array of providers.

Expanding the role of pharmacy to meet these objectives requires a strong evidence base in terms of both benefits to patients and value for money. Current research and the resources to support research are far from commensurate with the Government's ambitions. The need for studies that are sufficiently powered to generate robust evidence to underpin commissioning, and a quality based approach to the national pharmacy contracts is now very pressing indeed.

To ensure that pharmacy can play its part in meeting UK Governments' objectives for health services, patient choice and access to care there now needs to be a co-ordinated strategic programme for pharmacy research and development comparable in scale to that in place in other countries, such as Australia. Substantial funding for the development of research that is of '*high quality, innovative and internationally recognised*' is integral to the Australian government's funding agreement for the delivery of services. This equates to the UK Contractual Framework for Community Pharmacy and goes beyond contractual arrangements *per se*. The agreement embraces workforce development, capacity building, pharmacy practice research and development in a bid to ensure patients/public receive quality care, and that the services represent value to the tax payer.

Implementation of a UK strategy will require greater success in meeting the Research Assessment Exercise (RAE[‡]) requirements and in competing for limited funding resources among higher education institutes. In addition, the requirement for full economic costing for even small scale exploratory projects are not entirely supportive of collaborative research practices, a critical factor in successful patient-centred research funding.

Access to dedicated central government funding streams also places pharmacy in competition with other health and

[‡] Soon to be replaced with Research Excellence Framework (REF).

biomedical science professionals. In comparison to medicine and nursing, pharmacy professionals submit a relatively small number of applications.

Essential steps to overcome this lack of competitiveness include a need for greater strategic thinking within the profession and the need for priorities for pharmacy practice research to be more firmly linked with national health policy and research priorities.

Information from the NIHR indicates that successful applications for funded research through *Research for Patient Benefit* (RfPB) that deal with medicines, and are relevant to pharmacy, have largely been given to either pharmacists in collaboration with senior medical colleagues or *vice versa*. In addition to demonstrating quality and innovation, chances of funding are therefore greatly increased with collaborative applications addressing shared priorities.

If pharmacy is to become a sustainable link in referral services and patient care pathways the key elements must be addressed. These include:

- building research capacity;
- building the research knowledge; and,
- applying the evidence base to practice

Responsibility for these actions must lie largely with the profession. Mindful of this, the Pharmacy Practice Research Trust hosted an event over the 5th and 6th November 2008 with the intention of bringing together key stakeholders across pharmacy and academia to initiate discussions around the concept of an overarching **profession led, UK wide** research strategy for pharmacy. It was not the purpose of the event to define and duplicate national research strategies for health *per se*, but to define a profession led strategy that aligns with national priorities, builds the evidence base for pharmacy intervention across the management of long-term conditions, public health, and self care (minor ailments), and builds research capacity and mechanisms for integrating the evidence base produced into practice.

Event workshops were designed around three areas: i) identifying support for building research capacity, ii) identifying clinical research priorities and iii) mechanisms for integrating the findings of this research into practice.

This event represents only the first stage in identifying priorities for research and raising key issues that act as barriers or facilitators to participation in research.

The Trust would like to thank all who attended and participated in the workshops and who contributed by completing the workshop questions outside of the event. The Trust would also particularly like to thank the key note speakers;

Dr Keith Ridge, Chief Pharmaceutical Officer, Department of Health, England

Dr Norman Morrow, Chief Pharmaceutical Officer, Department of Health, Northern Ireland

Professor Bill Scott, Chief Pharmaceutical Officer, Department of Health, Scotland

Dr Dai John, Head of Clinical Pharmacy, Welsh School of Pharmacy

Professor S C Benrimoj, Pro-vice Chancellor (Strategic Planning) & Professor of Pharmacy Practice, University of Sydney

Professor Sally Davies, Director of Research & Development, Department of Health

Please note that speakers' presentations can be downloaded from the Trust website: <http://www.pprt.org.uk/Events/EventsHeld.aspx>

1. Integrating Research into Practice

Building and sustaining a research culture in pharmacy is crucial. Whilst there is acknowledgement of a lack of large scale robust evidence to inform current service development, identified research priorities will in effect be retrospectively addressing the need for evidence. There will be new and emerging research questions and fields of medicines management that will require addressing in the future. The key to all of this, now and in the future, is a robust research workforce both in academia and in practice. The essential starting point for any strategic direction for pharmacy practice research must be building research capacity and integrating research into practice.

The aim of this workshop on *integrating research into practice* was to identify a clear strategy for engaging **ALL** pharmacy practitioners in involvement with robust research, from design to conduct with a strategic aspiration of improving critical thinking, empowerment of staff and professional growth. The workshop was designed to look at pharmacists' involvement in research as an integral part of professional practice and the infrastructure that currently supports this.

The issue of integrating research into practice is not new, is not unique to pharmacy and is of international concern. Several studies among community pharmacists investigating the barriers and motivators to participation in research have found common themes including:

Motivators:

- Personal interest in research or specific element of practice.
- Previous experience of research, or access to research training, through accredited courses with research component and integral research project.
- Something outside of daily routine.

- Involvement in the practical aspects in terms of how the research might work in practice, the professional delivery of services and the collection of data.
- Interest in developing new health services and expanding current practice.
- Increase professional knowledge base and career progression.
- Research as a group undertaking (i.e. part of research group or network).

Barriers:

- Mindset – lack of confidence and attitude. Pharmacists may hold the belief that this is not their role, or that their contribution will not change or improve health service outcomes.
- Communication with research teams.
- Impractical research design.
- Infrastructure (time, money, staff) and Training (skills and knowledge - specifically in recruiting patients and organising research activity within the pharmacy).
- Adequate financial compensation of their time.
- Lack of support from business partners and employee pharmacists.
- Lack of understanding on how to apply the results to practice (relevance).
- Where to go for help with research ideas – feeling overwhelmed by research governance and processes.
- Poor physician attitudes.

Participants of the workshop were asked to take these factors into consideration and to work through a series of questions, the responses to which are outlined herein.

1.1 Workshop Outcomes

Please specify any areas that are not listed that you think should be included and why (i.e. any additional barriers/motivators)

Facilitators:

- *Intellectual challenge outside of everyday routine practice;*

- Needs to be better dissemination of research findings to professions and to media;
- Research bulletins with summarised research to participants;
- Closer links between academic units and pharmacists, the vast majority of important research results from partnerships and collaborations between academic units and clinical environments;
- Consultant pharmacists – have a research role and are role models, but often don't have research background;
- Financial incentives to staff rather than contractor;
- Need to sell the concept of participation in research as a good financial incentive to business development;
- Make part of job description;
- Alignment with the Audit component of the contract for community pharmacy;
- Link to mandatory Quality Assurance Framework;
- Validated Continuing Professional Development (CPD) activity;
- Part of career structure;
- Knowledge Skills Framework (KSF) requirement;
- Explicit rewards.

Barriers:

- Lack of networked academic practice research groups;
- Localised research, bottom end of system, small scale projects;
- Professional, cultural barriers – participation in research not the norm;
- Commercial focus of many community pharmacists;
- Lack of research as an integral part of advanced practice – unlike other health professions – this is linked with the lack of career structure across pharmacy. This means a lack of role models.
- No exposure to research culture in many settings;

- Corporate targets for meeting contractual arrangements – i.e. Medicines Use Reviews or research?;
- Done in spare time;
- Fear of over involvement & insufficient time – unrealistic expectations;
- Lack of explicit reward/Lack of short term rewards;
- Fear of wrong answer from research;
- RAE – publish progress in academic peer reviewed journals - not well read by practitioners. Also tends to be in specialist journals which are not reaching other professions either;
- Fear of “research language” born out of unfamiliarity;
- Loss of research trajectory after completion of MPharm;
- Unsupportive employers where research not seen as basic role requirement

Please identify which you think are the most significant factors and those that a research strategy could have the greatest impact upon and why.

1. Change culture amongst practitioners. Retain enthusiasm engendered at university for research or from a fellowship, provide incentives, develop understanding of research (remove fear of research, start at undergraduate level) develop preregistration projects and increase profile of preregistration competition, instill pride in award, re-define “research and science” - scientists on the high street, research is part of science.

Need to engage hospital pharmacists more in NHS clinical trials. There is a need to address the contractual arrangements as, unlike their counterparts in other health professions, pharmacists are rarely engaged in clinical research and where they are integral to clinical research within a Trust, separate research contracts are required. There is a need for single contracts for integrated care teams which would certainly enhance pharmacist engagement with research and interprofessional relationships.

2. Make most of/and or build current infrastructure to facilitate R&D. Use it to encourage, lead, coach.

3. Sell the research to the profession and professional body. Contractual arrangements – research could be negotiated as part of Community Pharmacy service. Research strategy must be attractive to profession. We need greater awareness from stakeholders and individuals of how research can help them. They must speculate to accumulate.

Career pathways for research for clinical pharmacists and advanced practitioners.

4. Understand levers and barriers to research. Conduct a critical appraisal of the existing literature, and commission new research to address gaps. Although research has been done in this area - how good is it and how generalisable, across different settings and changing climates?

Please list the pros and cons of the current models you are aware of that aim to engage or support pharmacists in research.

	Pros	Cons
Enterprise scheme/Galen Linstead	Create cadre of researchers	Enterprise - No longer running Insufficient funding Did not support long-term posts. Galen/Linstead – small scale
Bursaries	Protected time	Insufficient applicants Poor applicants Lack of good supervision
Local primary care (pharmacy) research networks	Hull, Aberdeen, Manchester Pharmacy networks all worked well and generated good projects	Not always linked to pharmacy Need pharmacy champions Lack of funding for sustainability
UK Clinical Research Network (UKCRN)	Good opportunity	Pharmacy not seen as part of NHS Not engaged Limited pharmacy engagement Lack of understanding
Regional Development Agency		Downstream – economic investment
Academic Health Centres – being set-up (n=5)	Specifically include all health care Academics and Practices	Not universal

Do you think overall that current support networks are effective?

Not for pharmacy. Networks are not a substitute for a professionally led infrastructure.

So many different organisations with no clear leadership for academic workforce or research at practitioner level.

What support model would be the most effective?

One that aligns with existing resources so that pharmacy does not become isolated in research as it has on occasion in practice

There needs to be encouragement to use resources such as NIHR Research Design Service although some pharmacists may need some earlier stage help than this.

A central hub with 4 regional units linked to Strategic Health Authorities which provides a steer on research principles.

Support local coordination.

One that mirrors Medical Education England which has the pharmacist posts for teaching and learning and could add in Research & Development.

There are support units for research around the UK, former Research and Development Support Units, or whatever they are called now – a problem is that these units offer advice on specifics of research - do pharmacists know they are there? Can non Higher Education Institute (HEI) NHS staff access?

Some Local Clinical Research Networks already have consultant pharmacists in post so our National Research Strategy should aim to have pharmacist representation in every network and for these pharmacists to form a network to engage with academic centres and primary care pharmacists to encourage practice research in community pharmacy.

One centre in each country – linked and coordinating research activity for pharmacy.

Do you think there is a need for a National Register (registries) of pharmacists interested in research?

There was mixed response to this question. Participants at the workshop felt this raised more questions: What sort of interest, any special topic?

What sort of information, pharmacies or pharmacists? What would the purpose be? Could have local registers based on hubs? Could identify role needs?

However, external contributors stated that it would align pharmacy with medicine - in having 'research ready practitioners' in the local community. Practitioners would require specific accredited training to qualify for this status like the scheme run by the Royal College of General Practitioners (RCGP).

What role should undergraduate education play in raising interest in research and in teaching research skills?

Range of research projects should be provided – possibly aligned with key priorities for pharmacy.

Do science projects build health services research capacity?

Should all undergraduates do a pharmacy practice research project?

Research must be a distinct taught discipline – understand that the general principles of research cross basic sciences and applied health services research – just that the tools are different.

Reinforce the value of research in practice - how all health professions use it. Students must be enthused.

Role models in HEIs with limited research knowledge – how to build this capacity?

Should a research project be part of the preregistration year – so that pharmacists can apply theoretical knowledge to the work environment?

Should consideration be given to helping new schools of pharmacy to build research capacity?

Research active pharmacy academics are difficult to recruit, new schools find it hardest to recruit. To develop a pharmacy research culture research must be integrated into all schools, and all (not just new schools) should be supported.

Local HEIs will have different priorities (although some felt that these should align with national priorities).

Bring every school up to a minimal level of research expertise/capacity - this should be part of the accreditation criteria. If so there would be a need to define 'minimal level'.

There may also be a need to engage centres of excellence.

Participants were asked to consider the following schemes and suggestions and to comment.

a) Pump Primed Grant schemes for pharmacists to support post graduation research education (similar to the Enterprise Scheme which ran from 1990 – 2000). Consideration could be given to two different schemes: i) one for practitioners and ii) one for those wishing to move into academia.

We would welcome the re-introduction of the Department of Health (DH) Enterprise Scheme. However, no need for 2 schemes.

Would also welcome part-time/flexible arrangements, to encourage people to retain practitioner roots but still engage with research.

May also be important to set up contractual arrangements with employers so that they agree to release pharmacists for research development and training.

b) Pump Primed National Mentoring or Coaching Scheme(s). National virtual mentoring scheme with reimbursement for participating institutes.

Good idea if existing academics need reimbursement at FEC.

OR:

Short 'one week' research courses for generic research and specialist areas;

Modular MRes for pharmacists;

The National collaboration of Scottish MSc in Primary Care/Open University are models that could be adapted for pharmacy.

c) Basic nationally agreed research advice and guidance materials

Pharmacy Practice Research Centre bulletins were exemplars (now ceased);

Tie into Social Research Association courses/fund attendance;

Pharmaceutical Press Book[§] – primer for research.

Who do you think should fund research or support resources in this area?

DH – Yes! Yes! Very Yes Agreed!

Ring fenced funding in NIHR for pharmacy posts similar to Walport fellowships and lectureships (Medics only).

Academic Clinical Fellowships (75% clinical, 25% research leading to PhD) for leaders and role models – UKCPA??

The new professional body.

Pharmacy research should receive more funding from disease specific organisations with increased recognition of our role in long-term disease arrangements.

Explicit requirement for pharmacy representation in UK Clinical Research Network.

1.2 Summary

As can be seen, a considerable number of areas were identified in the workshop – the overarching themes were notably, i) continued need to build a high quality academic/research workforce ii) need to increase research capacity and knowledge in practitioner workforce iii) lack of support infrastructures for both.

It could be argued that the limited number of large scale research trials in pharmacy may, in part, be due to the fact that pharmacy has a comparatively small academic and research workforce. However it must be acknowledged that the quality of applications to large funders requires strengthening.

Building a research workforce of quality across all sectors is central to the profession's place at the table of clinical excellence, and ultimately patient outcomes. The lack of a structured career pathway either into research, or combined clinical/research posts for pharmacists sets it apart from other key professions such as medicine and nursing. However, researchers and academics are the main role models for undergraduates and therefore have a responsibility for future professional education and ultimately professional practice. The problems associated with recruitment and retention of a high quality academic and research workforce for pharmacy are not new. Previous initiatives to build the academic workforce through, for example, the Pharmacy Practice Enterprise Scheme were highly successful, with those who were part of the scheme now amongst key research leaders in pharmacy. These schemes are no longer running. The results of the workshop, and indeed general discourse on workforce, reinforce the demonstrable need for a return of such schemes.

The application of research knowledge in clinical decisions and associated models of care delivery should impact on patient outcomes and quality of care and form the underlying impetus for driving greater engagement with research among practitioners, irrespective of sector. The White Paper for pharmacy states that there

[§] Conducting your pharmacy practice project step by step guide, Felicity J Smith, University of London 2005. ISBN 9780853696063

is a need for pragmatic easily measurable metrics or indices that will serve to demonstrate the quality and outcomes of pharmacy services provision. These should undoubtedly be underpinned by research. The workshop highlights that future contractual arrangements in community pharmacy will increasingly rely on service evaluations against such indices. Negotiations for the delivery of NHS services with commissioners and other health colleagues will rely on knowledge of research on patient outcomes.

For hospital and clinical pharmacists there is a need for greater involvement in NHS clinical drug trials, with pharmacists seen as an integral part of the central research team. This would certainly enhance pharmacist engagement with research and interprofessional relationships and raises the issue of the role of research in advanced clinical practitioners and their involvement.

The place of research in practice starts with undergraduate education. In a curriculum already under pressure to incorporate a greater clinical component, the government has stated that it wishes to see pilots for integrating the degree course with preregistration training in place by October 2010. This is being undertaken to ensure that there is meaningful clinical context in pharmacy and central to this is sufficient capacity in the academic workforce. Workshop participants have introduced the question of where research fits with current and future education and preregistration.

In terms of infrastructure, once again initiatives to provide central research information (Pharmacy Practice Research Centre at the DH) are no longer operational and current support networks do not appear to be universally effective. Issues with linking practice, and practitioners with HEIs, have been identified. The need for dissemination of relevant and accessible research findings has been highlighted.

At a deeper level professional and cultural issues have been identified together with the complexity surrounding

the commercial retail environment of community pharmacy.

To meet the aspirations of the White Paper in terms of underpinning the evidence base for care delivery, the profession needs to meet the ideals of:

A quality workforce of pharmacy academics, leading quality and innovative research in medicines and in medicines management; and,

A clinical workforce engaged in research either in the conduct or in the use of evidence in every day practice.

The workshop participants have provided ideas for both research areas where knowledge gaps apply and how these ideas could be achieved, some are focused below:

Research Areas:

- How is research taught at undergraduate level – what place does research have in the curriculum?
- What impact do research projects have on student appreciation of research?
- Evaluation of student research projects and contribution to priorities for pharmacy practice research?
- How can research be linked with integrated undergraduate/preregistration pilots as outlined in the White Paper?
- What is the place of research in the contractual framework for pharmacy?
- What are the barriers and levers for pharmacists across different sectors?
- Existing Networks – why are some effective and some not?
- Should research play a key role in the career progression of advanced practitioners?

Support Infrastructure:

- There is a need for the return of DH/NIHR Fellowship scheme – flexible/part-time academic clinical fellowships for pharmacists.
- Improved link between HEIs and practice.

- Funded specialist research courses using existing successful models in partnership.
- Central research hubs – research support – linked and coordinated across all 4 countries – linking into existing resources and ensuring that pharmacy does not sit in a knowledge silo.
- There is a need to improve dissemination of research findings to practitioners, this should be a key concern for HEIs. Researchers and research units also have a key role in improving access at a local and national level.

It is clear that both research and a supporting infrastructure are needed to address the barriers associated with workforce and engagement with research. Responsibility for funding must lie with the Department of Health in resourcing its policy aspirations, with the regulator for pharmacy education and with the profession and its leaders for professional development and practice.

To take this forward, however, investment is required to build research capacity across the workforce. Workforce skills and professional culture will have to change to meet the changing demands of the profession. A stronger strategic approach and more cohesive working between HEIs is important. Successful applicants to large scale funders such as the NIHR tend to arise from collaborative initiatives.

2. Management of Long-Term Conditions (Chronic Disease Management)

The terms management of Long Term Conditions (LTCs) and Chronic Disease Management are used by different countries of the UK. Please note that for the purposes of this workshop, the terms 'management of long-term conditions' and 'chronic disease management' are used interchangeably.

Chronic disease management comprises any medical or pharmaceutical

intervention designed to improve both outcomes for the patient and cost effectiveness. It recognises that a systematic approach is an optimal and cost-effective way of providing healthcare.

The place of experts in medicines in the care management pathway of patients with LTCs may be obvious to those with the expertise, but robust UK based empirical evidence indicating that intervention by pharmacists improves patient outcomes (notably in the long term) is patchy. Large scale Randomised Control Trials (RCTs) are uncommon and current practice tends to rely on findings from the international research community and small scale, UK based qualitative research. This research, although interesting, does little to convince other healthcare professionals and service commissioners of the value of pharmacists in mainstream healthcare.

An estimated two thirds of current NHS activity and 80% of costs relate to those with the highest needs associated with long term conditions. In addition, 80% of all GP consultations relate to those patients with a long-term condition. Due to an ageing population, the incidence of long-term conditions within the general adult population is expected to double over the next 25 years. Without effective preventative intervention in some of the major causes of LTCs (obesity, smoking, excess alcohol consumption) to reduce incidence of some conditions, and adequate health personnel resources to meet the needs of those newly diagnosed, the health system as we know it is in danger of being overwhelmed. The preparatory work of distributing workload among a variety of health professionals by diversifying and enhancing key roles outside of medicine could go some way in mitigating the needs of increasing numbers of patients diagnosed with LTCs. However, evidence that effective intervention by these professionals improves outcomes in terms of key clinical indicators, or quality of life measures, is critical to this solution. In the short term, the cost of such interventions must also be proven to represent value for money.

Pharmaceutical management of patients with a chronic condition for which there is

no cure, and the concomitant management of associated symptoms, co-morbid conditions, adverse effects and reporting mechanisms for these, is challenging. Patients often rely on the expert help of several healthcare professionals working together. Integrating pharmacists into the mainstream care pathways for these patients will require evidence that this will improve patient outcomes, be sustainable and represent value for money.

2.1 Workshop Outcomes

Do you think that the current evidence base on pharmacist intervention in the care of patients with Long Term Conditions is adequate to inform clinical decision makers and commissioners of health services?

Assuming that 'pharmacist intervention' includes diagnostic/referral/screening/etc then the answer is very little in the UK. There is limited evidence from Australia, Canada and USA but models of care within these countries are different. Are the studies therefore transferable? – are there lessons to be learnt?

On reflection, we acknowledge that there is some evidence – but it's patchy – and part of the problem is that we don't always know what evidence exists – because it doesn't get into the policy arena. Do we need a database of studies?

The National Research Register (NRR) used to capture studies but do not think this is in place any more.

Where is the evidence published? Are small scale research projects published or disseminated?

Certainly not in terms of economic evaluations. Cost of providing services through pharmacy model vs. other professions/providers. Neither (we think) has research on long-term patient outcomes been undertaken (very limited RCTs).

Do you think that a meta analysis of published research would be of benefit? If so, in which areas? And should this be UK based, national or international?

No. Not sufficient numbers of RCTs to perform a meta-analysis on. Possibly a systematic review on selected areas such as diabetes/management of lipids.

Maybe international but identifying countries with similar models of care.

A research database for pharmacy listing ongoing and completed research would be useful.

1. *a systematic review or an ongoing database may be more useful;*
2. *most important thing must be ongoing not a one-off;*
3. *should include all studies – searchable by keyword – e.g. database;*
4. *should do international – but allow UK studies to be identified e.g., by keyword;*
5. *star rating for quality? But controversial!!!! Should include unpublished data?*

Please select 5 priority areas that specifically need addressing within the strategy or that would contribute to national health policies and strengthen the role of pharmacy across the UK?

Found it difficult to prioritise. Partly because we would need more info on prevalence of conditions/potential harm etc, partly because so many interventions are cross cutting and apply to more than one condition.

Newly diagnosed (<12 months)
 - *2 demographic areas*
Long term studies
Compliance/adherence
Best practice vs. control

1st prescribing services
Asthma (adults & children)
Diabetes Management
Chronic Obstructive Pulmonary Disease (COPD)/Chronic

*Obstructive Airways Disease
(COAD)
Hypertension
Lipid management*

Monitoring ADRs.

Continuity of care transfer across healthcare boundaries in relation to medicines.

There is a need to look at whole systems not just at pharmacy as a silo area - whole economy. We acknowledge that these are bigger than long term conditions, but should also consider:

- *Self management and education;*
- *Patient adherence;*
- *Supporting patient decisions/patient empowerment; and,*
- *Models of care/structural issues.*

Clinical areas & populations:

- *Mental health++ (in addition the problems of physical health with co-existing mental health problems).*
- *Palliative care – (children and adults).*
- *Heart disease in adults.++*
- *Chronic kidney disease (adults and children).*
- *Diabetes in adults.++*
- *Hypertension.++*
- *Chronic pain management (adults and children).*
- *Older people.*

Areas	Major policy area
<i>Monitoring ADRs</i>	<i>Patient safety</i>
<i>Continuity of care across healthcare sectors</i>	<i>Medicines reconciliation Skill mix</i>
<i>Self management</i>	<i>Expert patients Improving patient access Deregulation Patient Safety</i>
<i>Supporting patient decision making</i>	<i>Patient choice</i>

Big need to undertake RCTs and full economic evaluations in these key areas.

Should research in the priority areas be carried out as a single UK based project or at national/local/regional level over several connected smaller projects or alternative model?

Local – regional – national

National: Ealing hospital / PCT

Small pilot leading to national study.

Incremental steps but step wise funding available. Example – Ealing hospital – then Surrey hospitals then national roll out.

Could consider research in all four countries – same project, same design – comparative outcomes.

Depends on project/objectives – e.g., scoping vs. evaluation. Scoping – can be single site.

Evaluation – for evaluation studies want multi-site – across UK – representative sites – but all using same protocol - would have a lot more strength.

Should consideration be given to dedicated research across professions that encourages collaboration among different health and social care professionals?

Yes! Health economists, statisticians, current stakeholders (PCTs, Health Boards, chief pharmacists, patient groups, wider pharmacy ‘church’, pharmacy bodies – such as Pharmaceutical Services Negotiating Committee [PSNC]).

National research database for pharmacy to inform each other. Central co-ordinator for research required.

A very big YES! Multidisciplinary should be the norm.

Better chance of funding if collaborative - shows pharmacy not doing its own thing outside other professions – also avoids duplication and other professions taking the lead.

We strongly support multidisciplinary research!!! - especially in long-term conditions.

Please state who else you think could be potential collaborators for large scale pharmacy practice research.

Depends on project and intervention, if looking at, for example, discharge of newly diagnosed then participants from secondary, primary care. If children then ?? paediatrician.

All stakeholders as relevant to their project – should include patients/public where relevant/practical.

What about cross sector research?

Yes – important that there is professional contribution by pharmacists in all sectors.

In general though this is important but depends on the research study.

We weren't sure what 'cross sector' meant, e.g., primary/secondary care; health/social care.

Do you think that there should be a focus on research that demonstrates the multi-dimensional attributes of pharmacists' specialised knowledge across scientific and clinical disciplines (science into practice)?

Difficulties understanding question.

No! The study outlined would use all pharmacists' science to practice skills.

We felt that we should prioritise research based on patient need rather than based on justifying our profession.

Our scientific/clinical knowledge will come out of this...

Over what time frame would you anticipate completion of each priority research area?

Long-term studies. 2-3 years minimum.

The Medical Research Council (MRC) recommends exploratory studies; these would probably be undertaken in 1-2 years. Larger full scale RCTs could take much longer, 4-5 years.

What ball park figure do you think each research area would cost to achieve results in the top 5 research areas over this period?

In the region of £10 million per annum depending on size of study and length.

It would be impossible to say BUT lets consider that for research priorities (5) we assume a mixture of early stage exploratory studies across multiple sites then 5 RCTs – we are probably talking about £10-15 million over 5 years.

What additional resources (other than core research funding) would be required to deliver research around long term conditions?

- Training grants.
- IT.
- Mentoring support program.
- Research networks – include research support, e.g., ethics/R&D approvals and statistical support.
- Links to patient groups to facilitate patient involvement.
- Pharmacy specific or multidisciplinary.
- Building research capacity/training in research – incentives for developing research.
- Database of previous relevant research so we build on what's gone before.
- Setting up research units – practice research sites in practice setting.
- Partnerships/support from employers.
- Funds needed for collaborative & strategic planning.
- Support in grant application writing – it's so daunting.

Who do you think should fund research into pharmacist intervention in Long Term Conditions/Chronic Disease Management?

- DH (NIHR)
- "anyone who will pay" (!)
- NHS

- Research councils
- Industry
- Pharmacy profession
- Charities – disease specific

Please consider and identify other existing and potential funders in this area

Pilot via Research for Patient Benefit (RfPB)→ MRC.

Patient reported outcome measures should be included as a measure.

Project ideas need to be worked up into a proposal.

Participants were asked for additional comments

Prioritising clinical conditions very difficult because:

- Many interventions span many or all clinical conditions
- Would need to know prevalence problems for each clinical condition
- Very difficult to say any one area is not important!
- How do we define “priority” – is it about priority for pharmacists or priority for the disease/patient?
- Need to know more about policy in terms of where to target for greatest impact
- Role of pharmacist is not disease specific!

Key Points:

- *We felt that overall we need to focus on the robust evaluation of interventions to improve patient care in LTCs. Not condition-specific. Need to include economic consequences as well as clinical outcomes.*
- *Any evidence has to build on existing evidence – therefore need to build database of this to aid retrieval/dissemination.*

A strategy could focus on research at all levels – down to co-ordinating undergraduate projects on a common theme to fit a bigger picture.

2.2 Summary

Prioritising clinical areas and interventions across such a broad field is a difficult exercise to undertake. For pharmacy, patients with chronic long-term conditions managed almost entirely on medication, means that almost all clinical areas could theoretically be the focus of research.

The need to match the research aspirations of pharmacy to those of the wider health agenda is seen to be critical and at present little is known about the true place of pharmacy practice research in this arena. How research priorities in individual schools of pharmacy (and other departments) coalesce with others to build the evidence picture is unclear. However, if pharmacy is to take its place along side mainstream healthcare, a coordinated approach to building evidence by pharmacists and the academic community is critical. Interestingly the place of the preregistration research project was discussed and questions were raised around how they contribute to the evidence base for long term conditions. Although these projects are small and, to some extent, a first introduction to research for undergraduates, their contribution in terms of exploratory studies may be valuable and raises the question if indeed they should be guided by key priorities for pharmacy.

What is clear is that despite the political and professional calls for pharmacists to lead in this area, there is a lack of existing knowledge to support transfer of care from doctors to pharmacists. Notably there are very few large scale RCTs in the UK which look at the long term outcomes of patients and the economics of a pharmacist led care delivery model.

Workshop participants acknowledged that some exploratory work and small scale qualitative studies have been conducted and that future research should aim to build on these foundations. Systematic reviews would need to be undertaken as a preliminary starting point and this should be broader than a UK based search.

The concept of a central research database for ongoing research in pharmacy practice was in principle welcomed but

consideration must be given to the resources required to support this and the need to link into existing resources to ensure that research does not sit in isolation.

The long term conditions identified as priorities for research were: heart disease, diabetes, hypertension, mental health and asthma/chronic obstructive airways/pulmonary disease.

In addition, palliative care, chronic kidney disease and chronic pain management were highlighted as important but not priority areas. Research is needed in particular for newly diagnosed patients, patients discharged back into the community and those patients under the care of pharmacist prescribing services (comparative care models). Outcome measures were identified as adherence/compliance, monitoring/managing adverse reactions and patients' self management.

These priorities mostly align with wider policy aims of patient safety, self management and continuity of care and are commensurate with many of the priority areas highlighted in the White Paper. Mindful of the need to bring pharmacy and the research knowledge that underpins it to the attention of policy makers and other professions, the research should be multidisciplinary where appropriate and across multiple sites if possible.

Research Areas: key points

- There needs to be some preliminary systematic reviews.
- Potential research questions should focus around;
 - Support for newly diagnosed patients;
 - Support for patients with long term conditions at the point of discharge; and,
 - Pharmacist prescribing services in terms of patient outcomes.
- Large scale RCTs should build on existing exploratory work; and,

- Outcomes should focus on patient outcomes (clinical, quality of life etc) and cost of service delivery.

Support Infrastructure:

- There should be a centralised searchable research database of ongoing research.
- There needs to be funding for the identified priority clinical areas. This is essential and participants felt that this should be funded, at least in part, by the Departments of Health.
- Collaborative funding to support exploratory and pilot work** in multiple sites should be investigated. This work may then be used as leverage for larger funding applications for full scale RCTs.

Building of a robust evidence base to underpin clinical and commissioning decisions will not happen overnight. Participants have highlighted that it may take some time to reap the rewards of substantial investment made now. Without sustained investment at least in the short term (1-5 years), medicine could maintain its stronghold over medicines management for patients with long-term conditions. This is underpinned by strong unchallenged evidence from other professions, such as nursing, that may well take on greater roles in the management of these patients.

With increasingly limited resources for investment in research, competition for funding among professions will only increase. The government of the UK must consider providing ring fenced funding to help support the research infrastructure that will deliver its political ideals for pharmacy. Pharmacists and practice research academics however, must work together to both ensure there is representation on key funding panels and to build on the number and quality of applications for large funding bodies. Competition is very strong for NIHR and MRC funding. Pharmacists must rise to the challenge to ensure sustained access to a wide range of sources of funds.

** E.g., tripartite Collaborations with the voluntary sector who represent patients with specific diseases, the DH and pharmacy organisations around adherence/compliance and newly diagnosed patients.

3. Public Health

It is a disturbing fact that Western civilization, which claims to have achieved the highest standard of health in history, finds itself compelled to spend ever-increasing sums for the control of disease.

René Dubos (1987)

Participants were asked to consider areas that fall within the three key domains:

1. Health Protection & Prevention

- Communicable disease control;
- Disease and injury prevention;
- Environmental health; and,
- Emergency planning.

2. Health & Social Care

- Quality;
- Clinical effectiveness;
- Efficiency;
- Service planning;
- Audit and evaluation; and,
- Clinical governance.

3. Health improvement

- Employment;
- Housing;
- Family/community;
- Education;
- Inequalities/exclusion; and,
- Lifestyle advice.

Priority areas from individual countries of the UK around public health include over-arching themes around:

- Immunisation – needs population base register
- Infectious Diseases
- Microbiology and Infection Control
- Screening
- Travel Advice
- Socio-Economic, Cultural and Environmental Conditions
- Strengthening Local Public Health Delivery
- Health Inequalities
- Patient Safety
- Lifestyle Choices

3.1 Workshop Outcomes

Do you think that the current evidence base on pharmacist intervention in relation to public health is adequate across the UK to inform clinical decision makers and commissioners of health services?

No – no real evidence but then there is no real evidence for profession specific intervention - just data on cessation rates and brief interventions etc.

Really we need to know if it is cost effective to pay pharmacists to deliver these services.

Do companies such as Boots/Lloyds promote evidence or best practice on their websites? Do they use research? Do they invest in research?

Very little around obesity and pharmacy except maybe promotion of products.

Public health research presents huge design and methodological issues not least because any evaluation needs to take into the reality and complexity of the 'social world' organisational structures, populations and individuals that interact at many levels.

How much has been done around screening?

- *Vascular? (No population base) in terms of the large target population the government has set.*
- *Have the UK National Screening Committee discussed the role of pharmacy in screening? They aim to ensure that screening programmes do more good than harm (worried well) at a reasonable cost – any research in this area should consider this.*
- *Chlamydia in terms of impact on reducing Sexually Transmitted Infections (STIs), promoting safe sexual behaviours.*
- *Genetic screening.*

With the exception of smoking cessation, needle exchange, emergency

contraception and Chlamydia testing, the general answer is "no".

Do you think that a meta analysis of published research would be of benefit? If so, in which domains?

International – for the most part – split by specific disease/risk area.

Build upon existing studies.

UK primarily, but overseas results should also be considered.

Systematic review possibly – Safety.

Communicable Disease Control.

Lifestyle advice.

Disease and Injury prevention.

Education.

Where there is enough research to use, but often there isn't. Weight management would be one area where there is scope for such meta analysis.

What areas should be included as priorities for pharmacy practice research?

- **Safety.**
- *Infectious disease – first point of presentation with minor symptoms (how often).*
- *Gastro enteritis.*
- *Reporting.*
- *Children's medicines.*
- *Over-The-Counter (OTC) – no evidence base or use by public.*
- **Screening** – *vascular (diabetes, heart disease & stroke – wider programme of screening of cardiovascular risk), pregnancy testing, bowel (prostate specific antigen - PSA), genetics, fertility.*
- *This should fit with national priorities – no national programme for PSA/bowel – reason for this – risks outweigh benefits.*
- *Adequate health service support should support screening process.*
- *Travel advice – market research? Sun screening?*

- *Linking services between multiple providers - wider public health agenda's (data).*
- **Inequalities** – *deprivation payment for private practice difficult to reach communities.*
- **MUR** – *does it work? What is the long term impact of these, has there been research on who has undergone one? Who is benefiting from these?*
- **Nutrition.**
- **Sexual Health.**
 - *Oral contraception*
 - *Condoms*
 - *Pregnancy tests*
 - *Chlamydia*
 - *Impact on national figures*
- **Smoking Cessation** – *long-term outcomes need to be measured.*
- **Medicines and medicine safety knowledge.**
- **Alcohol screening & brief intervention** *there is a large amount of evidence in GP settings. Small studies in pharmacy – with positive outcomes – large scale RCT needed.*

Obviously the public health issues are widely shared with other professions – how do services link? Maybe we need to do some joint work?

Contribution to health through pharmacy centres of excellence - more range of services, research to underpin this.

Do you think there are distinct priorities for different countries in the UK?

Perhaps ethnic minority variations.

Scarcity of service provision/rurality.

? No prescription charge – Wales/Scotland – what is the impact on public's use of pharmacy?

Top up issue – access to medicines – ?different policies.

Largely the same in terms of public health. Maybe greater focus on specific issues in certain countries but think research should focus on common issues – maybe same research across different countries on common intervention to learn from best practice would be good.

Should research in these areas be carried out as a single UK based project or at national/local/regional level over several connected smaller projects?

Large studies are what are needed but based around small exploratory research already undertaken.

We prefer large UK based studies for our five priorities.

Are there any patient groups or populations on which the research for public health should focus?

Deprived communities (housing estates: e.g. Welsh valleys, East Glasgow).

Value of anonymity – very difficult for pharmacists to engage in this research – no clinical care role in this area. Robust research with any population would have to be done in partnership with others.

Older people, teenagers (sexual health).

All groups – e.g., STI, contraception, for young people. The key is that pharmacy is well placed to access hard to reach groups, e.g. in deprived areas, or young women. That is pharmacy's Unique Selling Point, in addition to its expertise in medicines.

Should collaborative research be a priority?

Yes. Pharmacy is part of the team.

Too much small scale research treating pharmacy as separate from other providers – maybe this is the problem!

Please state who else you think could be potential collaborators for large scale pharmacy practice research.

- *Psychologists*
- *GPs*
- *Ethics & Law*
- *Communication*
- *Public Health Doctor*
- *Health Economists*
- *Nurses*
- *Market Researcher*

- *Patients*
- *Social Worker*
- *Statisticians (Qualitative researchers)*
- *Other members of allied health professions, e.g. Occupational Therapists*

Other scientific, academic and professional groups. Greater involvement of community pharmacists themselves, and patients. NB. Should the pharmacists' contract be negotiated to contain provisions for payment to selected pharmacies to be 'research practices'?

What ball park figure do you think each research area would cost to achieve results in the top 5 research areas over this period?

Difficult to say – how long is a piece of string!

It would depend for exploratory work followed by RCTs across lets say three areas then probably looking at about £1.5 – £2 million each area?

Full economic costing?

Depends but lots if to have decent outputs from multiple sites.

What additional resources would be required to deliver research around public health?

Building/increasing research capacity (PhD: more research in undergraduate degree; follow through lectureship).

Research-network support/ bidding support.

Pharmacy Research Network.

In charge of Revalidation schemes.

Who do you think should fund research into pharmacist intervention in Public Health?

- *Primary Care Trusts/Health Boards*
- *Department of Health*
- *Community Pharmacists (via contract) – Reinvestment of reimbursement for scripts??*

- *The Government and any other source – the industry etc.*
- *Community pharmacy organisations/ representatives should be investing in their services for the outcome of patients.*

Please consider and identify other existing and potential funders in this area.

- *Research charities*
- *Medical Research Councils*
- *Pharmaceutical industry*
- *Pharmacy professional body/leaders*

3.2 Summary

Measuring the value of public health interventions in terms of patient outcomes is notoriously difficult even with well designed and large scale research projects. For pharmacists, public health services largely consist of advice and information services to a transient population of customers who may or may not return. Monitoring throughput and, to some extent, satisfaction with services are valuable but are inadequate measures of how effective a service is on the long term health of the public. Workshop participants acknowledged that there is research around smoking cessation services which has tangible measures of quit rates over time, relapses etc. However, in the case of preventative action through lifestyle advice it may only be possible to measure accessibility, patient and public perception, acceptance and, to some extent, the quality of services provided by the community pharmacy team and how much this costs to deliver compared with other providers is therefore essential.

Research Areas: key points:

- **Safety.** Investigating the public's use of OTC medicine for minor symptoms that may indicate signs of infection (e.g. gastro enteritis). Research that looks at reporting mechanisms etc. The use of children's medicines was also cited as a potential area for investigation.

- **Medicines and medicine safety knowledge.**
- **Economic evaluation of the cost of services.** Cost effectiveness of delivering services through community pharmacies should be a priority area.
- **Research around the place of pharmacy within the wider health team.** The role of pharmacists as seen by other health professionals and how pharmacy led services fit with other health services in terms of processes such as referral mechanisms. This could involve the development of partner services piloted and evaluated in terms of patient outcomes, cost, joined up working.
- **Screening services.** Notably around vascular screening (diabetes, heart disease & stroke – wider programme of screening of cardiovascular risk). Other screening programmes were suggested but do not currently align with national screening programmes or wider health policy and therefore would be unlikely to attract funding.
- As with long term conditions, research should **build on small scale research** already undertaken. Future research should prepare for large scale trials.
- **MUR.** Does it work? What is the long term impact of these, has there been research on who has undergone one? Who is benefiting from these? Are they cost effective?
- **Sexual Health.** Chlamydia screening, contraception advice, provision of contraception, impact of services on national figures for sexually transmitted diseases, pregnancy and safe sexual behaviours.
- **Smoking Cessation.** Long term outcomes need to be measured. Economic evaluation needed.
- **Alcohol** abuse and brief intervention
- **Weight management.** The role of community pharmacy?
- A systematic review around each area should be undertaken.

Support Infrastructure:

- There needs to be pump priming funding for the identified priority areas. Participants felt that this should be funded, at least in part, by the Department of Health but that community pharmacy should also be investing.
- In line with the recommendations from other workshops, there is a need to build research capacity in community pharmacy. Research around public health will require participation of these pharmacists.
- Adequate wider health service support should support screening processes so that screening in pharmacies does not sit in isolation. This may have implications for patient/public safety.
- Collaboration between multiple parties has been cited as important. Local multi-disciplinary research networks should be utilised.

4. Self Care – Minor Ailments

In 2007, the public bought over 976 million packs of OTC medicines to treat themselves, compared with 873 million prescriptions^{††}.

57 million GP consultations a year (200,000 consultations per day) involve minor ailment discussion, 90% of which (51.4 million) are for minor ailments alone, equating to over an hour a day for every GP^s

Although most often associated with long term conditions and chronic disease management, the purpose of this workshop was to identify research priorities that seek to evaluate the impact of pharmacist intervention in **self care of minor ailments**. There is also an intention to introduce pharmacy based NHS services to relieve the burden on GPs through the Contractual Framework for Community Pharmacy. Currently however, there is little evidence of this

indeed, the updated Wanless Report makes no mention at all of pharmacy.

Building on the work of the devolved administrations in Scotland, Wales and Northern Ireland, the Government in England believes that through the White Paper for pharmacy, community pharmacies will:

- be appreciated and accepted by a much wider range of people as ‘natural’ local resource centres for their health and wellbeing, especially at times when other service providers are unavailable;
- be well integrated with other health and social care providers and will be part of a local network;
- build stronger local bonds with their customers by promoting a culture of greater health literacy for all – particularly for those who live in areas of greater social deprivation or where significant health inequalities persist;
- take on a community leadership role, providing positive action that makes a significant contribution to tackling the root causes of health inequalities, by considering wider health determinants, such as fuel poverty and benefits uptake and signposting.

These objectives represent the ideal placement of pharmacies in their local community. However, influencing the public to use Community Pharmacy may be an issue for consideration. Public surveys, including the one undertaken to inform the White Paper, found that only a small number of the general population visit a pharmacist for advice on a minor ailment (cough, cold etc). In addition, research on patient choices in Wales indicates that the recent policy development in Wales to abolish prescription charges may inhibit, or even counteract, the longer-standing policy aim to encourage users to visit the pharmacist instead of the GP to manage minor illness episodes (Hughes *et al*, 2008).

Self-care interventions vary considerably in their objectives, content, method of delivery, duration and target population. ‘To

^{††} Proprietary Association of Great Britain

talk of the effectiveness of 'self-care interventions' (or even of 'self-management education') is, therefore, misleading' (Coulter et al, 2006).

There are significant limitations in the evidence base for self-care interventions; the following areas have not been adequately evaluated:

- long term outcomes;
- cost-effectiveness;
- comparative effectiveness of different self-care strategies; and,
- the components of complex interventions which provide greatest benefit.

4.1 Workshop Outcomes

Participants were asked specific questions:

Do you think that the current evidence base on pharmacist intervention in self care (minor ailments) is adequate to inform clinical decision makers and commissioners of health services?

The general view was that research exists across professions on consumer/public behaviour in the treatment of minor ailments and purchase of OTC medicine but there is not enough evidence for the business case around self care and that evidence around pharmacists' intervention for minor ailments was inadequate.

There seems to be no collation of evidence of minor ailments schemes in the UK. There also does not appear to be any identification of significant minor ailments on which pharmacists could have significant impact.

Do you think that a meta analysis of published research in this area would be of benefit?

There is probably not enough data using particular designs to combine studies and undertake meta analysis - a systematic review would be better but this should include non-published data.

Look for evidence of improving health or improving cost effectiveness. Scoping of other data collection possibilities, e.g. look at obtaining data from NHS direct.

Tracking the research that exists from a number of sources – making a searchable index of research.

Please state what you consider to be priority areas of research in terms of pharmacist intervention in the treatment of minor ailments and encouraging self care?

What are the criteria for identifying priorities? Equality, volume, unmet need, inappropriate use, cost effectiveness, patient satisfaction.

Evaluation of consultation skills.

Consumer vs. patient – patients are people with particular health problems, consumers - perhaps those consulting with just minor ailments?

Defining what is meant by self care from patient, pharmacist and GP perspectives.

Evaluating different models of delivery of care – comparing cost and outcomes, for example, for GPs and pharmacists.

Research into triggers to seeking care for minor ailments.

Organisational research - how organisation of pharmacy impacts on care delivery. Commercial values vs. care values – talked about but is there any research in this area?

Are there any particular minor ailments that should be considered priority areas?

Ailments that appear to have highest impact on workload of high-cost services (GPs, A&Es) – e.g., biggest impact on health costs – absenteeism. This should be linked to national and local health priorities.

Looking at GP workload – what would they consider to be minor ailments?

Research into minor ailments with more serious underlying causes – when to refer?

Treating symptoms (e.g., diarrhoea) vs. treating a minor ailment which has a label (e.g., ringworm) – would rely on diagnostic skills so research may be needed on consultation/diagnostic skills.

Probably best to classify minor ailments into: Self limiting vs. recurring vs. long term conditions – could categorise ailments or drugs into these categories.

Are there any broader considerations that would be considered to be part of self care of minor ailments outside of symptom treatment?

Yes - pharmacovigilance – may be possible to use minor ailment schemes to explore this. The way the public use OTC medicines, problems etc.

Time taken, organisational structure of pharmacy and skill mix of workers will impact on the ability to widen pharmacists' role in this way – an area that really needs investigating.

Information about health promotion needs - pharmacists have a key role in this area.

Consumer/public health beliefs.

Quality of pharmacy minor ailments and advice services.

Epidemiology data (on minor ailments).

Skill mix within the pharmacy team.

Approaches to consultation – evaluating consultation skills.

From your identified priorities, are there any research areas that you think pharmacy could make a unique contribution to wider health policy?

Pharmacists are experts in medicines – importance of pharmacists' roles with regard to self care being highlighted in government white papers.

Building up pharmacists' role in terms of healthcare and pharmaceutical care.

The shape of the future community pharmacy – model re. self care provision.

Order in which people consult - GP, pharmacist, lay referral etc.

Are there any patient groups or populations on which the research strategy for self care should focus?

- *People with children.*
- *Older people.*
- *Groups who are most likely to misuse medication.*
- *Those on greater number of meds/chronic conditions.*

OR

- *Could go to preventative route, i.e., vascular risk assessment.*
- *Research needed on why certain groups don't use pharmacies – lay referral network.*

Do you think there are distinct priorities for different countries in the UK?

- *Don't feel there are material differences.*
- *Think it will be important to share good practice between four countries.*
- *It may depend on prevalence of particular conditions in each country.*
- *More likely to be different for different regions/PCTs Health Boards, rather than countries – difficult question to answer.*

Should research in priority areas be carried out as a single UK based project or at national/local/regional level over several connected smaller projects?

There is a need for quality research. Quality of pharmacy minor ailments advice – ensuring that sampling strategy includes different areas, urban/rural, class etc. – probably a national project.

Evaluation of the minor ailment schemes – national and/or regional – national might be able to better identify impact of such services.

Outcomes and benefits of minor ailment advice.

Should research focus on collaborative research among different health and social care professionals?

May be in areas such as multidisciplinary education, collaboration between GPs and pharmacists.

We need examples of good practice in collaboration of GPs with pharmacists – what lessons can be learnt from these examples.

Research should reflect what commissioners might commission for services that require collaboration then yes.

Yes, where appropriate – depends on research question.

Please state who else you think could be potential collaborators for large scale pharmacy practice research.

Multi-disciplinary, including:

- GPs and other health professionals (e.g., nurse)*
- Academics (including economists, sociologists, statisticians)*
- PCTs/SHAs/ health boards/CHP staff.*

Collaborations with different health professionals – GPs, health psychologists, health economists.

Different organisations/sectors – research networks, hospital trusts.

Approximately how much do you think research in each of your identified priority areas in self care would cost over a 4-5 year period?

About 2.4 million across priority areas.

Difficult to say – if research is done at a national level it is likely to be costly.

What additional resources (other than core research funding) would be required to deliver research around self care?

Supported funding for staff (i.e., to relieve staff to undertake research).

Possible payments to other health professionals.

Pharmacists (and staff) will need good support infrastructure.

Important to get a buy-in from PCTs/Health Boards at the start.

Additional 50% on top of total research funding. Developing pharmacy research network - requires a lot of resources to keep them going – perhaps needs funding from central government.

Who do you think should fund research into pharmacist intervention in self care?

Department of Health, pharmacists and pharmacist employers/organisations – need to contribute to develop a research area – investing in future.

Research Councils.

4.2 Summary

As with the participants in the workshop for long term conditions and public health, participants felt the current evidence base for pharmacist led minor ailments services is inadequate. There is a notable gap in knowledge around the business case for this service and what ailments pharmacists could have a particular impact upon.

Research Areas: key points

- Identification of ailments that appear to have the highest impact on workload of high-cost services (GPs, A&Es) – linked to national and local health priorities.*
- Evaluation of pharmacists' consultation / diagnostic skills in these areas.*

- Skill mix of community pharmacy staff – impact on the quality of care/advice given.
- A systematic review that includes non-published data (grey literature).
- Evaluation of different models of delivery of care – comparing cost and outcomes for example for GPs and pharmacists.
- Research into triggers to seeking care for minor ailments.
- Organisational research - how organisation of pharmacy impacts on care delivery. Commercial values vs. care values.

Support Infrastructure

- Large scale projects are needed – national and/or regional – to better identify impact of services.
- Funding for priority areas for projects across UK countries possibly in the short term from the DH.
- A searchable index of research. Includes examples of good practice in collaboration of GPs with pharmacists – what lessons can be learnt from these examples – UK wide.
- Pharmacists (and staff) will need good support infrastructure.
- Important to get a buy-in from commissioners at the start.
- Engagement with other health professionals.

Participants identified a robust support framework as essential for supporting research in community pharmacy. This is a common theme across all the workshops and is underpinned by the need to increase research capacity in the community. Although pharmacists are engaged in evaluating services, research around patient outcomes and economic evaluation of the provision of services will rely on collaboration with local commissioners and other health

professions. In the case of minor ailments, this is likely to mean general practitioners.

5. Integrating the Evidence into Practice

“Given the recognised importance of strong clinical and pharmacoeconomic evidence for pharmaceutical products before approval for formulary listing, it would be incongruous to expect policy decisions regarding the pharmacists’ role and reimbursement to be made in the absence of equally robust evidence.”

Simpson *et al*, 2001

Strategic research must also consider how research informs wider audiences (cross professional) and the integration into and of wider research based guidelines (e.g., Scottish Intercollegiate Guidelines Network [SIGN] & National Institute for Clinical Excellence [NICE])

The aim of this workshop was to identify a strategy or strategies that facilitate:

Embedding evidence based practice into the every day practice of pharmacists and their support staff.

Although evidence based practice is accepted as the gold standard for clinical care, it cannot always be assumed that implementation of evidence, or indeed, awareness of the evidence, whether this be seminal clinical research on patient outcomes or regional or national guidelines on care, is a natural consequence of the publication. Implementing the evidence base is an international and cross professional concern. Several research studies have called for strategies that address identified barriers in implementing the evidence and it would seem prudent for any strategy for research to incorporate this critical element in the use of existing and future evidence.

Facilitators/motivators

- Collaboration with other healthcare professionals;
- Environment where the professionals involved are not isolated;
- Strong professional support;
- Local mentorship & support;

- Stable and convincing evidence base;
- No increased or unfunded costs;
- Good leadership & established good systems for tracking guidance implementation;
- Personal interest in specialist area;
- Personal characteristics such as enthusiasm, propensity for clinical inquiry, and reflective practice.

Barriers

- Perception of customer expectations;
- Lack of private consultation space;
- Patient-related barriers such as:
 - (a) coming to terms with a diagnosis,
 - (b) challenges in changing behaviour,
 - (c) other personal barriers;
- Access to an appropriate evidence base resource;
- Organisational culture, policy directives and lack of resources.

5.1 Workshop Outcomes

Please specify any areas that are not listed that you think should be included and explain why (i.e., barriers/facilitators).

- *Lack of awareness of the evidence – is it published and if so is it where practitioners can see it? Should there be ways of cascading evidence to practitioners – meta-analysis – dealing with information overload – how to judge good quality research?*
- *What is the researcher’s role beyond publishing – furthermore, what is the role of funders in disseminating research findings?*
- *Do those who provide training/teaching such as Centre for Pharmacy Postgraduate Education (CPPE) have a responsibility to embed research at the heart of practice?*
- *Lack of participation of practitioners in research (there may be a perception by practitioners that most research is about collecting data) redefining professionalism and conduct and the place of research in routine practice.*

- *Engaging in applied research ‘seeding trials’ about standards/tools may help to instil a research culture.*
- *Supporting pharmacists to understand metrics and quality – incentive to business, research can be useful in terms of business. What is the likelihood of sharing this commercially sensitive data? Is the commercial environment a barrier in itself to research?*
- *Gradual change of an individuals practice using ethics and philosophy. Governance is required if pharmacy is to take forward new services (community pharmacy contract). Some practitioners can’t get involved where environment is not good quality.*
- *RCGP accreditation of research tools (to identify research ready: practices and practitioners) and also part of research networks.*
- *Leading horses to water! – Culture change may be needed across pharmacy!!*

Please identify which areas you think are the most significant.

Making research more accessible and central to practice, including facilities and support to be involved in research.

Beacon sites and champions – Local Employment Partnerships? Leading Edge practitioners/early adopters and harnessing those who are key individuals in a locality.

Prioritising 2 or 3 areas or services and generate evidence in broad policy context and involving other team members and put it in broader terms.

Patient safety–improvement– methodology.

Bin “Pharmacy Practice Research” and call it “Health Services Research”.

Please state what mechanisms you think are currently in place for integrating evidence into pharmacy practice and how effective you think they are.

Using improvement methodology (such as LEAN) – (test in one site, then three and five etc and roll it out) not widely used in pharmacy but is being used in Scotland - patient safety.

Access to Cochrane library – not impacting on pharmacy – why not?

Is it feasible to produce a 'BNF' type publication of new and emerging services??

Electronic newsletters – but how do you deal with information overload – who would produce this centrally? Is this something the professional body should produce?

SIGN/NICE guidelines – use journalists and commercial writers to produce summaries – think about podcasts etc. and 'idiots guide/top 10 tips'. 'How to treat patients' guidance supported by patient groups and based explicitly on evidence.

Peer support and talking about new services in groups – best practice sharing linking early and late adopters and using role models to disseminate best practice locally.

Can IT be harnessed better, clinical decision making algorithms? e.g. Stockley interaction alerts – prompts to use evidence.

Does pharmacy need something like the BMJ Evidence Centre? How will this be resourced? This could however be costly and would isolate pharmacy further – may be better to consider of existing resources like this need pharmacist input.

How could researchers improve or add to current mechanisms?

Researchers need to be closely involved with practitioners to hear about gaps – academics need to engage with

practitioners to understand the reality of conducting research in certain environments.

Engagement through integration in pathfinder projects^{‡‡} To roll out new evidence based services and practice in a sustainable way.

Make research an integral and explicit part of CPD and ongoing professional education. Professional Development Certificate records for students attending branches – encourage/acknowledge participation in research.

Integration of MPharm/preregistration – looking at the role of research and decision making in practice.

Need to address the trust issue between academics and practitioners – researchers go in take the data and run - seems elitist?

Mindful that evaluating integration of evidence into practice is a complex and time consuming process in itself, who should be responsible for facilitating and evaluating evidence into practice?

The regulator – CPD/revalidation – integral part of the standards especially for specialists – linking quality/safety agenda.

Improvement methodology – corporate ownership by Trusts etc.

Professional – formative assessment regulation of portfolios – feedback and punctual help.

Employers & Universities.

^{‡‡} DH – social enterprise pathfinder projects, set up to provide funding towards start up costs, plus wider support, e.g. business advice and training to help schemes across England lead the way in delivering innovative community services in health and social care fall into 3 broad categories; health and or social care professionals seeking to form a social enterprise to deliver services, multi agency partnerships involving statutory services and or voluntary or community groups and or commercial sector wishing to set up a social enterprise to provide services, existing social enterprises or third sector organisations looking to expand into health and social care.

Do you think that researchers should consider the practical implementation of recommendations/best practice /guidelines as part of their research design?

Yes, especially with RCTs, must think about utility but need to be flexible about what and how to implement as results come out.

Qualitative research first as part of RCTs should examine potential outcomes /recommendations.

Do you think there is a need for a National register (registries) of research evidence in pharmacy, particularly for Community Pharmacy?

We should not reinvent the wheel by starting a new review database, but contribute to national/international evidence as part of the NHS.

No - avoid duplication of existing RCT registers – pharmacy RCT should be on wider register.

Maybe yes to research in progress that fall outside the remit of existing registries.

Maybe one for funding bodies but RDInfo may already cover this.

The National Research Register (NRR) was created to provide a public, searchable listing of health research activity in the UK^{§§}. No longer there – now UK Clinical Research Network Study Portfolio – how engaged is pharmacy with this?

Evaluated best practice, summaries would be a better investment – what happens to this data?

^{§§} NRR'S original aims included:

- identifying unpublished research - particularly important to those undertaking systematic reviews
- providing early warning on research which may lead to important findings
- helping to improve the uptake and participation in clinical trials
- identifying and bringing together researchers between and across related areas of research
- helping to avoid unnecessary duplication in research

How will pharmacy engage with 'NHS Evidence' portal – is this for NHS employees only? Will it be fed by pharmacists and will they will able to have access to it?

What role should undergraduate education play in integrating evidence into practice?

Teaching evidence in undergraduate education, access and use of Cochrane library and critical appraisal skills - evidence based teaching.

Assumes that students are aware of veracity of evidence – can make a reasonable attempt at judging quality and reliability. Need to maintain knowledge through preregistration and into registration - a sense that skills gained in HEI lost in early years of practice.

What would the ideal model for integrating evidence into practice for pharmacy look like?

Knowledgeable students/prereg.

Evidence of part of professionalism.

Skills.

Alignment of policy underpinned by research and part of fitness to practice standards of pharmacists- Engaged and supportive stakeholders.

Balancing profession led research with health services research – different way of thinking.

*Essential - strong leadership supported by professional bodies as with RCGP accreditation scheme – research ready scheme.^{***}*

^{***} Research ready is an on line tool suitable for active and aspiring GP practices, providing a means of ensuring that practices engaged in research at any level, are aware of their responsibilities and have the ability and skills to carry these out. Training is provided and practices are accredited by the RCGP. All accredited practice details are held on a database.

Who do you think should fund research or support resources in this area?

- *The profession itself has a responsibility.*
- *Employers etc.*
- *Government in setting structure in place.*

5.2 Summary

As expected the outcomes from this workshop are similar to those from workshop one. Having looked at engaging pharmacists in research and discussed potential clinical areas for focused research, understanding how that evidence could and should be used in practice brings the workshops in a full circle. There is an indication that what research is out there for pharmacy may have little impact on practice. This has been linked with several factors including:

- access to useable/relevant research findings. Several suggestions have been made on how this could be improved and indications are that there should be a sustained effort from across the profession, notably, the availability of research summaries and alerts. How this would work in practice, and who would have responsibility, is currently outside the remit of this exercise.
- The need for local/national/regional research champions.
- The need to rebrand 'Pharmacy Practice Research' as 'Health Services Research'. The term may well be marginalising the research and alienating others to engage or read it.
- Research may be needed to understand how pharmacists currently access evidence and how they use research across different sectors.
- There may be a need to look at the role of research and decision making

in practice - Integration of MPharm/preregistration.

Ultimately there is an over arching need for pharmacists to realise the importance of evidence in clinical decision making along side first principle scientific knowledge, especially in care delivery and diagnostics. If pharmacists are to lead services their diagnostic skills, decision to treat or refer will require a foundation in evidence. Treatment initiated by pharmacists will rely on clinical evidence over and above knowledge of current medication treatments this is particularly pertinent to advanced practitioners and those with a specialist interest in a clinical area. Quality of care and, more importantly, patient safety rely on decision making based around current evidence and guidance, from pharmacy based research but also from other health professions. As with their medical and nursing colleagues, research should therefore form the basis of pharmacists' clinical decisions and should be part of everyday practice.

Understanding the current research around an area and to some extent the value of services demonstrated through research will certainly help pharmacists with negotiations with commissioners and other health professions. However, part of the problem may be that pharmacists themselves are not aware of, or are not convinced of the existence of a stable and convincing evidence base as we have seen in the earlier workshops.

Research may be needed to understand how (and indeed, if) pharmacists across different sectors and at different levels currently access research information, including where information on signposting to resources is obtained i.e. part of undergraduate education or through professional organisations. Some of the motivators for using the evidence base provide valuable insight into the role of local champions and role models and these should ideally be leading edge and advanced practitioners, local academics and the profession's leaders. Researchers themselves have an important role in considering dissemination as part of the design of the project, and working with others to produce practical guidelines that

translate the findings of the research into best practice.

Cultural and educational changes (undergraduate and postgraduate) may be needed to shift current thinking to integrate robust first principle scientific knowledge with a rather more fluid evidence base for practice.

Workshop Summaries

Emerging Research Areas

Integrating Research into Practice:

- How is research taught at undergraduate level – what place does research have in the curriculum?
- What impact do research projects have on student appreciation of research?
- Evaluation of student research projects and contribution to priorities for pharmacy practice research?
- How can research be linked with integrated undergraduate/preregistration pilots as outlined in the White Paper?
- What is the place of research in the contractual framework for pharmacy?
- What are the barriers and levers for pharmacists across different sectors to undertake research?
- Existing networks – why are some effective and some not?

Long Term Conditions:

- Preliminary systematic reviews are required.
- Potential research questions should focus on:
 - Support for newly diagnosed patients;
 - Support for patients with long term conditions at the point of discharge; and,
 - Pharmacist prescribing services in terms of patient outcomes.
- Large scale RCTs should build on existing exploratory work; and,
- Outcomes should focus on patient outcomes (clinical, quality of life, etc) and cost of service delivery.

Public Health:

- Potential research questions should focus on:
 - Safety - investigating the public's use of OTC medicine for minor symptoms;
 - The use of children's medicines;
 - The place of pharmacy within the wider health team;
 - Screening services, notably around vascular screening (diabetes, heart disease & stroke – wider programme of screening of cardiovascular risk); and,
 - MUR – does it work? What is the long term impact of these, has there been research on who has undergone one? Who is benefiting from these? Are they cost effective?
- Research should build on small scale research already undertaken. Future research should prepare for large scale trials.
- Sexual Health – Chlamydia screening, contraception advice, provision of contraception, impact of services on national figures for sexually transmitted diseases, pregnancy and safe sexual behaviours.
- Smoking Cessation - long term outcomes need to be measured. Economic evaluation needed.
- Weight management – the role of community pharmacy.
- A systematic review around each area should be undertaken.
- Economic evaluation of the cost of services. Cost effectiveness of delivering services through community pharmacies should be a priority area.

Minor Ailments:

- Potential research questions should focus around:
 - Identification of ailments that appear to have the highest impact on workload of high-cost services (GPs, A&Es) – linked to national and local health priorities;
 - Evaluation of pharmacists' consultation/diagnostic skills in these areas;
 - Older people and children identified as priority populations;

- Skill mix of community pharmacy staff – impact on the quality of care/advice given;
- A systematic review that includes non-published data (grey literature);
- Evaluation of different models of delivery of care – comparing cost and outcomes, for example, for GPs and pharmacists;
- Research into triggers to seeking care for minor ailments;
- Organisational research - how organisation of pharmacy impacts on care delivery. Commercial values vs. care values; and,
- Large scale projects are needed.

Integrating Evidence Into Practice

- Research may be needed to understand how pharmacists currently access evidence and how they use research across different sectors.
- A stronger infrastructure is essential.

Preliminary Funding

- Estimating the funding required to support the development of a strong evidence base in the UK is, as demonstrated, difficult to do within the confines of a workshop. However, it was felt that considerable funding would be needed, in order to be able to produce high quality research that follows MRC guidance for exploratory stages and RCTs. There is a strong call for funding for priority areas for projects in Long Term Conditions, Public Health and Minor Ailments across the UK countries and that funding should at least in part, come from the Departments of Health (of all 4 countries), as the authors of the various published documents that promote pharmacy practice.

Taking into consideration the thoughts of the workshop participants, this sum is likely to be equal to:

- *Long Term Conditions*
Across 3 - 5 priority areas @ 1.5 – 2 million each = £6 – 10 million over 5 years
- *Public Health*
Across 3 priority areas @ 1.5 – 2 million each = £6 million over 5 years
- *Self Care*
£2.5 million over 5 years.

Total = £14.5 – 22.5 million over 5 years.

- Investment in other areas of research that seek to advance pharmacy as a profession and which seeks to investigate current professional practice, and education (undergraduate and preregistration), would not be deemed to align with national health priorities. The research would be categorised as profession specific, and would therefore need to be funded by the profession's employers and leaders.

Preliminary Support Infrastructure

Funding is not the only requirement to support the development of pharmacy practice;

- A searchable index of research which includes examples of good practice in collaboration of GPs with pharmacists. What lessons can be learnt from these examples UK wide? This could be run through a 'centre of excellence' and funded by pharmacy organisations.
- There should be a central research hub for research support, linked and coordinated, across all 4 countries.

- Return of DH/NIHR Fellowship Scheme – flexible/part time academic clinical fellowships for pharmacists. Government should support the implementation of an additional 10 year period of support to build the academic and research workforce in the UK.
- Improved link between HEIs and practice, these could be facilitated through local research champions.
- Pharmacy leaders need to engage with other health professionals to identify collaborative research and educational needs (professional development and research support).
- Pharmacy practice research should be conducted as part of wider ‘Health Services Research’ and recognised as such.
- There may be a need to look at the role of research and decision making in practice and how this links with education at undergraduate level. Current work on the curriculum and future pilots for integrating MPharm with preregistration could be an area to consider for evaluating this.

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Useful websites:

Scottish Intercollegiate Guidelines Network - <http://www.sign.ac.uk/>

NICE - <http://www.nice.org.uk/Guidance/CG/Published>

<http://www.pagb.co.uk/information/selfcare.html>

Participating Organisations

Association British Pharmaceutical Industry

Boots UK, Pharmacy Development

Centre for Pharmacy Workforce Studies, University of Manchester

Centre for Prospective Regulation (CPR), Science and Technology Studies Unit,
Department of Sociology, University of York

Centre for Ethics in Medicine, University of Bristol

Centre for Medicines Safety & Service Quality, Department of Practice & Policy,
University of London

Department of General Practice and Primary Care, University of Aberdeen

Department of Education & Professional Studies, King's College London

Department of Health, Social Services & Public Safety, Northern Ireland

Department of Health, England

Department of Primary Care and Population Health, University College, London

Department of Pharmacy and Pharmacology, University of Bath

HRM Learning Board, King's College, London

National Public Health Service for Wales

National Pharmacy Association

NHS Greater Glasgow & Clyde

NHS Tayside

Hull & East Riding Pharmacy Research Network

Imperial College Healthcare NHS Trust

Kent and Medway NHS and Social Care Partnership Trust

Medway School of Pharmacy

Pharmaceutical Services Negotiating Committee

Royal Pharmaceutical Society of Great Britain

RPSGB, Scottish Pharmacy Board

School of Applied Sciences, University of Huddersfield

School of Healthcare, University of Leeds

School of Health & Life Sciences, Aston University

School of Life Sciences, University of Bradford

School of Pharmacy, De Montfort University

School of Pharmacy, Nottingham University

School of Pharmacy, Queen's University, Belfast

School of Pharmacy, University of Reading

School of Pharmacy, University of London

School of Pharmacy and Biomolecular Sciences, University of Brighton

School of Pharmacy and Biomolecular Sciences, University of Portsmouth

School of Pharmacy and Chemistry, Liverpool John Moores University

School of Pharmacy and Chemistry, Kingston University

School of Pharmacy and Health Sciences, Robert Gordon University

School of Pharmacy and Pharmaceutical Sciences, Manchester University

School of Pharmacy and Pharmaceutical Sciences, University of Central Lancashire

School of Medicine, Health Policy and Practice, University of East Anglia

Scottish Executive

St. John's College, Cambridge University

Strathclyde Institute of Pharmacy, University of Strathclyde

The College of Optometrists

The Proprietary Association of Great Britain

Welsh School of Pharmacy