Managing Change and Complexity in the NHS: Using a pragmatic transformation methodology to facilitate workforce redesign

"When it works it works…"

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A thesis submitted in partial fulfilment of the University's requirements for the Degree of Doctor of Philosophy by Published Work

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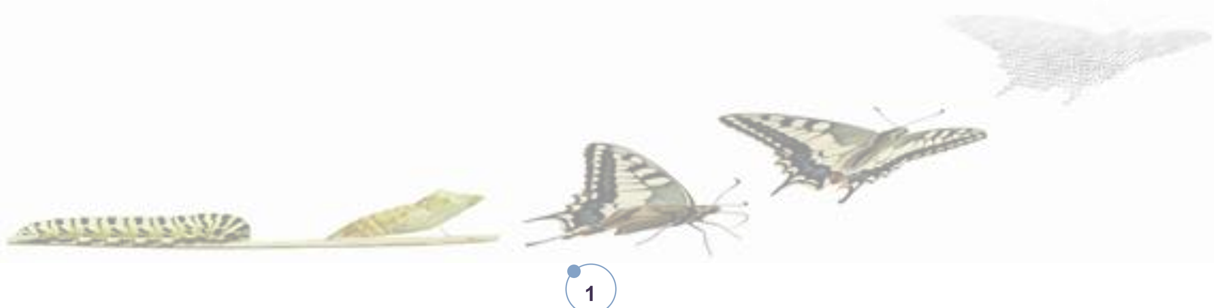

Contents

Abstract	4
Preface:	5
Contribution to knowledge of the PhD by published work	5
PhD objectives	6
The theme that links the publications	6
Narrative objectives	6
The Narrative:	
Publication List	8
Acknowledgements	9
List of Tables	10
List of Figures	10
List of Boxes	10
Prologue	11
Chapter 1: Transforming Urgent and Emergency Care	12
Introduction	12
Integrating NHS Systems	14
Workforce Transformation… *where it all began…*	15
Focus: Workforce transformation in urgent and emergency care	16
Urgent and Emergency Care - *A workforce on the brink…*	17
Workforce redesign: The Emergency Medicine Taskforce	18
Managing change in the NHS	22
Chapter 2: Methodology and Methods	25
Research Design: Evaluation and Publication: Proving and communicating the work	25
framework to guide the transition of NHS workforce concepts into core business	27
Identify workforce need	28
Develop a response	31
Justify the response:	32
- Does available evidence determine that research or pilot work is needed?	33
- If a pilot is considered necessary, what are we asking the system to do and how?	34
- What are the initial blockers and how might we address them?	34
Test of concept – Plan	35

Reflections: Author's approach to Project Management in the NHS 40
Reflections: Managing the unpredictable... 41
Communication 46
Test of Concept – End 49
Transition & Integration 50
Moving the concept into core business... the last step 51
Journey's End... transitioning the concept 53
Demonstrating system impact 54
Discussion 55

Chapter 3: Literature Review 56
Sources Searched & Search History 56
Literature Review: Innovation in the Healthcare Workforce 57
Innovation Methodology 58
Managing Change in the NHS 59
Managing Innovation in the NHS 63
Evaluation Methodology in NHS Workforce Innovation 64
Evaluating NHS Projects: Discussion 65
Managing Change: Perception and Truth Claims 66
Pragmatism 67
Pragmatism, Realism and Mixed Methods Research 71
Literature Review Conclusion 77

Chapter 4: Concluding the PhD 78
COVID-19: Impact and Lessons Learned 78
Conclusion 79

Chapter 5: Originality and Contribution of the Outputs 81
Pharmacist ACPs in Urgent and Emergency Care 82
Post-CCT GP Fellowships: Rotational Workforce Strategies in UEC 85
Integrating Health and Care Systems in the NHS 86
The Physician Associate (PA) Workforce Development Programme 87
Contribution to the published works: Summary 88
Future Direction 89

Appendices 91

References 115

Abstract

Purpose of the PhD

- To identify and explain common elements in the delivery and evaluation of NHS workforce transformation projects; elements which can be described as a single framework. The framework must have application and transferability across UK healthcare systems.
- The processual framework requires a philosophical underpinning to assist project teams in responding to stakeholder and user perception as key drivers in transitioning innovation into NHS core business.
- To demonstrate cohesion in the chosen published works against a common theme.
- To define the contribution of the programme of work to meet a PhD standard.

Design / methodology / approach

Whilst leading NHS workforce transformation programmes across healthcare systems, it became clear to the candidate that projects which successfully transitioned from 'concept' to core business shared coon design, delivery and evaluation processes. It was recognised that evolution of the NHS workforce cannot happen without a combination of project management, acknowledgement of contributory human factors and the resources to influence perception. These common elements were developed into a single, evidence-based framework with a defined philosophical underpinning, to support both the integration of innovative workforce projects and the need to recognise perception as a key driver throughout project design, delivery and evaluation. The PhD by publication was subsequently undertaken to present and justify the framework and explain the linked philosophical underpinning.

Findings

Insights gained during the candidate's NHS Health Education England regional and national programmes of work led to the recognition of mixed methods evaluation methodology, linked to critical realism *and* pragmatism as philosophical underpinning to the processual framework. Taking a hybrid approach of Critical Realism and Pragmatism might provide a means of translating a complex theory into something relatable across user and stakeholder groups. Evidence gathered from published HEE workforce transformation projects between 2014 and 2019 demonstrate that NHS change management requires both a definable process and recognition of perception (truth claims) as necessary to lever change in an industry where any change is predicated on the individual and collective will of the NHS workforce to embrace that change.

Originality

The unique contribution to the public body of knowledge will include a processual framework and philosophical underpinning, demonstrated through examples of its application in NHS workforce transformation projects between 2015 and 2020. Demonstrating the rationale for both the framework approach and the philosophical underpinning will provide the practical and academic contributions that this PhD seeks to achieve. Evidence presented within the narrative is a combination of antecedent research, the author's published works and evidence not yet published, held internally by NHS Health Education England.

Preface

Contribution to Knowledge of the PhD by Published Works

The knowledge generated from my work contributes to the body of knowledge on UK healthcare workforce development. The NHS programme upon which this PhD is based is entirely underpinned and justified by policy, workforce and patient need, identified through the Department of Health and Social Care, NHS England and Health Education England mandates, strategies and commissioning plans. This is a PhD rooted in research and development, related to a practical programme of work. As such, any academic outputs from the programme were secondary to the workforce change that the programme sought to initiate.

My challenge in writing this PhD is that, rather than using a single methodology as in a traditional thesis, I have employed a range of evaluation and research methodologies within my programme portfolio. This PhD will demonstrate that the recurring commonalities within all projects – regardless of the methodology used to evaluate – are capable of underpinning a single processual framework and philosophical underpinning to enable the transition of NHS workforce innovation into core business. Key to this is the need to recognise and influence perception at all stages in project development, delivery and transition. In a people-driven industry, workforce transformation is only possible by identifying with the target audience. An underpinning philosophical approach which enables project managers to understand this need is crucial to the success of any transformation programme. It is the analysis of this framework and argument in favour of the chosen philosophical underpinning upon which this PhD will be validated for academic rigour. The PhD will demonstrate that my framework and methodology is a tested, evidenced and relevant practical and theoretical mechanism to drive innovative workforce transformation in UK Healthcare. This represents the academic and practical contribution that the synthesis of my published works will achieve.

My contribution to the public body of knowledge includes:

An **academic contribution:** Consideration of philosophical approaches to underpin the adoption of innovation and an argument in favour of a hybrid model encompassing Critical Realism and Pragmatism. The resultant approach provides an underpinning for the processual framework that I have developed to enable the delivery, evaluation and transition of concepts into core business. This thesis will include an argument in favour of a philosophical underpinning that will enable programme teams to understand and respond to the perception of their stakeholders and users as a key determinant for the success of workforce transformation projects in the NHS.

A practical contribution: I have developed within my programme of work a processual framework to support project managers in developing, delivering, evaluating and transitioning conceptual workforce transformation projects into NHS core business. I have included evidence from my programme portfolio to explain and justify this framework. Through consideration of antecedents, existing similar work, I will demonstrate that this framework is novel in the NHS and capable of supporting the evolution of the NHS workforce to meet ever-changing patient need. This then represents a practical contribution to the public body of knowledge.

Evidence from the projects to which my published works relate will enable me to provide rationale for my approach. I will argue that without a combined practical and theoretical framework to help project teams understand and influence the perceptions of the end user and stakeholder, the NHS will be challenged to meet current and future need – of both patients and workforce. I will use both published evidence and evidence unpublished, held on file within NHS Health Education England. The presentation of this unpublished evidence for the first time will add to the public body of knowledge on NHS workforce transformation.

PhD Objectives

- Explain and justify common elements in delivery and evaluation of my programme portfolio, which can be applied as a common (innovation) framework to NHS workforce projects.
- Demonstrate that there is no existing innovation methodology capable of underpinning the integration of NHS workforce transformation projects. My framework therefore represents a novel approach.
- Demonstrate cohesion in the published works by referencing each as part of the evidence base for the framework.
- Define the contribution of the programme of work to meet the PhD standard.

The theme that links the published works

To demonstrate 'real world' service improvement potential, I will use evidence within the published works listed at Page 8 and Chapter 5. All of the publications relate to key work-streams in my programme portfolio. I will discuss – with reference to my publications - how my programme projects helped define and justify my model framework, as well as giving me the insights to identify a philosophical underpinning. All of the projects chosen for this narrative have transitioned from concept to core business, where 'core business' in this context means commissioned national education and training pathways and workforce strategies. Strategies that address current and (perceived) future workforce challenges (Health Education England, 2014-17) and patient need (NHS England, 2013 and NHS England, 2014). I will also reference wider multi-professional studies from the programme portfolio to demonstrate workforce impact and evidence the value of innovation in UK Healthcare.

All of the published works chosen for this PhD relate to projects that I designed, led, delivered and transitioned through my role as Workforce Programme Lead in Health Education England. While all of these projects have been adopted into NHS business as usual, projects including the development of Physician Associates, Pharmacist Clinicians, GP wide-skilling and the processual framework itself have also influenced the development of healthcare workforce worldwide. It should be noted that the undertaking of my PhD was intended to add academic rigour to my programme of work and help me to explain both the rationale for the processual framework and philosophical underpinning. I intend for my work and NHS career – both projects and linked published works - to continue, strengthened by the insights and experience that I have gained throughout my PhD journey.

Narrative Objectives

A. Describe the evolution of the Health Education England (HEE) Urgent and Emergency Care workforce transformation programme, from its inception as the West Midlands Emergency Medicine Taskforce programme in 2013, through its evolution into the UKs first Urgent, Acute and Emergency Care Transformation programme in April 2015, to its current state as a national UEC Workforce programme.

B. Present anecdotal experience, primary research, policy background and strategic drivers, which helped justify and evolve the programme.

C. Demonstrate how the operational and strategic delivery of projects, studies and evaluation within my programme allowed me to define and develop an underpinning framework to support innovation in the context of UK Healthcare Workforce. Reference will be made throughout the narrative to evidence from my programme portfolio. The sample evidence base will be drawn from projects delivered from April 2013 – June 2020.

D. Present original study data and NHS research, not previously published. The reader will be able to access a unique and original body of research, published in one place for the first time. This research, along with published works referenced in the narrative, justified and defined my programme as an enabler for workforce transformation across Urgent, Acute and Emergency healthcare.

E. Stress that the design and delivery of my programme was only possible through the creation and maintenance of a multi-professional, multi-organisation programme teams and dedicated stakeholder networks… the sum of its parts. The programme supports and demonstrates the need for partner working, cross-organisation collaboration and the overcoming of traditional, attitudinal and cultural blockers as a means to understand and influence perception.

F. Demonstrate through an analysis of antecedents and existing approaches my journey in establishing a philosophical underpinning for the processual framework. The focus will be on how mixed methods evaluation might be explained in terms of 'what works,' 'truth claims' and a need to consider and respond to the perception of stakeholders and users as a key enabler (or blocker) for workforce transformation in the NHS. Key to this is understanding the relationship between evaluation methodology, mixed methods research, critical realism and pragmatism and their application / relevance to NHS innovation.

The narrative discussion will – through a review of the journey of programme work-streams from concept to core business – show that in a fractured, disparate and ever-changing National Health Service, an idea may be developed into a nationally embedded and commissioned workforce strategy, with proven, 'real world' application and longevity. However, innovation can only transition into core business if it can progress unhindered….

Publications (A detailed list of publications and my contribution to each at Chapter 5)

Title	Author/s	Journal	Citation / Link	Publication
Development and Progress of the United Kingdom Physician Associate Profession	**Aiello M**, Roberts K	**Journal of the American Association of Physician Assistants**	April 2017 - Volume 30 - Issue 4 - p 1–8 Special Article http://journals.lww.com/jaapa/Abstract/2017/04000/Development_of_the_United_Kingdom_physician.16.aspx	03/2017
Extended Training to Prepare GPs for Future Workforce Needs: A Qualitative Investigation of a one-year Fellowship in Urgent Care	Dale J, Russell R, Harkness F, Wilkie V, **Aiello M**	**British Journal of General Practice**	DOI: https://doi.org/10.3399/bjgp17X691853	09/2017
Pharmacist Clinicians in the 21st Century Workforce	**Aiello M**, Terry D, Selopal N, Huynh C, Hughes E	**Clinical Pharmacist & The Pharmaceutical Journal**	http://www.pharmaceutical-journal.com/research/perspective-article/examining-the-emerging-roles-for-pharmacists-as-part-of-the-urgent-acute-and-emergency-care-workforce/20202238.article	02/2017
The Future Enhanced Clinical Role of Pharmacists in Emergency Departments In England - A National Multi-Site Observational Evaluation	Hughes E, Terry D, Huynh C, Petridis K, **Aiello M**, Mazard L, Ubhi H, Terry A, Wilson K, Sinclair A	**International Journal of Clinical Pharmacy**	Int J Clin Pharm. 2017; 39(4): 960–968. DOI: 10.1007/s11096-017-0497-4	06/2017
Clinical Pharmacists in Urgent and Acute Care: The Future Pharmacist.	Hughes E, **Aiello M**, Terry D.	**Commissioning Monthly**	Commissioning, 2014; 1(6):48-53"	2014
The potential for Pharmacists to manage children attending Emergency Departments	Terry D, Petridis K, **Aiello M**, Sinclair A, Huynh C, Mazard L, Ubhi H, Terry A, Hughes E	**Archives of Disease in Childhood (BMJ)**	*Arch Dis Child.* 2016;101(9):e2.1-e.2. DOI: 10.1136/archdischild-2016-311535.1	2016
Integrating health and care in the 21st century workforce	Aiello M, Mellor, J	Journal of Integrated Care	Vol. 27 No. 2, pp. 100-110. https://doi.org/10.1108/JICA-09-2018-0061	2019

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- Dr Mike Aiello, Johns Hopkins University
- Mr Julian Mellor, Health Education England
- Prof Simon Gregory, Health Education England
- Miss Kausar Begum,
- Mrs Colette Clews-Philips,
- Ms Annette Cluley,
- Joanna Jervis University of Worcester

You have all helped me grow professionally, creatively, academically, and personally.

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There are no words, but….

Thank you.

Tables, Figures and Boxes:

Table #	Table Title	Page
1	Pharmacist ACPs in Urgent and Emergency Care – Programme Portfolio	40
2	Key elements of a whole-life NHS project communication strategy	43
3	Literature Search: Sources Searched	55
4	Literature Search: Search History	56
5	Originality and Contribution of the Outputs (published works)	75-78

Figure #	Title	Page
1	Transitioning innovation in the NHS	11
2	System integration models in the NHS – 2013-15	13
3	Comparing innovation R&D & adoption investment	16
4	Thirteen HEE Areas in England (2013)	19
5	HEE UEC Programme progress – timeline	22
6	Finance Flow in the NHS (Kings Fund, 2017)	23
7	Suggested NHS Governance (Kings Fund, 2017)	23
8	Project Delivery: Commonalities in approach	25
9	Programme Delivery Framework	27
10	Example Urgent and Emergency Healthcare pathway	28
11	PIED Programme Aims	34
12	PIED Projects and Outcomes	35
13	Pharmacist Clinicians in UEC – 2014-18 Programme Journey	36
14	NHS Change Model (Anderson et al., 2018)	58
15	Potential future shortfall in workforce supply in the NHS in England	74

Box #	Box Title	Page
1	EM Workforce Challenge: The Facts	18
2	Return on Investment in the NHS:	20
3	Influencing and Contributing to Policy	21
4	Evidence for the intervention? Not much…	33
5	Pilot: Clinically Enhanced Pharmacist Independent Prescribing	48
6	A Pharmacist Clinically Enhanced Prescriber in Primary Care	50
7	Challenging the Position: Pharmacist ACPs in the Emergency Department	51
8	A day in the life of an urgent care trainee Advanced Clinical Practitioner	53
9	Barriers to implementing change in the NHS	61
10	Falling Short	62
11	The Pragmatic Maxim	69
12	Does it matter how we describe the journey, if the destination is the same?	73

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"When it works it works..."

Prologue

This narrative will present my journey in creating the first NHS Health Education England (HEE) workforce transformation programme in Urgent and Emergency Care. From 2014 to the present time, the programme generated evidence which enabled me to identify, test and now present a process for the transition of innovation into NHS core business.

In 2013, I was given the opportunity to design and lead the response to clinical workforce challenges across urgent and emergency healthcare in England. Drawing on my career experiences in programme management and legal practice I developed an award-winning programme, generating world-first output with demonstrable service and workforce benefit.

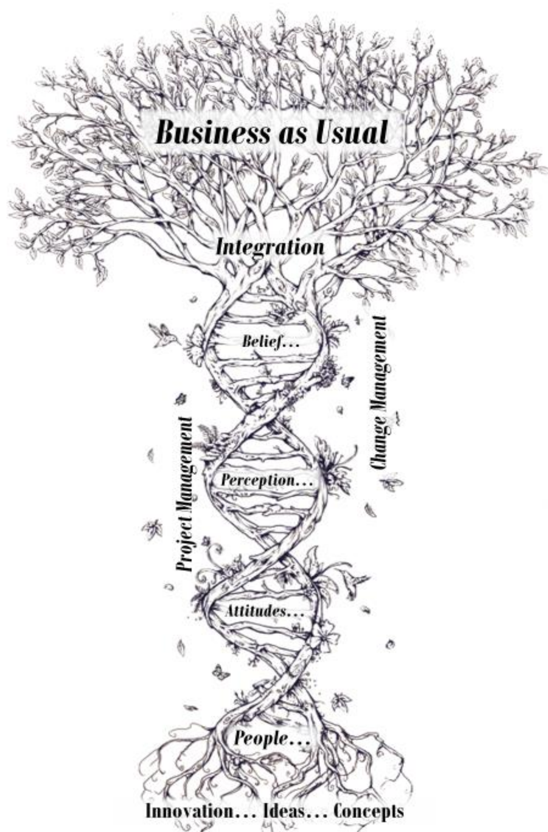


Fig.1 Transitioning innovation in the NHS

My programme has influenced local, regional, national and international workforce transformation strategies, providing evidence-based solutions to patient and workforce need.

As my portfolio expanded across healthcare systems, I noticed that NHS projects which achieved their outcomes contained common design, delivery and evaluation factors. Each project also required complex negotiation with stakeholders and users to influence perception and enable adoption of the output. The commonalities could be developed into a process - a framework - to enable the development and integration of NHS workforce projects, using my evolving portfolio as a testbed and evidence base. However, I came to realise that the NHS frontline workforce - rather than its leaders – ultimately determine whether change is adopted. Therefore, transformation cannot happen without addressing sociological and human factors from the outset. A need to influence perception had to underpin all of my work (Fig.1). I knew that I needed to frame and explain this in a way that allowed users to manage the expectations and sociological boundaries of the infinitely diverse NHS workforce.

To achieve this, I undertook a PhD to enable me to understand, define and present my approach as a blended processual and philosophical framework. The insights gained have enabled me to identify the philosophy of *pragmatism* as a means of identifying and responding to perception, as a key influencer of NHS workforce evolution.

Pragmatism was defined by proponents including Pierce (1905, 1907), James (1904) and Dewey (1917), and then refined and sub-divided over time (Houser, 2011). Pragmatists including Rorty (Reason, 2003) and Rescher (Gronda, 2014) identified links between pragmatism and research methodologies. I recognised through my PhD research the connection between mixed methods methodology, pragmatism and critical realism (Pawson and Tilley, 1997) (Allmark, 2007) (Creswell and Clark, 2007) and recognised that a hybrid approach combining realistic and pragmatic approaches resonated with how I have designed, evaluated and integrated mixed methods evaluation within my projects. While the philosophies and paradigms associated with both realism and pragmatism are complex (more on this later), the words 'realistic' and 'pragmatic' are used colloquially to explain dealing with a problem in a sensible way, suiting those conditions which really exist; rather than following fixed theories, ideas or rules (Cambridge, 2019). With widespread and common use, realism and pragmatism are, I believe, sufficiently relatable to people as being any process which offers a practical, 'common sense' pathway between problem and solution. A mainstream understanding of these philosophical approaches is important and provides a means of translating a complex theory into something that people can identify with; something straightforward and accessible across user groups. This narrative will demonstrate that any NHS change management requires both a clear, definable process and a deeper philosophical understanding for levering change in an industry where change is predicated by the collective will of people to do and then embrace a 'thing.' Being able to articulate this has enabled me to present my approach for the first time within this narrative. Employing a relatable and relevant philosophy and process flow will, I believe, empower NHS innovators to address workforce challenges and assist service providers in meeting 21st century patient and workforce need.

My career has developed symbiotically alongside my programme. With this in mind, I hope that the reader will appreciate the combination of personal reflection and evidence-based narrative. I could not explain or do justice to this journey by writing in a purely objective style. My NHS career has been a series of once-in-a-lifetime opportunities, to which I owe the NHS a debt that I will never be able to repay… but I aim to try.

"The world as we have created it is a process of our thinking…
It cannot be changed without changing our thinking." (Einstein)

Chapter 1: Transforming Urgent and Emergency Care

Introduction

To be able to fully understand the challenges facing the transition of concepts to core business in the NHS, the reader must first understand the dynamic NHS structure and challenges facing the recruitment, retention and development of the NHS workforce.

Since the introduction of the 2012 Health and Care Act, the UK NHS has undergone one of the greatest clinical workforce changes since its inception (Wilkie et al., 2018). System-wide change… *transformation*… strategies have influenced NHS legislation and policy including the Shape of Training report (2013), Primary Care Commission (2015), Five Year Forward View (2015), Long Term Plan (2019) and People Plan (2020). Traditionally disconnected healthcare systems are increasingly pushed toward working in a joined-up way.

However, identifying a need for change and *actually delivering change* are very different things. The Dalton Review (2014) recommended that, despite NHS change being slow to happen, "due in part to an institutionally low tolerance to risk…It is important that this time we don't miss the opportunity to act with urgency… utilising innovative approaches for growth to deliver better care for patients – and develop the internal capacity and capability required to deliver improvement" (2014). Supporting this concept of cross-system integration, the NHS *Five Year Forward View* (2014) recommended workforce changes to centre care holistically on the needs of patients and populations and blur the boundaries between primary and secondary care; health and social care; physical and mental health (2014). The Forward View aimed to improve experience of care, the health of populations, reduce per capita cost of healthcare and improve the experience of care provision through its Quadruple Aim (2014).

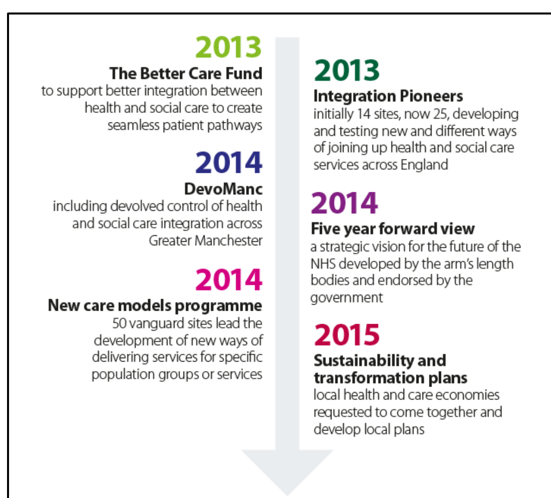


Fig.2 System integration models in the NHS – 2013-15

Subsequent strategies to realise this vision and enable change included Vanguards, Sustainability Transformation Partnerships (STP), Integrated Care Systems (ICS) and Primary Care Networks (PCN) (Fig.2). These strategies were intended to provide a mechanism for joining up NHS service provision (NHSE, 2019), supported by enabling policy including NHS England's Long-Term Plan and People Plan (2019). NHS Service commissioning models including the NHS Primary Care Contract were revised from 2018 to lever development of integrated, multi-professional workforce across traditionally silo systems and workforce groups.

In general, the joining-up of healthcare sectors and services was considered essential to meet identified workforce and patient need (NHSE, 2020).

In 2019, the NHS-wide *Long Term Plan* underlined the expansion and reform of urgent and emergency care (UEC), with practical goals to ensure faster access to patient care, relieve pressure on A&E departments, and offset winter demand spikes (NHSE, 2019). This supported the approach outlined in previous UEC workforce strategies including *Securing the Future ED Workforce in England* where it was recognised that '…developing better, more coordinated out-of-hospital care services… not only will patients receive better care but the pressure on staff working in EDs will reduce' (2017). NHS think-tank the King's Fund observed that achieving such ambitions would require a 'workforce able to deliver increased co-ordination across organisational boundaries; and capable of addressing inequalities in treatment and outcomes across physical and mental health services (2017).' An integrated workforce which joined up healthcare systems would enable patients to access care more effectively, through different approaches. However, such a workforce would need new commissioning and workforce development strategies. It was accepted across NHS service providers, commissioners and policymakers that a re-evaluation of 21st century training, development and deployment pathways was required to reflect the needs of an aging population and a changing healthcare economy. In particular, challenges with recruitment, retention and wellbeing of clinicians across healthcare systems demanded that workforce re-design strategies be a first port of call in any NHS service transformation.

Integrating NHS Systems

The evolution of England's 44 Sustainability Transformation Partnerships (STP) from 2016 and their development into Integrated Care Systems (ICS) presented an opportunity for investment in multi-professional workforce re-design. Led by the Department of Health and Social Care (DHSC), STP development aimed to overcome silo NHS investment and workforce planning and enable consistent national and local investment in a sustainable workforce; a *transformed* workforce, capable of providing the kind of care that local populations expect from a 21st century healthcare system (HEE, 2018).

Writing in 2017, Ahluwalia and Wilkie observed that demand for integrated multi-professional clinical teams with enabling workforce strategies and access to competent, enabled supervision had never been greater or more varied (2017). Recognising this demand, NHS England expressed a strategic intent to connect all urgent and emergency care (UEC) services through emerging STPs and ICS'; dissolving traditional boundaries between hospital and community services and supporting the free flow of information and expertise needed to enable appropriate standards of patient care (NHS England, 2020). Investment by NHS England and HEE presented an opportunity to train and deploy clinical teams in a way which made best use of the current workforce, while also addressing recruitment, retention and wellbeing strategies. Perceived outcomes included development of enhanced, 'wide skilling' pathways for multi-professional teams, supported by policy and re-aligned commissioning (HSCC, 2018). An integrated mix of enhanced and emerging clinical roles was considered essential for populations to experience their health and care as close as possible to where they live (NHSE, 2017). Workforce planners across health and social care, local authority and third sector providers were encouraged to test the potential for deployment of new and enhanced roles beyond the traditional scope of practice, as part of new, cross-sector, multi-professional health and care teams. For example, the deployment of *generalist* clinicians to support GPs in traditional office-based family practice, out-of-hours acute practice, intermediate care teams, care and rehabilitation of an increasingly frail population and the delivery of effective community healthcare (Aiello, Mellor, 2019). *Identified workforce need* became a recognised means of justifying investment in multi-skilled *specialist generalist* clinicians (HEE, 2018). Such roles could overcome traditional silos in health and care and form a basis for truly integrated patient care (Dale et al., 2016; HEE, 2018).

As well as opportunities to evolve and wide-skill traditional clinical roles, new roles such as physician associates, medical assistants and nurse associates were developed and deployed in increasing numbers across healthcare systems, forcing commissioners to abandon traditional workforce strategies (HEE, 2017). The commissioning of such pathways has since enabled clinical teams to access training and development funding and wide-skilling opportunities as never before, resulting in a *quiet revolution* of workforce re-design (Ahluwalia, 2018). However, despite clear advantages, system leaders accepted that an increasingly diverse workforce came with complex challenges related to training and development.

It was within this environment of rapid, sweeping change, that my programme was conceived.

Workforce Transformation… *where it all began…*

Launched as an NHS Arm's Length Body in 2012 (HEE, 2019), Health Education England [HEE][1] was tasked to provide national leadership and coordination of education and training within the health and public health workforce within England (HEE, 2020). In the face of rapidly expanding workforce and patient demand, HEE leaders recognised that change would not happen with either a traditional 'top down' or 'bottom-up' redesign, but instead from both directions simultaneously (Aiello, 2018). It was accepted that workforce change… *'Transformation'*… processes would need to include:

- ✓ Identifying areas of workforce need and patient need which require public investment.
- ✓ Using informed policy development, driven by identified workforce and patient need, to lever new or revised commissioning and investment models.
- ✓ Developing local and national workforce transformation strategies, encompassing evidence-based research, development and delivery of workforce re-design projects in the live environment.

HEE recognised the need to strike a balance between investment in day-to-day operations and innovative practice to meet evolving demand. With evidence repeatedly showing that innovation is cancelled when austerity closes in, maintaining this balance would become a core part of HEE's mandate (HEE, 2019).

Underlining the need for this balance, the Kings Fund described key issues facing the NHS in maintaining innovation: 'local health services are complex, interconnected systems with different starting points, different challenges and finite skills and resources for innovation and improvement. External bodies are ill placed to determine which service innovations would deliver greatest value within a local system or how they should be adapted to deliver greatest impact' (Collins, 2018). It has ever been the case that health and social care services in England are compartmentalised in both service-specific and geographic silos (see author note). Despite this, the King's Fund noted that evidence of new NHS service innovation is constantly emerging (2018).

Essentially, NHS providers and workforce recognise a need to evolve, but evidence suggests that this will only happen if leaders and commissioners are first assured of the cost-effectiveness and service benefit of doing so. It was hoped that emergent Vanguards, STPs and then Integrated Care Systems would be ideally placed to drive this transformation agenda, supported by HEE and NHS England commissioners (HEE, 2015).

> ***Author Note:***
>
> *"When an <NHS> innovation is implemented, it has to sit in a current of behaviours and characteristics of managing, which is like sitting in a strong current battling against the flow. Then ultimately, those working with the innovation cannot sustain the push against the current anymore. An example of this is referrals. Referrals and departmental assessments are one of the most functional and greatest barriers to working together. Everything about them forces in delay, waste and a mindset that works against integrated working. Yet, I know of no initiative that succeeds in replacing referrals and functional assessments."*
>
> **John Mortimer**
> Consultant and learner, Impro Consulting
> 2018

[1] See Appendix A for a summary description of Health Education England

Whether at a local, system or national level, healthcare transformation requires a collective shift both at strategic and operational levels. This in turn requires a process to influence the perception of individuals across healthcare paradigms. A truly integrated workforce can only be enabled through a shared vision, partnership working and the breakdown of traditional, cultural and silo barriers, to transition concepts into 'business as usual' (Price, Waterhouse, Cooper, 2015). However, evidence demonstrates that while the NHS delivers world-leading research and concepts and even where innovation can be maintained in cash-strapped systems, the process of transitioning concepts into core business is in general, poorly supported (Collins 2018). This is not because services are lacking in expertise, desire to change or resources to enable that change… more, that they simply do not have access to expertise and processes to guide the transition of concepts (Aiello, Mellor, 2018).

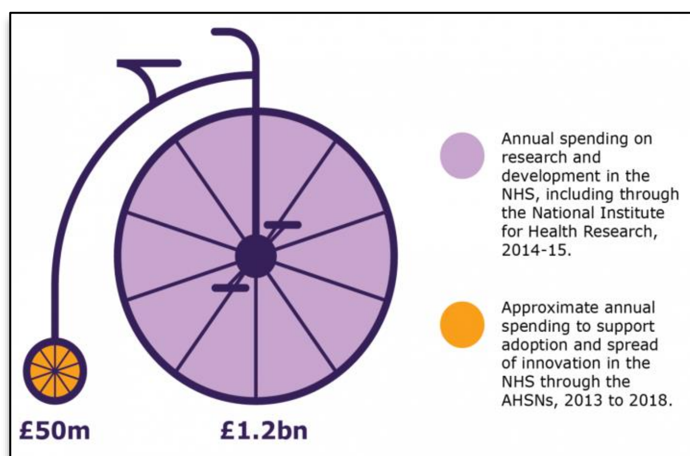


Fig.3 Comparing innovation R&D & adoption investment

Between 2013 and 2018, the National Institute for Healthcare Research (NIHR) reported that annual investment in the transition of innovation into core business was 4/100 that of the total budget given over to innovation research and development in the NHS (Collins, 2018) (Fig.3). Evidence repeatedly demonstrates that while the NHS is a world leader in the development of innovation, its ability to transition innovation into core business is not so successful (Kings Fund, 2018).

As a commercial project manager, it seems common sense to me that transition planning should be a key part of any innovation development from the outset and indeed, a condition of investment. However, NHS teams often lack access to professional project managers and planning tools to do develop effective transition plans. It seems then, that a key part of enabling NHS evolution involves equipping clinical teams with the people and resources needed to plan how their innovative practice may transition to business as usual… and indeed, what 'business as usual' actually means in the context of their part of the system. Recognising this need, regional and national HEE and NHSE transformation programmes were set up from 2013 to enable delivery of innovative… *transformative*… practice; to support traditionally isolated health and care systems in developing integrated workforce models, system-wide (HEE, 2015; PWC, 2015).

Focus: Workforce transformation in urgent and emergency care

HEE authorised my programme and recruited me in 2013, in response to the NHS *Emergency Medicine Taskforce* recommendations (see below) (NHSE, 2013). My brief was to develop integrated, multi-professional workforce strategies using competency-based (rather than traditional role-based) approaches to workforce planning in Urgent and Emergency healthcare. I was authorised to work autonomously, enabling the programme to move beyond and through traditional commissioning silos. I was tasked to use live, 'shop-floor' projects to bring traditionally isolated systems together in collaborative projects.

As project manager, it was clear to me that collective action which connected local innovation and best practice within an enabling delivery framework was required. I believed from the outset that this approach would support NHS workforce in achieving a fit-for-purpose, integrated workforce, overcoming traditional boundaries between community, primary and secondary healthcare. Achieving this required action-focussed collaboration between workforce planners and commissioners, guided and supported by NHS service commissioners… less *'talking about doing,'* more *'doing.'* I proposed that an enabling programme methodology would be necessary to deliver, evaluate and integrate innovation in a way that service leaders and commissioners could trust, confidently adopt and adapt to suit their unique needs.

Author Note: *That's all well and good, but nobody will use and trust a thing they don't believe in…*

My assertion from the outset was that any new programme process would need to be proven to the target market as safe and appropriate to recipient needs. Processes would need to be rigid enough for quality assurance yet flexible enough to adapt to varying need and capable of assuring long-term, recurrent investment. Through identifying and testing the processes within each project, I eventually recognised that a common project methodology was both necessary and possible, across healthcare systems. However, any process would need to be underpinned by the need to influence stakeholder and user perceptions, in particular within project planning, delivery and evaluation stages. Explaining this would require a philosophical approach to underpin the mechanical process, which could be easily understood by users.

The following sections describe in more detail the specific challenges to which my programme was set up to respond. I will also show commonalities in the design, delivery and evaluation of projects which led to a realisation that a common delivery and transition framework was possible. Chapter 2 will include an illustration of the resultant framework and an analysis of the evidence supporting each step. Key to the framework is the philosophical underpinning, explained by a hybrid realistic-pragmatic approach. While the aim of this paper is not to present a philosophical treatise, contextualising why I chose this approach and indeed, why I bothered attaching a philosophical underpinning *at all* is important. The literature review in Chapter 3 will provide an explanation of the links between my framework, project evaluation, stakeholder and user perception and the resultant philosophical underpinning to my processual framework.

Urgent and Emergency Care - *A workforce on the brink…*

In 2011 the Department of Health confirmed a critical workforce shortage at Emergency Medicine (EM) Specialist Trainee ST4 and medical Consultant grades across England. The Royal College of Emergency medicine reported that the EM specialty in 2011 and 2012 achieved a lower than 50% fill rate into higher training posts. Fewer trainees were opting for EM as a career due to the intensity and nature of the work, unsociable hours, working conditions and the sustainability of such a career to retirement age (68) (NHSE, 2013; RCEM, 2013). Furthermore, workforce pressures in acute medicine departments and General Practice contributed to increased pressure on Emergency Departments (ED) (Box 1). These challenges constituted a serious patient safety risk across UK urgent and emergency healthcare (NHSE, 2013; RCEM, 2013).

Workforce redesign: The Emergency Medicine Taskforce

NHS England (NHSE) and the Department of Health collectively agreed that waiting for the NHS to evolve to compensate for the EM workforce problem was simply no longer an option. ED teams and medical training providers were tasked to find alternative staffing and training solutions to meet service delivery and public expectations. Changes to training pathways and supervision, working conditions and long-term career development would be needed to ensure the recruitment and retention of a sustainable, multi-professional, clinical workforce (RCEM, 2011).

The NHS collectively accepted (arguably for the first time) the need to move away from traditional, doctor-and-nurse driven workforce models and *transform* to meet the demands of an ever-increasing, aging patient population, presenting with complex co-morbidities and healthcare needs (GMC, 2013).

BOX 1: EM Workforce Challenge: The Facts

- ✓ 2016: Providers reported needing **300 additional full-time consultants -** 15% of EM consultant workforce.
- ✓ **85%** of nurses believed patient safety was affected by pressures on Emergency Departments, with 20% reporting that this occurred daily.
- ✓ **40-50%** of Emergency Medicine trainees leave before completing training.
- ✓ **5%** of trainees feel forced to cope with clinical problems beyond their experience on a daily basis.
- ✓ **One in five** doctors training in EM have concerns about patient safety.
- ✓ **50%** of EM doctors report that their sleeping pattern leaves them feeling sleep deprived on a daily / weekly basis.
- ✓ EM accounted for **20%** of all medical locum spend in a sample of 52 NHS trusts (2017).
- ✓ NHSI estimate that nursing agency spend in EM accounts for **c.10%** of total nursing spend.

Recognising the need to avert a supply crisis through a transformed workforce model, the **Emergency Medicine Taskforce** was established by the Department of Health in September 2011 (HEE, 2013). The EM Taskforce aimed to rapidly explore and address aspects of clinical education and training which contribute to challenges faced by the Emergency Department workforce, including:

- Concerns over patient safety during ED attendance,
- Inadequate Emergency Medicine Consultant numbers,
- Recruitment and retention of Emergency Department (ED) rotas at higher specialty trainee, middle grade and senior level - including capacity of clinical supervision across multi-professional teams,
- Overnight closure of EDs due to insufficient staffing and availability of senior supervisors,
- Increasing expenditure and reliance on locums and agency staff and
- Emerging roles for non-medical staff - ensuring national standardisation, supervision and integration.

Adding to the complexity of the challenge, it was recognised for the first time that 'Emergency Care' needed to extend beyond the Emergency Department. The Taskforce in its 2012 **interim report** defined *Urgent and Emergency Care* (UEC) as "the provision of all unscheduled care, whether in primary care or hospital based."

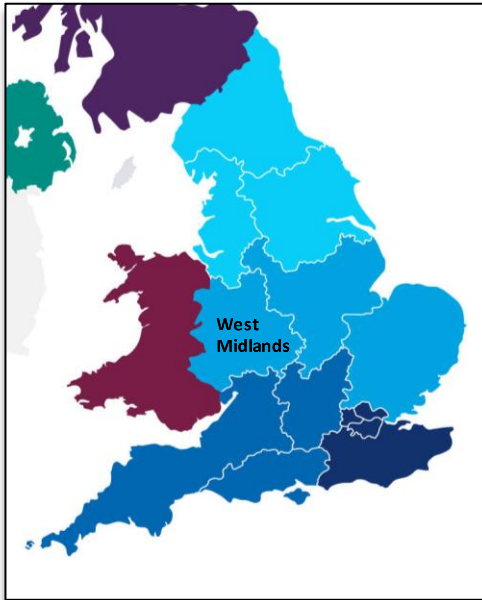


Fig.4 Thirteen HEE Areas in England (2013)

The EM Taskforce Interim Report made recommendations (Appendix B) relating to recruitment and retention challenges faced by the multi-professional Emergency Department workforce. Supporting these recommendations and extending the scope from the ED to urgent and emergency healthcare, NHS England published its *urgent and emergency care workforce strategy* in November 2013. For the first time in NHS history and through the Emergency Medicine (EM) Taskforce, NHS organisations would collectively seek to address multi-professional workforce challenges across UEC settings, guided by an agreed national mandate and delivered by multi-organisation teams. To operationalise these recommendations, HEE was tasked by the Department of Health to establish EM Taskforce groups within each of the (then) 13 Health Education England local areas (Fig.4) (Mitchell, 2013).

From April 2013, Health Education England set up its EM Taskforce in the West Midlands. The West Midlands programme would follow national direction and develop workforce initiatives including:

- Enhancing the scope of General Practice in Urgent Care settings.
- Development of the multi-professional workforce, including 'new workforce' including: Physician Associates, Paramedics, Pharmacist Clinicians and Advanced Clinical Practice (ACP) roles.
- Supporting access to training pathways in Emergency Medicine, Urgent and Acute healthcare.
- Development of e-learning resources to support safe standards of prescribing.
- Development of training pathways for Specialist and Associate Specialist Doctors (SAS) in EM.
- Enhancing clinical skills and career pathways for Pharmacist ACPs in EM and Urgent / Acute Care.
- Consideration of career pathways for veteran Defence Medics and access to care pathways for veterans and their families. (HEE, 2014).

Despite being authorised to operate autonomously, I realised that my programme would need to draw from, inform and support existing organisations, networks and programme teams.

With the support of a steering group made up of industry experts, I started to refine the Taskforce Recommendations into a portfolio of West Midlands' workforce development projects.

A key weakness of wide-scale change in the NHS is where *talking about doing* (*we must*, *we should*, *we need to*…) gets in the way of *actually doing* (Darzi, 2008). I was keen to ensure that the programme focused from its inception on the development, delivery, evaluation and integration of tangible (rather than theoretical) workforce transformation projects. As programme lead, my focus was to ensure that each project provided evidence to demonstrate 1) workforce impact and service benefit and 2) a measurable return on public investment (RoI – Box 2).

From 2013-16,[2] I led the West Midlands EM Taskforce Programme in the delivery of a project portfolio including: EM recruitment and retention strategies for medical trainees; development of GPs with extended responsibilities (Dale, Wilkie et al., 2016); 'shop floor' skills training portfolio for Middle Grade and Associate Specialist Doctors (Turner, Aiello et al., 2015); a world-first Pharmacist Clinician development programme (Aiello, Terry et al., 2014, 2015, 2016, 2019); standardisation of Advanced Clinical Practice training (HEE, 2016) and the development of emerging roles including the Physician Associate (Aiello, 2016) and Advanced Paramedic Practitioner (Mitchell, Marvel, 2014).

In 2015, the UK Department of Health requested an evidence-based definition of workforce transformation in the NHS. My programme's track record for identifying new models of care, generating at-scale projects from local test-of-concept and an emerging methodology to transition 'innovation' in healthcare workforce, led to it being volunteered for critical review. In the subsequent review, Price Waterhouse Cooper commented that my delivery model had been 'successful overall in providing structure, focus and consistency to the delivery of HEE's work' (2015). Subsequently, my programme methodology provided the definition for Workforce Transformation.
It is believed that this was the first use of 'Transformation' to describe an innovative workforce development programme in the NHS – certainly the first time that HEE had adopted the term.

This proved timely.

Box 2: Return on Investment in the NHS:
A key RoI measure is the development of new models of care that positively impact on locum and agency spend across Urgent and Emergency Care settings. For example, while locum medical staff are a valuable and flexible resource within our emergency care workforce, increasing workforce shortages have led to an overreliance in some departments, in turn placing unsustainable pressure on system budgets (Securing the future…2017). The BMJ reported that NHS trusts in England were spending around 60% more on locum doctors to fill staffing gaps in hospital emergency departments than in 2009 (2014). Spending on emergency locums rose nationally from £51.9m in 2009-10 to £83.3m in 2012-13, with each trust spending (on average) £785,941 on emergency locums in 2012-13. This figure was higher than the annual salary bill for all emergency consultants in Britain (Akhtar, 2018).

With this in mind I contended that any workforce development outcome that demonstrated a safe, sustainable and stable workforce alternative to costly, temporary and high-risk locum-based workforce planning would be a key measure of success …responding to the "*how do we know what 'good' looks like?*" challenge with "*interventions that enable a safer, sustainable workforce*."

[2] Unless otherwise stated, reference to "years" will mean an NHS Financial Year – April 1st – March 31st.

The NHS *Five Year Forward View* was published around the same time and recommended the establishment of six priority workforce programmes covering Urgent and Emergency Care (UEC), mental health, primary care, cancer, frailty and learning disability (NHSE, 2014). My programme was well placed to meet this demand for Urgent and Emergency Healthcare.

In 2017, HEE's executive requested a national UEC programme as an evolution of the (then) ED-focussed programme. The aim was to enable partner working with key stakeholders including NHS England, Medical Royal Colleges, NHS Improvement (NHSI), regulators, patient groups and workforce leads, and deliver the NHS Five Year Forward View requirements for Urgent and Emergency Care. From March 2018, I was offered the chance to design and lead this new approach, based on my now established programme methodology. My national programme has since responded to identified workforce need across England, providing a link between workforce need, commissioners and policy makers. My programme evidence base informed policy including 2017's 'Next Steps on the Five Year Forward View', 'Securing the Future of the Emergency Department Workforce in England' strategy and the 2017 Lord Carter Review (Box 3). To assist the reader, my programme development timeline is represented at Fig.5. At this stage, the nationalisation of my programme required me to produce pro forma guidance and process flows for all regional HEE teams and my own expanded team of project and programme managers. This spurred me to consider the commonalities in approaches used across my project portfolio and any theory that might explain the need to understand and influence perception as a key driver for change. Recognising a need to obtain expert assistance in describing and presenting my process and theoretical underpinning, I undertook this PhD.

Box 3: Influencing and contributing to policy...

Between 2015 and 2019, my programme outputs influenced national NHS Policy including:

Secretary of State 'New Deal' for GPs: Referenced HEE GP Fellowship in Urgent Care: "...Building on the success of a Health Education England pilot in the West Midlands, we will incentivise a number of newly qualified GPs with an extra year of training and support to develop specific skills needed in areas such as paediatrics, mental health and emergency medicine..."

GP Forward View (2016): Provided evidence and content: "Expansion of workforce capacity: Post-CCT fellowships to provide further training opportunities in areas of poorest GP recruitment; Current investment of £31 million to pilot 470 clinical pharmacists in over 700 practices to be supplemented by new central investment of £112 million to extend the programme; investment by HEE in the training of 1,000 physician associates to support general practice."

Primary Care Commission – Rowland Report (2015): Submitted programme evidence and content: Physician Associate and Pharmacist development.

Next Steps on the Five Year Forward View (2017): Programme evidence and content submitted: Physician Associates.

Carter Review (2017): Actions to reduce avoidable conveyances to hospital and to improve the retention of paramedics – The College of Paramedics endorsed our rotating paramedic pilot as having the potential to provide a solution to these challenges.

Securing the Future of the ED Workforce in England (2017): Case studies, evidence and content: Physician Associates (Pg.10-11), SAS doctors (Pg.14-17), GP Fellowships (Pg.19), Pharmacist ACPs in Urgent and Emergency Care (Pg.19-20)

Facing the Facts, Shaping the Future – HEE Workforce Plan (2018): Provided programme evidence and content: Pg.59: Post-CCT GP Fellowships; Pg:62: Content: UEC workforce development (from Securing the Future... 2017). Programme Case Study: Pg.127: "Pharmacist clinicians in the 21st century workforce."

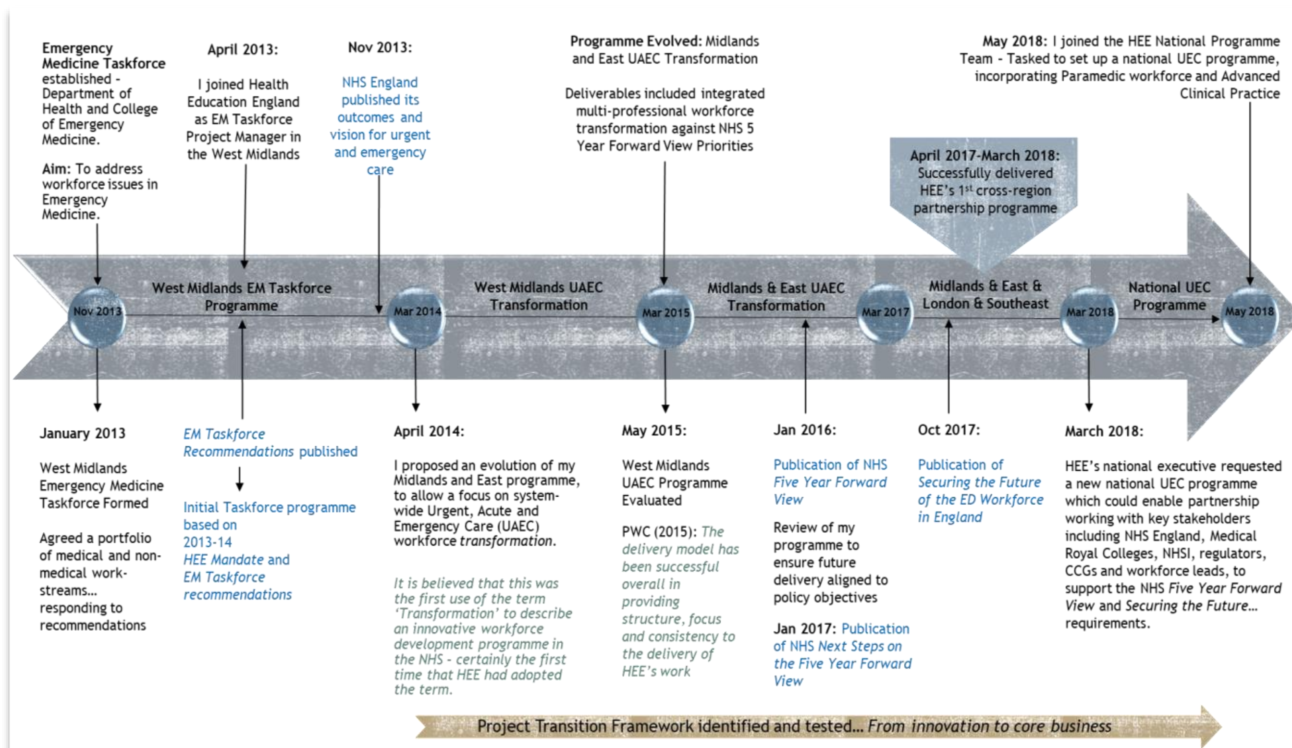


Fig.5 HEE UEC Programme progress - timeline

Managing change in the NHS

Crucial to understanding why a single change management process is yet to be adopted across the NHS is a recognition that the NHS is not a single organisation. The dictionary definition of the NHS is 'the service in the UK that provides free or cheap medical treatment for everyone and is paid for through taxes' (Cambridge, 2019). Within its constitution, the NHS is defined according to principles and values, rather than a formal operating structure (NHSE, 2015). It is important to clarify to the reader that, rather than a single organisation with a single board control and operating structure like, say, Apple or Tesla, the NHS is in fact a dynamic mass of interconnected (often disconnected), silo and isolated systems; each with its own geographical, cultural, traditional, attitudinal, specialist, financial, economic or sociological boundaries.

In the NHS, there is no single paradigm; no single management or command structure to direct a unified approach to the design, delivery and integration of workforce strategies. There are a number of reasons for this, but a key contributing factor might be that UK health and care has no universally accepted way of measuring how well services are delivered or integrated, despite a system-wide recognition that better measures are needed to reflect whether and how people receive a consistent quality of care across the UK (Kings Fund, 2017). Simply put, nobody knows what 'good' looks like, but everyone has an opinion on the matter. This creates and exacerbates a fractured, silo range of health and care services. Despite the existence of an NHS constitution to define common principles, values and responsibilities (DHSC, 2015), there is no 'one ring to rule them all' (Tolkien, 1954… *when referencing goes too far!*) in terms of processes to guide workforce investment, development or transformation. A key blocker is that the meaning of 'core business' differs across NHS systems. Project teams therefore perceive a need for bespoke transition methodologies, tailored to reflect the definition of core business within the target paradigm.

In attempting to define a command structure of the NHS, the Kings Fund proposed a dual financial and regulatory connection (Kings Fund, 2016). That is, that two connecting factors across NHS systems are 1) the need for oversight or governance and 2) the flow of government money. It is a fact that all NHS systems – howsoever and whenever established - are all regulated or governed by UK government departments in some way and rely on access to UK government investment (NHSE, 2017). Fig.6 illustrates the flow of monies from Parliament to the Department of Health and Social Care, through to NHS Arm's Length Bodies and then either directly to NHS Service Providers or indirectly through local service commissioners. Fig.7 shows how NHS services are governed and regulated. These are simplified models, which do not reflect varying standards of quality, governance and regulation between specialist groups, health and care systems and geographies.

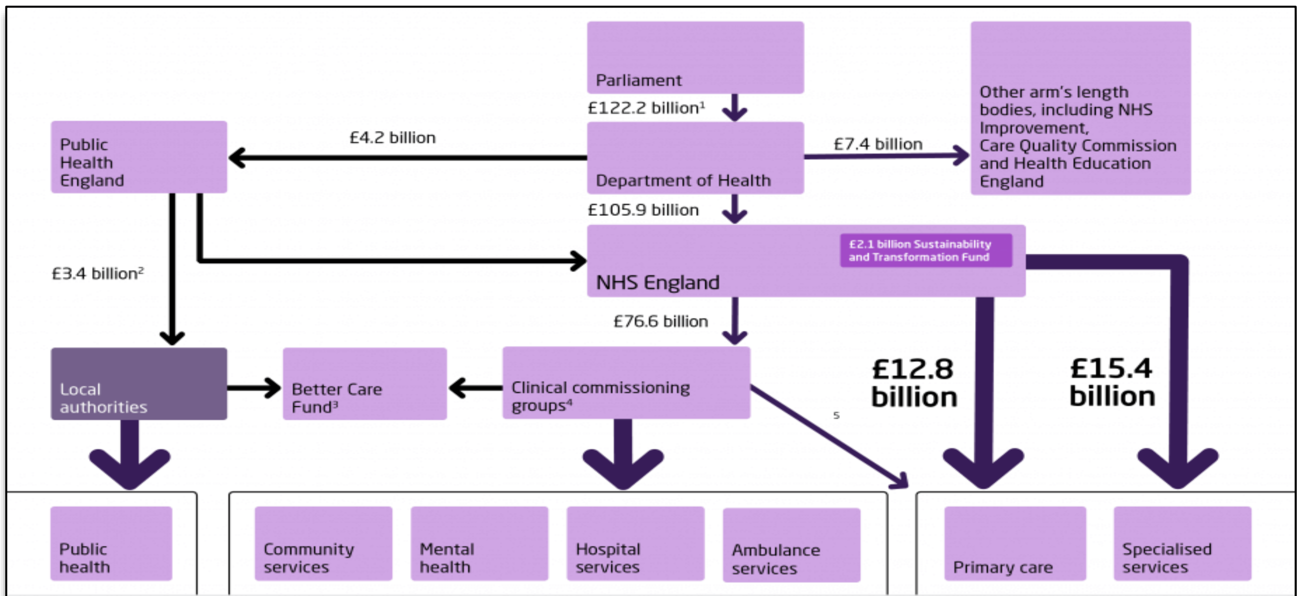


Fig.6: Finance flow in the NHS (Kings Fund, 2020)

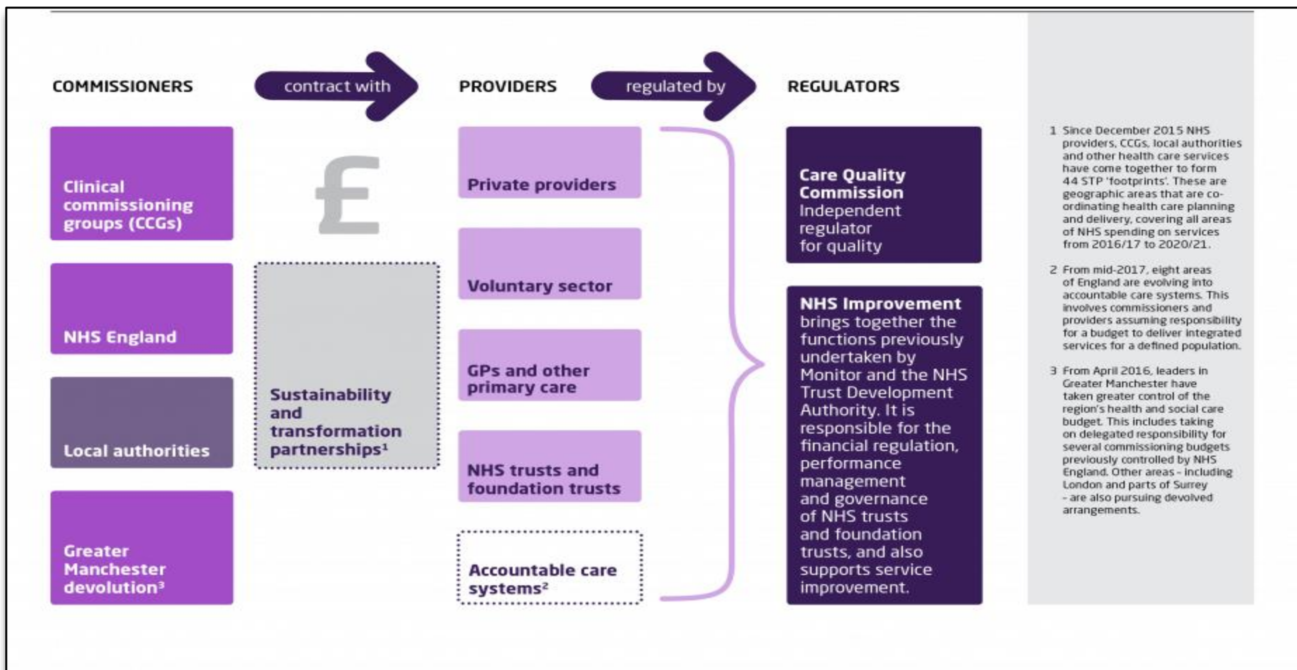


Fig.7: Suggested NHS governance (Kings Fund, 2020)

Published positions, press commentary and government statements relating to NHS issues may have influenced a *public*[3] perception of the NHS as being a single entity with a clear leadership or 'command' structure. This perception may contribute to an often-unrealistic expectation of the NHS' ability to rapidly engineer system-wide change (Healthcare Institute, 2018). I wonder if this may lead to much of the media criticism faced by the NHS as being unprepared to meet current and future public need in a consistent way?

As an NHS employee undertaking change management across different healthcare systems, I observed that, despite a single source of funding, the NHS has no single leadership so cannot be considered autocratic and capable of initiating rapid, system-wide change. The NHS is not governed solely by clinicians or research teams (Kings Fund, 2020), so cannot be considered to be technocratic and able to influence all specialist groups from a single source. Furthermore, with no single controlling executive board or governance framework, the NHS cannot be likened to or treated like a commercial organisation. Mintzberg, in attempting to frame the structure of the NHS, suggested its alignment more to 'professional' than 'machine' bureaucracy; a bureaucracy which requires an in-depth understanding of the personalities governing the very many professional groups across NHS systems (2012). It is crucial to any workforce re-design strategy to first recognise the need for an approach which reflects the lack of a centralised command structure and a consequent need to influence human factors at all stages.
Rather than a 'top down' leadership, it may in fact be argued that the NHS is led by the will of its frontline workforce and available funding, rather than the machinations of a single command. If this is the case, then the evolution of NHS services and the ability to engineer change relies on the ability to influence frontline workforce' perception of their need; need which may be observational, politically or culturally motivated, or evidence-based. Rather than money or governance as discussed earlier, if there has to be a single common 'something' across the NHS, it is perhaps that NHS systems adapt, evolve, grow or fail based on the will, perception, attitudes and interpretation of individuals and collectives within workforce groups. Perception in this sense includes understanding and recognising what is *real* to people within that paradigm; what can be seen and felt; what, if undertaken or adopted, will demonstrably:

- ✓ Help people or groups of people do their job more effectively.
- ✓ Support people or groups in doing their job safely, without perceived risk of failure.
- ✓ Be affordable – justifiable against the current 'as is' state, with a clear return on investment.
- ✓ Attract recurrent funding – for example as a commissioned work (integrated into business as usual).
- ✓ Make a demonstrably 'real' difference – either to the individual, the 'tribe' or the collective.
- ✓ Improve the wellbeing of that group and / or their patients.

As my work developed, the above became increasingly apparent. This and other emergent commonalities in my project management process led me to begin development of a process-based framework to enable the transition of NHS workforce transformation concepts into core business. **Chapter 2** will describe my model project delivery framework, identifying the key features needed to ensure integration of innovation into everyday practice. Evidence from my project portfolio will demonstrate how learning and the original contribution of the work allowed me to synthesise outcomes and identify common features, enabling a model framework to drive NHS workforce transformation at scale.

[3] Accepting that 'public' is largely an arbitrary term, I will use Wilkie's definition of 'public' to mean "people capable of accessing NHS services and not working in a UK healthcare setting" (2019).

Chapter 2: Methodology and Methods

Research Design: Evaluation and Publication: Proving and communicating the work

As my programme evolved and projects repeatedly achieved transition from concept to core business, I began to identify recurring commonalities in project design and delivery strategies for those projects which were considered 'successful' – that is, projects which delivered the intended system change and were adopted into core business by that system. Commonalities are shown in summary at Fig.8.

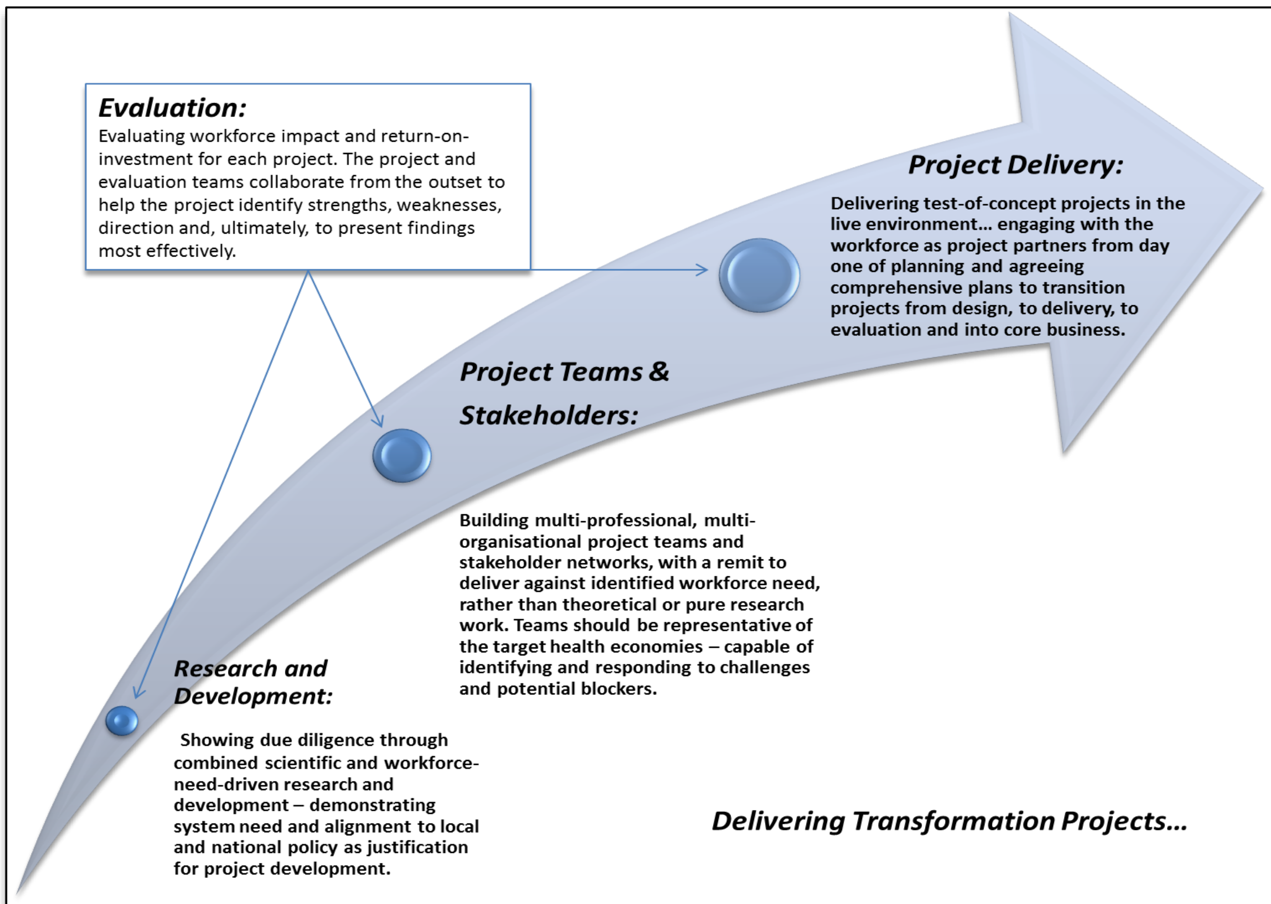
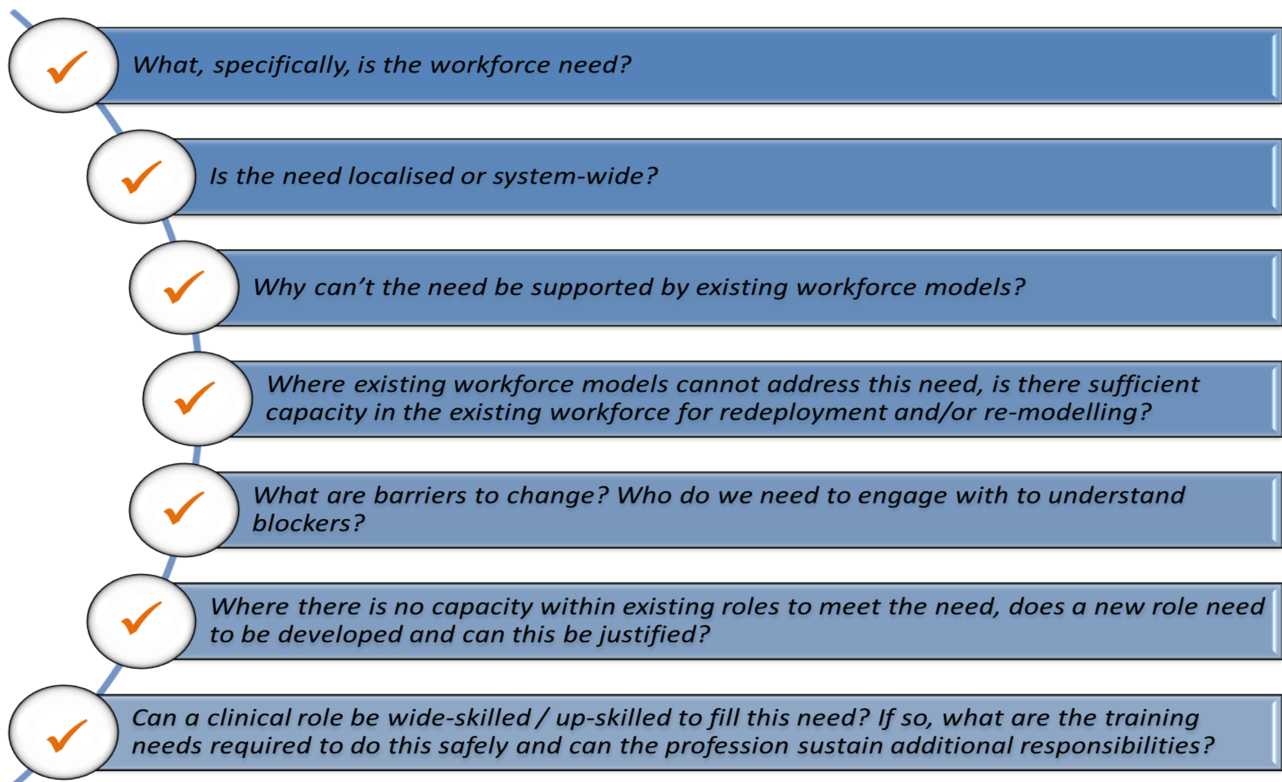


Fig.8 Project Delivery: Commonalities in approach

Commonalities occurred at key points in project research and development, project team and stakeholder engagement strategies and the design of project delivery and evaluation methodologies and communication strategies.

For example, I identified commonalities in the questions that needed to be answered during project research and design, in order to identify, approve and develop projects:



Commonalities occurred across all of my projects, despite variations in theme, target group, healthcare system and workforce need. This suggested that a common project delivery framework could be both appropriate and possible. The aim being to guide and enable the transition of NHS workforce concepts into core business in a consistent and quality-assured way.

By 2018, I believed that I had collected sufficient evidence to present my model framework as an original methodology, capable of underpinning NHS programme delivery. I surmised that adopting a single approach to project delivery across an organisation might enable a consistent, robust approach to project planning, governance, delivery and evaluation; thereby enabling the transition of concepts into core business and supporting transformation at scale. This would be particularly useful as service providers formed into Integrated Care Systems and Primary Care Networks; systems which would require common, trusted and accessible processes which were capable of being adopted across member organisations.

The framework is presented at Fig.9.

My evidence base suggested that a clear and relatable framework could allow an NHS project or programme team to identify and plan their resources, any research needs and the eventual delivery pathway more effectively, as well as ensuring that the future of the project is considered and planned for from the outset.

A framework to guide the transition of NHS workforce concepts into core business

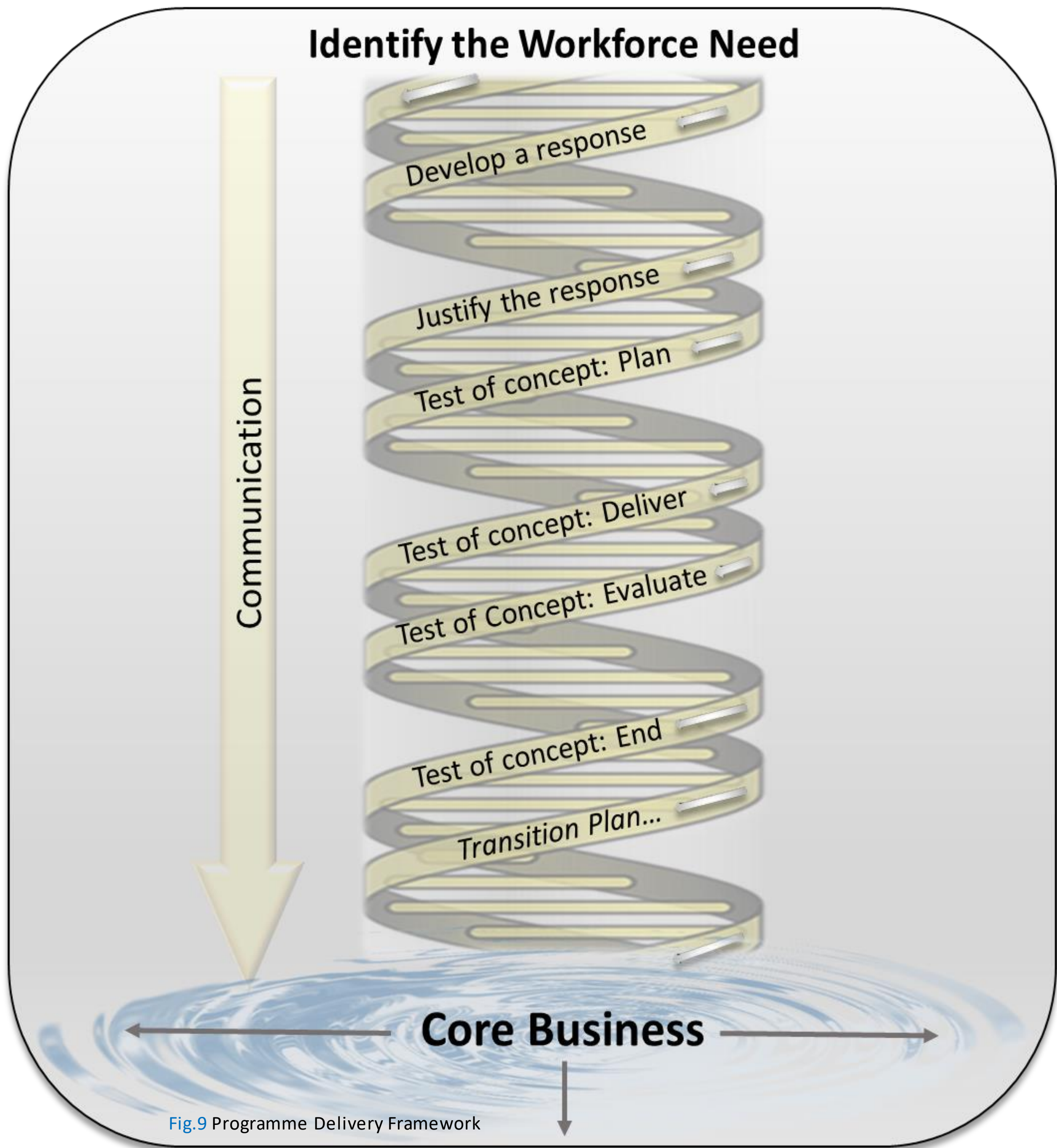


Fig.9 Programme Delivery Framework

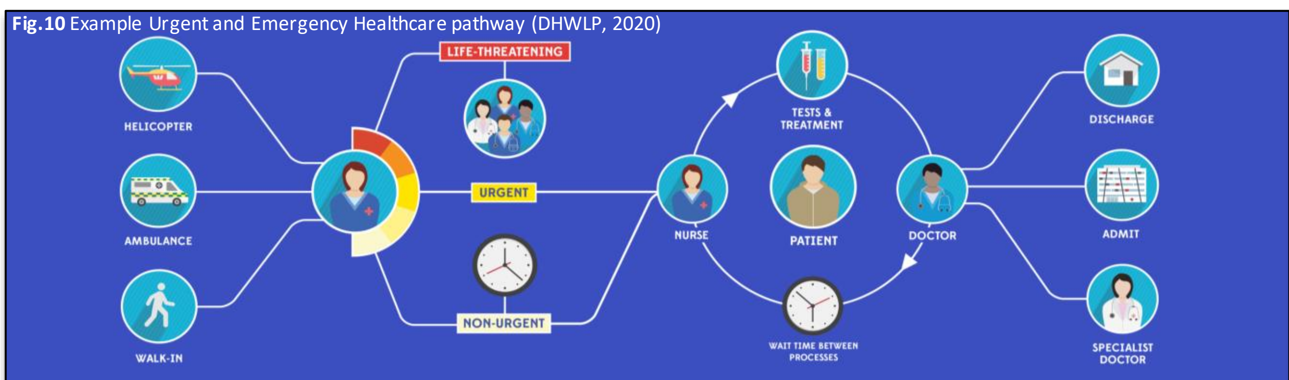
While I had faith in my framework born from trial and error, I had to recognise that many such approaches have been proposed within the NHS (Chapter 3) and none to date had been universally (or even locally) adopted on a recurrent basis. Where my approach is unique is that it was generated from and tested against an NHS evidence base, rather than adapted from an existing public or commercial framework… a 'grow your own' approach. I have used published evidence to demonstrate that the framework process enables intended outcomes to be achieved across healthcare systems and multi-professional target groups.

However, while it is important to be able to present and describe the framework as a series of steps to follow, this on its own, would not show users the importance of managing perception of target markets and stakeholders throughout the process. I knew that I would need to present evidence to show that the framework meets the needs of NHS-wide healthcare systems, as well as a philosophical explanation to link the application of the framework to perception and human factors. The following sections will use a representative sample of projects and evidence from my portfolio to show how the processual framework was developed and proven. Evidence will be drawn from projects which I designed, led and which formed the basis for the published works that underpin this PhD. It is important to recognise that the process of delivering pilot work is iterative and rarely goes as planned. Key to success is the need to capture and learn lessons from project deviations or issues and use these lessons to refine and strengthen the pilot outputs. Essentially, learning what not to do (and why) as well as capturing evidence of good practice and service benefit. For this reason, I will highlight instances where my approach required a re-think and how lessons learned informed development of the framework.

What is the system telling us?

It seems like common sense to suggest that if we allow ourselves to work to a common purpose, we enable the development of joined-up, integrated teams. By learning how to work together and delivering real-world change, all healthcare systems could work together as *One NHS*, to the benefit of the patient. Earlier in this paper I described the sheer complexity of the NHS and the reality that there is no *One NHS*, but rather a homogenous mass of isolated paradigms, with the key commonality being a reliance on public funding. However, despite systems not always working in an integrated way, if one healthcare system experiences challenges, the impact is nonetheless felt across other systems… a *ripple effect* (Fig.10).

Fig.10 Example Urgent and Emergency Healthcare pathway (DHWLP, 2020)



For commissioners and policy makers then, cross-system dependency - the ability to identify and rapidly respond to workforce and patient need across disconnected systems, in a way that allows for transparent and justifiable prioritisation of public funding - is crucial (especially with the current move to integrated care systems), but consistently challenging.

As my involvement in service development projects (and evaluation) led me to develop as a researcher, I began to consider how epistemologies (ways of knowing) could help me categorise the various approaches to identifying workforce need in the NHS.

Ways of knowing how to *define* NHS workforce need typically include, in my experience:

1. **Capacity and demand modelling:** Identifying areas of greatest patient demand and then predicting future demand using purpose-built modelling tools. Dedicated NHS workforce planners across systems use these tools to establish whether the workforce is deployed in a way that will meet patient demand now and in the future. These tools help identify gaps and then justify and trigger interventions.

Capacity and Demand-driven project: Patient flow in the Emergency Department (2020): NHS Improvement data relating to patient transitions in healthcare in 2018 and 2019 (annual statistics) led to the recommendation for a programme to develop a Capacity and Demand Modelling tool for all Emergency Departments in England, as part of the 2020 People Plan "Returning Time for Care" Work-Stream (HEE, 2019). The project was commissioned and launched from April 2020, as a joint enterprise between NHSI, my team at Health Education England and stakeholder groups including the Medical Royal Colleges, NHSX, NHS Digital and NHS Employers. The intended outcomes of this intervention were competency-based workforce planning, patient flow improvements and a reduction in patient healthcare transitions.

2. **Workforce data:** NHS systems analysts collect, review and present workforce recruitment, retention and attrition data to inform workforce planning and forecasting. The driving question is: "are we recruiting staff in sufficient quantity, with sufficient skills, to manage patient demand?"

Workforce Data-driven project: Multi-professional rotating workforce strategies (2015-20): Integrated Care System (ICS) workforce planning and analytics suggested a benefit to recruitment and retention from the development of enhanced, 'wide skilling' pathways for multi-professional teams, supported by national policy and re-aligned commissioning (HSCC, 2018). One such pathway involved multi-professional *rotating* workforce programmes encompassing areas such as frailty, urgent care, cancer survivorship, and child health represented local and national workforce transformation, supported by multi-organisation teams, guided by identified patient need and demonstrably supporting the career aspirations of the workforce (Dale et al, 2017). Where roles are required across healthcare settings and do not exist in sufficient numbers to support need across systems, 'sharing' roles through rotational workforce models have been shown to address recruitment and retention challenges while also supporting the wellbeing and retention of clinicians working in this way (Dale, Wilkie et al., 2017). I led the development of multi-professional rotating workforce programmes throughout my time at Health Education England. Starting with rotational fellowships for GPs in their first five years of practice, the development of a national framework and evaluation process allowed the model to expand to cover paramedics, pharmacists, physician associates, foundation doctors and advanced clinical practitioners. Evaluation evidence from my projects demonstrated the value of rotating workforce models to staff recruitment, retention and wellbeing (Dale, Wilkie et al., 2017), Physician Associates (Cottrell et al., 2020) and Paramedics (NEL CSU, 2019).

3. **Forecasting supply vs. demand:** The process of monitoring and forecasting trainee numbers across clinical professions and looking for recruitment issues which may lead to either oversupply or undersupply in the future workforce pipeline. With evidence to suggest shortfalls, interventions to increase recruitment-to-training or create new training pipelines can be initiated.

Supply & Demand-driven Project: Pharmacist Advanced Clinical Practitioners (2014-20): Following NHS England and Health Education review of GP and Emergency Medicine specialty trainee numbers, a shortfall in graduates to workforce vacancies was noted. Simply put, there were not enough doctors coming through the training pipeline to meet workforce and patient demand. The *Emergency Medicine Taskforce* was initiated to consider alternative workforce strategies (Chapter 1). As part of the system-wide push to consider the potential for wide-skilling clinicians and establishing new models of care to meet demand, my programme developed a series of novel approaches. One such was the Pharmacist ACPs in UEC programme. The world-first, five-year programme developed the concept of pharmacists working clinically as ACPs and delivered a series of interventions which culminated in the integration of pharmacist ACPs across community, primary and secondary urgent and emergency healthcare systems (Aiello et al., 2017). We will follow this programme throughout this chapter, using the programme of linked projects to demonstrate my model framework.

4. **Financial modelling:** Analysis of commissioning models to ensure that recurrent investment is being supplied to areas of need identified through the above processes. With the development of 21st century healthcare systems like Integrated Care Systems and Primary Care Networks (NHSE, 2020), the alignment of strategic workforce planning to appropriate, relevant commissioning models are crucial to ensure longevity (Ahluwalia, 2018).

5. **Policy:** Where workforce or commissioning leads identify evidence of need, this evidence can be presented within national government policy or a service, system or geography-level strategic proposal, with a recommendation to allocate public funds to address the need through a targeted, local, system-wide or national intervention. Once enshrined in government policy, those recommendations then form the basis for commissioners to plan, fund and progress workforce development programmes.

Chapter 1 presented strategic drivers for workforce transformation in my scope of practice. Related policy including the *NHS Five Year Forward View (2016), Securing the Future ED Workforce in England*, *Long Term Plan (2019) and People Plan (2019-20)* were underpinned by evidence for change across health and care systems. When a policy is commissioned, typically it will be in response to an identified, system-wide workforce need from service providers. Evidence will be collated by a nominated strategic team and drafted into policy. The policy will be ratified by key stakeholders and signed off by a lead organisation – typically the Department of Health and Social Care (DHSC). For example, a combined call to action by NHS Service Providers and professional bodies in 2017 led to NHS England, NHS Improvement, HEE and the Royal College of Emergency Medicine being jointly commissioned by DHSC to develop a workforce strategy – *Securing the Future of the Emergency Department Workforce in England* (2017). This document presented evidence of workforce need and, in a novel approach, interventions which could address the need. The aim of this document was to make a case for investment in Emergency Department workforce redesign. I presented evidence and case studies related to recruitment and retention strategies for Pharmacist Clinicians (Aiello et al., 2017), GPs working rotationally across acute and emergency care (Dale et al., 2017) and the development of Physician Associates in Emergency Departments (Aiello, Roberts, 2017). I also delivered new work, including the world-first *Clinical Educators in Emergency Departments* and *Emergency Medicine Leaders* projects from 2018 (HEE, 2019, 2020). The first step in the framework: 'identify workforce need' was progressed in this case by presenting evidence of need and possible solutions to policymakers.

6. **Stakeholder Communication:** A professional group or healthcare system might choose to directly communicate a workforce need and request support from service commissioners. This may be the case where a need is not clear from metrics alone, or where an immediate risk to healthcare delivery has become apparent to a workforce. Organisations which represent workforce groups – for example, a regulator, professional body or lobbying group - may collect qualitative evidence from members to highlight a risk; for example, retention risk arising from clinician burnout or lack of access to supervision. Such issues might be communicated to system leaders or commissioners responsible for supporting that workforce or system, with or without recommendations.

Stakeholder-driven Project: Following communicated clinical workforce shortages in Emergency Departments, the 2014-20 *Pharmacist ACPs in Urgent and Emergency Care* programme was conceived as a long-term intervention with an aim to measure the service benefit, workforce impact and return on investment of a 'wide-skilled' existing role in the frontline clinical workforce. Pharmacists practice across community, primary and secondary care sectors and at that time were an oversupplied workforce. The impact of developing this traditional role to work in new ways within multi-professional teams across healthcare systems…the *ripple effect*… was unknown, but anecdotal evidence suggested significant potential for pharmacists to meet system and patient need. The programme included a portfolio of projects intended to understand and evidence the capability of pharmacists in this respect.

A workforce lead or commissioner might then be lobbied by workforce groups to investigate and create a case for change, with recommended interventions and investment as the outcome. The key challenge then for a service commissioner is to understand what the impact of this specific need on the wider NHS is. If we make an intervention within one area of the workforce, how will this change the way that this workforce provides patient care? If we divert finite investment to meet this need, where will investment need to be proportionately reduced and what will the consequent impact be? What will be the overall impact on other healthcare systems? Following identification of workforce need, it is necessary to choose and justify a response – an intervention – which presents a clear rationale for the chosen approach and takes into account the ripple effect of the intervention. The next parts of my framework involve consideration of key influencers, blockers and drivers and a clear argument for why the chosen intervention is favoured.

- Is the workforce need clearly defined or non-specific?
- Does the system know what the intervention needs to be?
- What is the likely impact of the chosen intervention?

Is the workforce need clearly defined? The 2018-20 HEE *Clinical Educators in Emergency Departments* project was developed following evidence from the 2017-18 GMC Survey relating to staff (trainee and registered clinicians) access to shop-floor clinical education. Forty-five (45) Acute Hospital Emergency Departments (ED) were identified as having limited or no access to education, which was considered a risk to maintaining an appropriately skilled workforce in that setting (GMC, 2017) (NHSI et al., 2017). In this case the workforce need was clearly identifiable: poor access to shop-floor clinical education in the ED. The response, therefore, was to design a specific intervention to address this specific need.

The development of a bespoke Clinical Educator role was believed to be an appropriate response. Capacity of the workforce to undertake this new role and impact on workforce retention and wellbeing became the focus of the HEE project. While the intervention may be appropriate, testing its potential to address the need as well as whether the system can sustain it in the long term was considered necessary.

What if the workforce need is undefined or non-specific? In 2017-18, 23.8 million Emergency Departments (EDs) attendances were recorded in England; an increase of 22% since 2008-2009 (NHS Digital 2018). The NHS England Mandate stated that at least 95% of patients attending EDs should be admitted, transferred or discharged within four hours (Department of Health and Social Care 2018). However, in 2018, NHS Digital found that 12% of patients attending EDs in England were not admitted, transferred, or discharged within the target of four hours of arrival (NHS Digital 2018). Delivering timely and safe care using the four-hour target was identified as particularly challenging because of a historical mismatch of (workforce) supply and (patient) demand (NHS Improvement 2017). Where the workforce need relates to the general capacity of multi-professional teams to manage patient demand, that demand is undifferentiated, so questions needed to be asked of the system in question to determine what intervention/s might enable system improvements to meet expectations. Where data demonstrated that the Emergency Department workforce – both in terms of numbers and skills mix – was (and remains) unable to meet ever-increasing patient demand, capacity was believed to be a contributing factor. Service providers struggled to attract or recruit more clinicians to Emergency Departments, as the ED was seen as an undesirable career move. Retention of the ED workforce was similarly challenged for the reasons discussed in Chapter 1 (Pg.18).

What is the likely impact of the chosen intervention? In this case, addressing the workforce need involved consideration of capacity, aspirations, supervision, development opportunities and wellbeing. A specific response was not immediately identifiable beyond improving recruitment and retention within the ED workforce. Considering the potential for sustainable recruitment to the ED workforce, NHS workforce data in 2014 showed, for example, a national oversupply of post-registration hospital pharmacists in England (NHS England, 2014). Recognising that the pharmacist workforce supply was numerically capable of re-deploying to areas of need, my team aimed to narrow the potential solution into an intervention by investigating the potential of pharmacists to move beyond traditional roles and wide-skill to meet patient need in Emergency Departments and (later) other systems experiencing workforce challenges (Aiello et al., 2014). The next step involved either proceeding to an intervention based on the evidence – in this case deploying a new and (at that time untested) pharmacist clinician role in the ED – or determining whether a test of concept would be required to develop an evidence base and guide an intervention. The following sections will focus on this programme and the steps required to form and test interventions.

To plan and justify a response, I recognised the need to address the following challenge areas:

- Does available evidence allow us to progress the intervention, or is research or pilot work needed?
- If a pilot is considered necessary, what are we asking the system to do and how?
- What are the initial blockers and how might we address them?

Does available evidence determine whether research or pilot work is needed?

Remaining with the pharmacist clinician programme, my team interrogated programme files held by NHSE and HEE and conducted literature searches of existing evidence. It transpired that experienced hospital pharmacists worked in UK Emergency Departments (ED) since the early 2000s and possibly in the 1990s. By December 2018, there were 7,612 pharmacists with independent prescribing rights registered with the national regulatory body, the General Pharmaceutical Council (General Pharmaceutical Council 2018). However, evidence suggested that clinical pharmacist roles were primarily concerned with pharmaceutical care and medicines optimisation (Box 4), as opposed to undertaking clinical management of patients presenting at Emergency Departments (ED) (HEE & NHSE, 2019). I concluded that there was insufficient evidence to satisfy HEE processes for investment in a workforce development programme.

Box 4: Evidence for the intervention? *Not much...*

A number of locally isolated examples of good practice in UK EDs and urgent care settings exist but there is little published evidence to support the role of pharmacists practising clinically in these settings. Results from a study by Ahmed *et al*. suggest that pharmacists might manage up to 5% of ED attendees, although the majority of these were minor cases. Published literature examining the role of clinical pharmacists in EDs (based on a UK 40-hospital site questionnaire in 2008) demonstrated that pharmacists support clinicians with guideline development and review, patient group directions, provision of training, advice and drug history taking (Collingnon 2010, Henderson 2015). Further evidence showed clinical pharmacists undertake a variety of roles in the emergency department including medicines allergy confirmation, the support for safer prescribing, medicines reconciliation and reducing of the potential for adverse drug interactions (Aiello et al, 2019).

While I had identified a workforce need – *recruitment and retention challenges in the Emergency Department* - and a sustainable workforce – *pharmacists* – with a potential to address that need, I could not justify launching a workforce development programme for pharmacists. A paucity of evidence to justify developing pharmacist clinician roles stood between identified workforce need and the proposed response. I had no evidence base to support the contention that pharmacists would be confident and competent in clinical examination and health assessment in the Emergency Department. With no existing approach or evidence base to justify a response, any intervention would need to develop its own evidence base in a way that demonstrated a safe, justifiable, sustainable and value-added approach. To achieve this, I needed to consider how to articulate guiding questions and then how to interact with key stakeholders to find the answers.

I recognised that asking questions of the system would inevitably require the ability to translate responses into shop-floor test-of-concept studies. Such studies would need to be evidence based, with a stakeholder-led delivery model and evaluation designed to respond to the guiding questions. Following the exploratory phase described above, the '*Pharmacists in Emergency Departments*' (PIED) project was conceived as an evolving, staged test-of-concept study; the first in a series of linked, iterative projects, intended to evaluate the potential for pharmacists to clinically manage patients; at first as a pilot in the Emergency Department and then across wider urgent and acute healthcare systems.

The primary aims are shown at Fig.11.

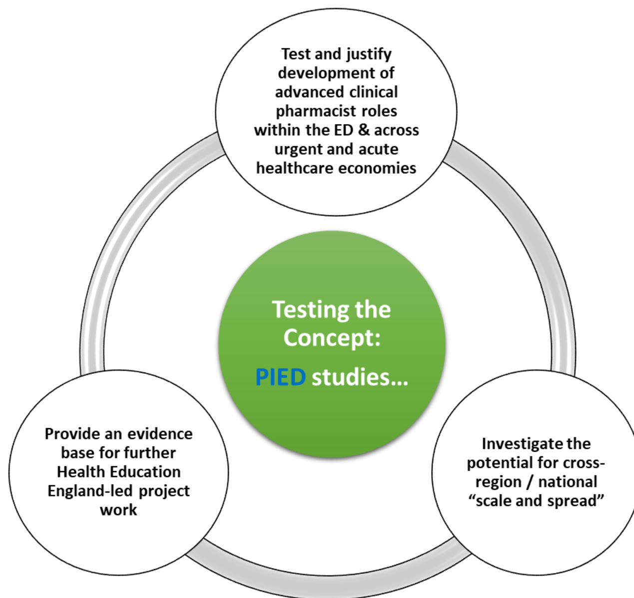


Fig.11 *PIED* Programme Aims

If a pilot is considered necessary, what are we asking the system to do and how?

Following initial review of workforce data, policy (EM Taskforce recommendations and NHSE UEC workforce strategy at that time), existing pharmacist development pathways and feedback from our stakeholder networks, the stakeholder group defined an overarching hypothesis to test as:

"Pharmacists are capable of confidently and competently managing patients as advanced clinical practitioners."

To assist the programme team in testing and proving (or otherwise) this hypothesis, guiding questions were defined:

1. *"To what extent can pharmacists currently manage patients in the Emergency Department (ED)?"*
2. *"What extra training is needed to create an advanced clinical ED pharmacist?"*
3. *"What can a pharmacist uniquely contribute to the joined up, multi-disciplinary, multi-skilled urgent and acute / emergency care workforce of the future?"*

What are the initial blockers and how might we address them?

PIED proposed a radical change in the scope-of-practice of pharmacists, so the perceptions of users (pharmacists) and stakeholders (rest of the ED workforce and its commissioners) would either become blockers or enablers for any conclusions to the study. From the outset then, it was considered crucial for user and stakeholder groups to drive development of the hypothesis and agree guiding questions. It would have to be clear that our input as a programme team would be evidence-based, objective and facilitative. Any intervention would have to demonstrably be 'of the workforce, for the workforce, by the workforce,' rather than being imposed upon them. Influencing the perception of the end-user through an '*it was our idea all along'* approach was considered key to the integration of this or any other innovative workforce transformation proposal. This approach became a fundamental success-enabler and would characterise all of the projects that delivered from this point on.

From 2014, the above hypothesis, questions and engagement strategy formed the basis for a service improvement programme: the '*Pharmacist Clinicians in UEC*' suite of studies (Fig.12). The first study - *Pharmacists in Emergency Departments (PIED)* - was intended to be a live, 'shop-floor' test of concept, engineered to enable the target workforce to take an active involvement in the delivery and evaluation of the response to the above questions.

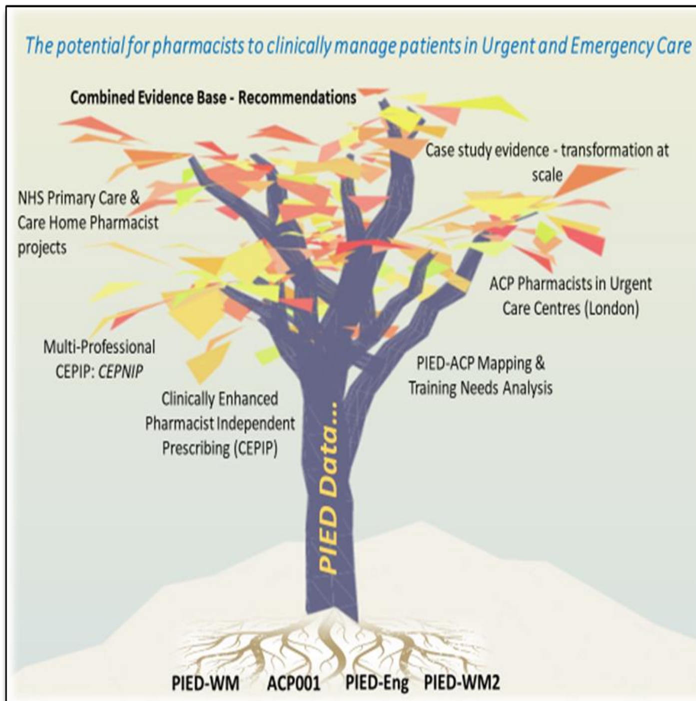


Fig.12 *PIED* Projects and Outcomes

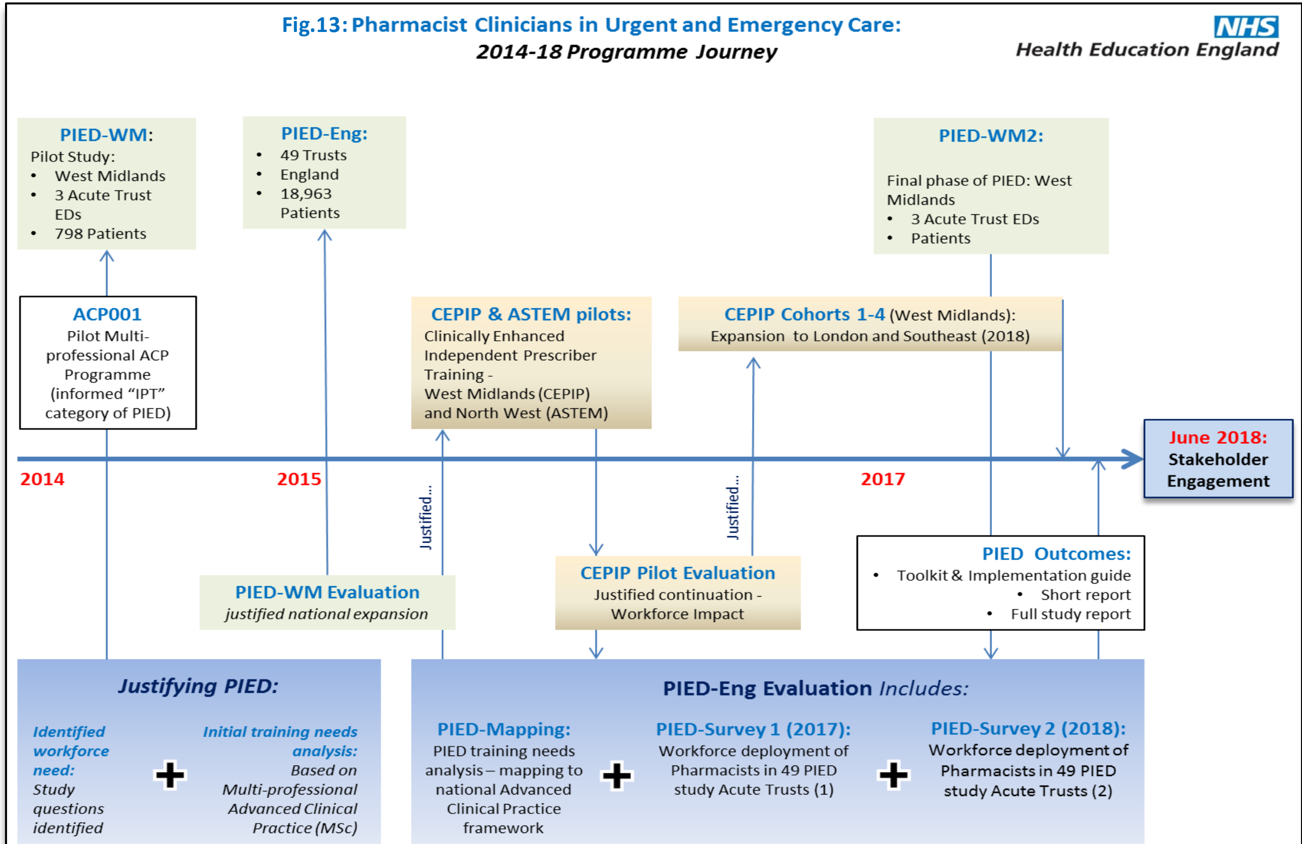
From 2014, HEE and partners including Aston University School of Pharmacy, General Pharmaceutical Council (GPhC), Royal Pharmaceutical Society (RPS), Royal College of Emergency Medicine (RCEM), Centre for Pharmacy Postgraduate Education (CPPE), NHS England, NHS service providers (employers) and the national Patient Advisory Group agreed to test the potential of pharmacists to clinically manage patients as an Advanced Clinical Practitioners in Urgent and Emergency Healthcare settings (Aiello, Hughes, 2014).

I led the programme, with an aim to identify and evidence the potential of the pharmacist and then the training required to undertake Advanced Clinical Practice roles competently and confidently.

To manage complexity and enable iterative, evidence-based development, the Pharmacist Clinicians in UEC programme was sub-divided into a series of linked projects, each with discreet outputs. The programme included six iterative service development projects and four unplanned 'spin-off' projects.

The service development projects were designed to enable key outcomes from each project to evolve from the previous one. The aim was to provide an evidence base that would realise ongoing output and system benefits and allow for unexpected deviations, without requiring the full suite of projects to first be completed. Also, recognising that you only opt for a pilot because you *don't know how the intervention will turn out*, each project was designed to include specific outputs and break points, in the event that continuation was proven to be inappropriate (essentially, building in the option to end the programme, in the event that any project within the programme should disprove the hypothesis).

The *PIED* delivery timeline and interdependencies are shown at Fig.13 below.



The ultimate aim of the programme was to provide a collective response to the study questions, prove the hypothesis above and show system impact through integration of findings into NHS core business, across healthcare systems.

Reflection: Author's approach to Project Management in the NHS

It is relevant during this planning phase section to describe project management as a key underpinning for the whole framework and in particular during the planning phase. However (and fair warning) this is a dry process, so I have tried to make it more exciting for the reader by colouring this section blue (feels soothing). The NHS does not have a standardised approach to project management, so there is no training for NHS project managers and therefore no standardised process to enable good practice. As with any career project manager, my ability to manage NHS projects developed iteratively, drawing from my previous experience.

The Project Management Institute define a 'project' as a "temporary endeavour with a beginning and an end, used to create a unique product, service or result" (PMI, 2017). This is loosely applied in the NHS, with projects often running and evolving organically for several years or indefinitely. Without a defined approach to NHS project management, I chose to adopt a commercial project methodology aligned to the commercial PRINCE2 framework and then revise over time to suit the unique needs of the NHS – in particular, the level of fluidity required to manage NHS projects. My observation over six years of NHS project management is that the rigidity of commercial frameworks like PRINCE, LEAN and SIGMA are rarely directly applicable (more on this in Ch.3). Such methodologies should, in my view, be used as 'tools in a toolbox' to assist project design and management, rather than being tempted to force the project to fit an overly rigid methodology.

A 'project manager' in a commercial setting is responsible for day-to-day management of the project and must be competent in managing the six aspects of a project, i.e. scope, schedule, finance, risk, quality and resources (APM, 2020). While managers in the NHS use these terms, the role scope of the project manager and the definition of a project vary significantly across healthcare systems. In most NHS teams that I have encountered in my career, while roles vary, the structure of a project or programme team typically includes an administrator, at least one project support officer, project manager, programme manager and work-stream lead role (Senior Responsible Officer – decision maker with budget control). Project teams with a clinical focus will usually have access to clinical experts within the team or as part of dedicated stakeholder or user groups. And that is pretty much where the consistency ends!

On reflection, the Pharmacist Clinicians programme helped me refine my project management technique throughout the five-year journey. For the early *PIED* projects, project planning would include stakeholder and user identification and engagement; project team design; proposal drafting; executive / SRO review of the proposal; approvals-in-principle; business case and communication strategy development; business case approval; pre-initiation planning (to include evaluation commissioning and setup) and joint project and evaluation launch. While this process has remained the basic underpinning for all of my projects to date, project documents including communication strategies, business case and proposal design have been refined into a single Project Initiation Document (PID); the 'instruction manual' for the project. Without wishing to include the pro forma PID (13 pages!) or turn this paper into a project management manual, it is important to recognise the value of robust project management processes to enable successful project delivery.

My view is that the only 'bad' pilot is a badly managed one. To allow context for the reader, the following sections summarise the key elements of my project management process.

1. **Project Proposal Document:** This is required to describe the project to stakeholders and as a means of requesting investment. A model proposal is shown below:

<PROJECT TITLE> **Executive Summary**	
Anticipated Project Outcomes: THESE SECTIONS SHOULD INCLUDE A HIGH LEVEL SYNOPSIS OF THE FULL BUSINESS CASE (EXEC SUMMARY) – TOTAL LENGTH 2 SIDES.	
Strategic fit:	
Scope of Project:	
HEE Investment Required (20XX-XX): To support the programme set-up and launch costs. This is a single / multi-source budget and is detailed at (X) in the business case.	
Resource description (whole life costs):	Cost £
Total Cost to HEE (THIS FINANCIAL YEAR): Pre-Commitments (costs for subsequent financial years):	
Financial implications beyond the current financial year that need to be considered? Costs, timeline and justification need to be articulated here.	
How does this investment demonstrate or contribute to improved value for money?	
What are the consequences and risks if this proposal is not supported?	

2. **Project Business Case:** The mainstay of any project, the business case describes the project and is intended to be the main source of project governance and control… the 'instruction manual' for the project. My business case approach is laid out in two sections:

A. **Context and Rationale** (*what is it and why do it?*) – I typically precis this section with the proposal above. Content includes:

- Background – what led to this intervention?
- Current Situation – Strategic drivers.
- Recommendation – Project Proposal (short summary, delivery window and cost as above).
- The justification for HEE involvement.

B. **Project Plan** (*how are we going to do it?*): Updated throughout the project and includes:

- Delivery Model (what the project is),
- Is evaluation needed? *Plan… including ethics approval and procurement process,*
- Finance Model / Investment plan & contracting / procurement processes,
- Anticipated Outcomes / Deliverables – includes benefits realisation plan,
- Timelines for delivery (what are the timescales and associated outcomes for delivering this project?),
- Project Governance and Quality Assurance, including:
- Quality Assurance: Key Performance Indicators (KPI) (dates and milestones) and milestone plan,
- Risk Assessment and Strategy – including monitoring, quality assurance and reporting schedule
- Interdependencies (short narrative identifying any key linkages to other HEE programmes),
- Communication strategy,
- Project team, key stakeholders and user groups – identify and capture contact details,
- Transition Plan (especially for pilot / test of concept work) – *How do you plan to take the concept to core business?*

Evaluation: The business case will include a review of whether evaluation is needed. If it is determined that evaluation is necessary, the rationale and plan will be added to the business case, with key points including:

- Justification (why do it?)
- Evaluation methodology
- Evaluation procurement route
- Evaluation cost and delivery timeline

For NHS research, ethics approval through IRAS and / or HRA may be necessary if the work is a Service Improvement Project and always necessary if the work is a Research Study. This can be a lengthy and unpredictable process, which why I commission the evaluation during the project planning phase.

Funding and affordability: A key part of any NHS project is a transparent and justifiable approach to the spending of public monies. My business case will describe the activity/s to be funded, the funding source and funding required. The business case will also identify where there has been or needs to be rrecourse to other public funds. For most NHS activity, a standard Goods and Service Contract is required. I elected to align my business case funding proposal with the layout of the Contract commercial schedule for practicality (ensures that business planning and contracting are aligned). A typical commercial schedule is shown below:

Total Contract Price		£80,000
Activity / Objective / Deliverable		**Due Date**
	Recruitment to all posts specified at Schedule 5	1/2/18
	Delivery of interim evaluation report	1/3/18
Financial Breakdown		
	Activity element	**Cost (£)**
1	Evidence of recruitment to all posts specified at Schedule 5	40,000
2	Delivery to the Authority of a single interim evaluation report, with content as specified at Schedule 5	40,000
3		
	Sub-Total	**80,000**
	VAT (20%)	**0**
	Total Cost	**80,000**

Mitigating Identified Risks, Considering Issues and Logging Changes: A member of staff will be tasked during project planning to maintain a risk register, issues and change log, which will be submitted at agreed intervals to the SRO and will form part of the project PID. A full risk register for the project will be developed and managed separately, as part of the project PID. The Risk Register will be reported - at project start, project conclusion and at ad hoc intervals where variation occurs as a result of risk mitigation - to the SRO. To ensure synergy and ease of reporting, risk registers for each of my projects follow the same format:

Risk No. & Owner	Description	Likelihood	Impact	RAG Rating	Impact Date	Mitigating Action

By the point that the project is ready to launch – the 'delivery' phase – the PID will be open and populated with as much detail as possible. The PID is a live document and will be added to and revised in a version control process, throughout the life of the project. The PID will officially be closed by the project SRO once the project concludes and all outputs delivered. With the opening of the PID and end of the planning phase, the project team is ready to move to delivery…

The *Pharmacist Clinicians in UEC* programme adopted a combination of theoretical, scientific, academic and live test-of-concept approaches to determine the potential role for ACP Pharmacists practising across Urgent and Emergency Healthcare settings. The programme portfolio and timeline are summarised below:

Time	Project Name	Description	Comments
2014-2015	Pharmacists in Emergency Departments: **PIED-WM1**	West Midlands Pilot study – 3 pharmacists, 3 EM Consultant Doctors and MDT input across 3 West Midlands Trust EDs – 782 patient data sets - External evaluation (Aston University).	Project conclusions justified national expansion of the study (PIED-Eng)
2015-2016	Advanced Clinical Practice pilot: **ACP001**	12-month Advanced Clinical Practice programme commissioned in West Midlands - *Advanced Health Assessment* and *Clinical Examination Skills* modules (60 credit level PGDip) – 15 candidates enrolled, including the 3 PIED-WM pharmacists.	15 candidates included 3 pharmacists, 3 nurses, 3 Occupational Therapists, 3 paramedics, 3 Physiotherapists. Aim to test ability to undertake ACP training for pharmacists and the benefits of a multi-professional learning environment – informed description of "IPT" training category for *PIED-Eng* study and evidenced the need for preparatory training for Pharmacists (CEPIP).
2015-2017	National PIED study: **PIED-Eng**	National expansion of PIED-WM with a national cross-section of 49 study sites and 18,613 patient data sets.	Evidence base justified *CEPIP*, Pharmacists in Urgent Care Centre project, multi-professional ACP and NHSE Primary Care / Care Home Pharmacist projects, as well as continuation of *PIED* portfolio. Largest known study of its kind in the world – presented at UAE, Asia, US, S.America, European conferences. Evidence shared with UAE clinical workforce teams.
2014-2019	Clinically Enhanced Pharmacist Independent Prescriber [IP] training: **CEPIP**	GPhC-accredited Level 7 PGCert programme to train Pharmacist Independent Prescribers, with blended learning to introduce pharmacists to health assessment and diagnostics.	Successful West Midlands´ pilot in 2014 led to over 450 pharmacists trained in Midlands from 2014 and across London from 2018. Evaluated positively and received well by workforce.
2018	Clinically Enhanced Pharmacist & Nurse IP (**CEPNIP**)	Expansion of *CEPIP* to investigate the suitability for a multi-professional cohort – primary and secondary care employers – single cohort of 45 nurses and pharmacists at University of Birmingham.	Evaluated positively – positive impact to learning environment, learner experience and subsequent multi-professional working (post-course) reported. Programme was tested and confirmed for potential to also support paramedic prescribers.
2016-2018	**PIED-ACP Mapping**	PIED training needs analysis – mapping PIED data to national ACP framework.	Concluded that ACP pathway is appropriate to meet training needs identified during PIED.
2017	**PIED-Survey#1**	Workforce deployment of Pharmacists in the 49 PIED study Acute Trusts (1)	Case study evidence compiled to support deployment of Pharmacist Clinicians in the ED.
2017-2018	**PIED-WM2**	Final phase of PIED study and evaluation – Revisit PIED data with ACP Pharmacists.	Included 3 PIED-WM1 Pharmacists - now ACPs. Review ED Pharmacist ACP capability. 1,998 Patients.
2018	**PIED-Survey#2**	Workforce deployment of Pharmacists in 49 PIED study Acute Trusts (2)	Secondary capture of PIED-Eng sites – follow-on from PIED-Survey#1
2016-2020	**Pharmacist ACPs in Urgent Care Centres**	Training 18 Pharmacist ACPs to work in 6 Urgent Care Centre EDs across London – 2 phases from 2016-2019	Evaluated by Aston University – evidence demonstrated workforce impact and ROI – ACP confirmed as appropriate training.

I was determined to protect the integrity of the data and believed that external evaluation with scientific peer review would add rigour to the programme conclusions and recommendations.

Aston University was commissioned to provide a mixed-methods evaluation throughout the programme. Where the iterative *PIED* projects involved research with a focus on competency mapping, spin-off *CEPIP, CEPNIP* and *ACP001* projects involved translation of *PIED* evidence into pilot training programmes, intended to test development pathways for Pharmacist ACPs across Urgent and Emergency Healthcare systems. The aim of *CEPIP* and *ACP001* was to determine whether an education programme could prepare pharmacists to undertake Advanced Clinical Practice as part of a staged, defined, career development pathway. The final phase of the programme – *Pharmacist ACPs in Urgent Care Centres in London* - was a shop-floor application of the entire programme evidence base (Wright et al. 2018). This project tested the 'real world' application of this intervention and the suitability of ACP training to safely and appropriately develop ACP Pharmacists; particularly aligned to the RCEM-credentialed ACP pathway for those pharmacists working in Emergency Departments. As the portfolio of projects were delivered, the team maintained the project management processes described above, to ensure consistent governance and quality throughout.

Reflections: *Managing the unpredictable…*

My framework was built, tested and refined across the *Pharmacist Clinicians* programme and other test-of-concept projects in my portfolio. While each project was unique in its target audience and output, a common factor across all pilot work is that pilots rarely progress or conclude in a linear or predictable way. This unpredictability is exacerbated in long-term programmes like *PIED*, where changing human factors, political and economic climate and evolving perception of need mean that planning needs to include speculation on possible future states. During delivery, evidence will emerge that will either prove, disprove, expand or narrow the original hypothesis. Evidence might also identify unexpected benefits and disbenefits. Part of any programme delivery plan and evaluation should therefore include a series of interim and final recommendations as to how to deal with the unexpected and any new work arising as a consequence. This helps ensure the sustainability, relevance, and longevity of any output… essentially the capability of a pilot product to flex with the times and remain useful. This was entirely the case with *Pharmacist Clinicians*. During its 2014-20 journey, the programme faced changes of government, a change of NHS leadership (Secretary of State for Health), Brexit, an economic downturn, sweeping health reforms with changes of government, at least five related workforce policies (in my area of practice alone), an HEE spending review that led to 30% cut in running costs and most recently, the COVID-19 pandemic. The impact of the latter on the health and care system – in particular how a dramatically impacted economy will affect healthcare commissioning is unknown at the time of writing, so is outside the scope of this PhD (although I will review in my conclusion).

My NHS career has taught me that any workforce transformation or pilot delivery process needs to be flexible enough to adapt to the unpredictable, while rigid enough to keep the work definable and relevant. In the case of *Pharmacist Clinicians*, while the original hypothesis was ultimately proven, the journey to that point involved recognising and adapting to the unexpected throughout delivery, as well as overcoming blockers, concerns, unexpected need and changing perceptions. Initially, the intention had been to carry out *PIED-WM, PIED-ENG, PIED-WM2* and linked mapping and survey projects as consecutive, iterative pieces of work (Page 39). Recommendations for training and integrating pharmacist ACPs were the intended output, with no plan to actually deliver training during the programme. However, at each step in the process, evidence brought to light issues that would require deviation from, additions to and risk management within the programme.

Essentially, we were on a voyage into the unknown, which meant learning from emerging evidence and evolving the programme as we went. The study methodology needed flexibility in investment and resources to meet changing, planned and unplanned demand. Some of the key changes and how they were managed are summarised below.

Testing the ACP Training Model: ACP001 Pilot (2015)

Evaluation of the first project in *Pharmacist Clinicians - PIED-WM* - concluded that pharmacists were theoretically *competent* to train to the national Advanced Clinical Practice Framework (HEE, 2015), which was determined (again, in theory) to be an appropriate training model to meet pharmacists' needs (based on patient presentations identified in the study). However, their actual *capability* to undertake and complete training was uncertain (Hughes, Aiello, 2014). While *PIED-WM* data showed agreement with the programme hypothesis in theory, the data were challenged by ED workforce leads, Royal College of Emergency Medicine and Royal Pharmaceutical Society as to: 1) whether pharmacists were capable of undertaking an entirely new training pathway (could they physically manage the training?); 2) whether the national HEE Advanced Clinical Practice (ACP) pathway was the most appropriate training route for a pharmacist (compared to any other training pathway) and 3) whether a pharmacist-only cohort or multi-professional learning environment would best suit the pharmacists' unique training needs.

I knew that, while the conclusions were compelling, the small-scale theoretical *PIED-WM* study could not respond with authority to these challenges, so further work and 'shop floor' pilots would be needed to test and evidence the model training pathway. The *ACP001* project was subsequently launched in 2015, as a 12-month, multi-professional training programme, with a cohort of 15 clinicians (3 from each of 5 different professions) including the 3 pharmacists from *PIED-WM* (HEE, 2019). Working with the project and evaluation teams, I re-engineered the programme pathway and expanded the evaluation methodology so that *ACP001* evidence could feed into the *PIED-ENG* project, which was due to be launched at the same time. By launching *ACP001* and *PIED-Eng* projects simultaneously, the programme timeline was unaffected, but additional cost and risk were incurred. Releasing 15 clinicians into a 12-month training pathway was justified by using an existing programme rather than trialling a completely new training programme. For the 12 non-pharmacists on the pilot cohort, this was training that was established and recognised by their professions and would support their professional development (justifying their involvement). Offering funded training provided an incentive to join the pilot and a benefit to the individual and their workforce teams which balanced the risk to employers, participants and to the public purse.

Developing Bridging Training – Pharmacy-to-ACP: *CEPIP (2016-20)*

Evidence from *ACP001* supported the national ACP framework as a training pathway which pharmacists could undertake (all three pharmacists completed the training successfully). However, feedback from participants and course teams identified a steep learning curve which could rule out less experienced pharmacists. *ACP001* evaluation recommended that bridging training in clinical assessment and diagnostics should be undertaken before attempting the programme (Aiello et al., 2017). Following the pilot, stakeholder engagement showed concern from employers and commissioners that release of pharmacists into additional bridging training would result in increased backfill, supervision and education costs.

With evidence suggesting that immediate entry to ACP training was inappropriate, the ACP-Pharmacist route was therefore challenged as (potentially) a poor return on investment (as the utility of pharmacist ACPs were not yet known). The whole *PIED* programme could have stopped in its tracks here. However, a series of critical reviews and stakeholder workshops led to a suggestion that adapting an existing training model that was already used by pharmacists might provide an appropriate bridging mechanism.

Responding to challenge and following competency mapping evidence gained during *PIED-Eng* and *ACP001*, the *Clinically Enhanced Pharmacist Independent Prescriber* (CEPIP) programme was developed from 2016 to explore the possibility of adapting an existing training programme (independent prescriber training). *CEPIP* was developed to suit both the clinical training needs of pharmacists and financial constraints of their employers and education commissioners. *CEPIP* also required regulator (GPhC) approval, to ensure that the clinical content did not detract from the regulator-approved independent prescriber training (Aiello et al., 2017). This was an entirely unexpected part of the journey, so required a new, bespoke (realist) evaluation, a revised stakeholder engagement strategy and a phased pilot study. The only way to test this approach was to deliver the training in sufficient numbers to evaluate, so additional cost was incurred in delivering the 2-phase pilot across four course providers in the West Midlands, with 102 trainees (Box 5). To accredit the training programme, regulator and commissioner scrutiny required consultation with course providers, professional bodies, regulator, national patient advisory group and the workforce. Assurance had to be given to the regulator and workforce at every stage that, despite being a pilot, all care was given to ensuring the highest standard of safe, relevant education and support for trainees. For pharmacists themselves, my team and I engaged with pharmacists, their supervisors and employers across healthcare systems, as well as with training course providers and industry expert reference groups.

Testing Integrated Pharmacist Training: *CEPNIP* (2017-18)

During delivery of *CEPIP*, employers and pharmacists challenged the issue of pharmacists training in isolation. This was underlined by the evaluation team, who cited evidence from *ACP001* to support the benefit of pharmacists undertaking clinical training as part of a multi-professional cohort. Traditional pharmacist training does not at any time include multi-professional learning, which could be causing the professional isolation of pharmacists within multi-professional teams (Radford, Aiello, 2015). *ACP001* concluded that 'Inter-professional perception of what Pharmacists… can achieve and the type of clinical skills training which can be accessed needs to be addressed, if other professional groups are to be encouraged to work towards advanced practice status in clinical practice' (Radford, Aiello, 2015). Essentially, evidence suggested that if clinicians learn together, then they learn how to work together. The *CEPIP* evaluation recommended that a multi-professional version of the programme might enable pharmacists to engage in mutually-supportive learning with other clinical professions, thereby enhancing their learning ability during training – as was seen and evidenced during the *ACP001* project (Terry, 2017). However, there was no precedent for multi-professional prescriber training involving pharmacists at that time. The need to further test such an approach led to the new *CEPNIP* project in 2017.

CEPNIP aimed to test the learner benefit of a combined pharmacist and nurse cohort undertaking a multi-professional version of *CEPIP*. Outcomes suggested that nurses benefitted from the pharmacists' advanced medicines knowledge, while pharmacists in turn were supported in their clinical studies by their nursing colleagues (HEE, 2017).

While this project was on a significantly smaller scale (1 cohort of 25 learners) than *CEPIP*, there was still a cost implication and a risk to learner progress. Stakeholder engagement again needed to be widened to include both pharmacist and nurse regulators (GPhC and NMC respectively). All participants were offered funded tuition to minimise financial disruption to employers and individuals. A recruitment strategy was put in place (as with *ACP001* and *CEPIP* projects) which required demonstrable career development plans to ensure that the training would translate into a wide-skilled role on completion of training. This was to ensure both appropriate use of public funding (demonstrable service benefit and return on investment) and appropriate use of clinician time (workforce impact). The application form can be viewed at Appendix B.

As the programme delivered both intended and unexpected outputs, ensuring that project management processes and evaluation remained consistent throughout was crucial to enable individual project outputs to contribute to the overall hypothesis. With such a long term, unpredictable programme, the direction and scope could have 'crept' to such an extent that the various outputs could not be translated to meet the programme objectives… essentially the programme would lose its way and fail to demonstrate a response to the identified workforce need.

Throughout the *Pharmacist Clinicians* programme, it was essential to maintain a 'party line' that this approach was not replacing traditional training pathways and was not an attempt to transform a pharmacist into an amorphous clinical role. Key stakeholder messages included that 1) This was 'a' pathway, not 'the' pathway and 2) that this journey was about extending the role of a pharmacist while respecting their core expertise. We were not seeking to turn a pharmacist into a nurse / doctor etc. This was an extremely delicate moment in the journey, which required significant, evidence-based engagement. I needed to re-draft and rapidly expand the programme communication strategy and evaluation methodology, with additional resources, expertise and time to manage expectations and risk. As I discussed earlier, a fundamental part of any project planning and management strategy is the development and maintenance of a communication strategy. The following section explores this in more detail.

Box 5: **Pilot: Clinically Enhanced Pharmacist Independent Prescribing (2014-18)**

With PIED-WM and ACP001 studies suggesting that an advanced clinical training pathway was appropriate for pharmacists, ACP001 concluded with a recommendation for pharmacists to undertake preparatory skills training in clinical health assessment and diagnostics. The programme team investigated whether a clinical skills enhancement to the existing Pharmacist Independent Prescriber (**IP**) training would satisfy this need. From August 2014, HEE developed and launched a pilot Clinically Enhanced Pharmacist Independent Prescribing programme [*CEPIP*] – an extension of the existing GPhC accredited IP programme. The 2-phase pilot study tested the following key deliverables:

- ✓ Provision of an entry point onto an advanced clinical practice pathway for pharmacists
- ✓ Addition of a targeted clinical skills mix to the existing (GPhC) Independent Prescriber training programme, informed by PIED study data.
- ✓ Development of an entry point for a *medicines*-focused pharmacist clinician training pathway;
- ✓ A programme applicable to workforce needs in primary, secondary and community care.
- ✓ Accreditation and regulator support for a programme capable of being APL / RPL (accreditation / recognition of prior learning) onto Advanced Clinical Practice programmes.

Pilot Phase 1 Aims:

- ➢ Develop, gain GPhC accreditation for and evaluate a 3-4 month "fast track" IP module. The six-month length of the existing IP programme could not be exceeded, so the IP and clinical skills training elements were blended.
- ➢ Develop and evaluate a suitable range of clinical health assessment and minors training. At this stage, a wide breadth of possible content was considered.

Pilot Phase 2 Aims:

- ➢ Use evaluation data and "lessons learned" from Phase 1, to inform a single course brief, set at Level 7 (master's level) and awarding a postgraduate *Certificate in Independent Prescribing.*
- ➢ Engage four West Midlands Pharmacist IP course providers to deliver one CEPIP cohort each.

Project Delivery and Outcomes

Phase 1 of the CEPIP pilot launched from August 2014, across three pilot sites – Universities of Aston, Wolverhampton and Worcester. A total cohort of 51 pharmacists from acute and community employers across the West Midlands were recruited. Phase 2 launched from April 2015, across four sites (Aston, Keele, Worcester and Wolverhampton Universities) with a combined cohort of 51 pharmacists from primary, secondary and community practice. The pilot concluded in December 2015. Phase 1 and 2 course providers confirmed that attrition and pass rates from the pilot courses were comparable to that of their "standard" Prescriber courses. *CEPIP* course directors unanimously concluded that the addition of the clinically enhanced component was unlikely to have adversely altered the pattern of results. Overall, pilot data suggested that pharmacists can complete such training without the risk of "burnout," or attrition based on an inability to undertake blended clinical and IP training.

Following evaluation interviews with course leads, Designated Medical Practitioners (DMP), employers and practitioners, respondents suggested that CEPIP enabled enhanced scope of practice included facilitating clinical areas to reduce winter pressures through prescribing, resolving medication issues and facilitating discharge. Pharmacists trained to the CEPIP model could also take histories and perform medicines-focused duties, including medicines optimisation, medicines reconciliation, TTO preparation and minors-focused clinical duties. Others identified increased patient safety, attributed to the skills that they acquired on the course, their enhanced pharmacy knowledge and a greater degree of involvement in patient care. Respondents reported that patient experience had been positively impacted through increased communication with patients. Overall, employer and participant perception of the course was positive (see Appendix A case studies for CEPIP impact). Use of study days, support from course leaders / peers and course length were identified as positive features.

2016-19 *CEPIP* delivery – Non-Pilot Cohorts

Following pilot recommendations, HEE developed and launched the first (non-pilot) *CEPIP* programme from January 2016, with engagement from employers, commissioners and pharmacists across community, primary and secondary healthcare. By 2019, c.500 pharmacists were trained and around 100 in training. CEPIP was adopted from 2018 to support the pan-London Pharmacist ACPs in Urgent Care Centres Project.

Following the unexpected segue by the PIED team into the ACP and CEPIP projects, it was considered important to consider how the evidence captured could inform mapping training needs data from CEPIP, PIED and Advanced Clinical Practice (ACP) pilot against the national (HEE) Advanced Clinical Practice framework. Data was captured within the 2016-18 *PIED-Mapping* project, achieving this aim.

For the reasons described throughout this paper, it is recognised that the NHS is a world leader in innovative practice but has variable success in transitioning innovation into core business. I would argue, based on my own experience, that many of the struggles associated with the transition of concepts would be less so, if there had been a robust communication strategy in place as part of project planning and delivery phases. Coming from a commercial background, I would never have considered bringing a new product to market without a communication and marketing strategy to enable the product to connect with the target market… especially when target markets are as diverse as those in the NHS. How are you able to sell a thing if 1) You do not know who to engage with to develop and deliver it and 2) nobody knows it exists when you have developed and are delivering it? The HEE process related to stakeholder communication and marketing involves a checklist which is prepared by project teams and sent to a central Communications (Comms) Team. The Comms team assess the extent to which any public media exposure for the work is safe, justifiable and appropriate. Information to inform release of the work to the public includes:

- What is the background? Why do this?
- Has the work had executive approval to progress?
- What are the key messages that you want to get across?
- Who are your key stakeholders/audience?
- What is the headline in your opinion?
- What are the risks that could lead to negative coverage?
- How does this work meet HEE priorities?
- What is the impact on patients?
- How would you explain the report and what it is to your friends who are not in the NHS?
- Is funding involved? If so, please check (HEE, 2020)

An example comms checklist submitted in January 2020 for the *PIED* programme is provided at Appendix D.

While this is a useful approach for completed work awaiting publication, there is no central function in the NHS to assist project teams with stakeholder engagement and communication prior to and during delivery of the project; arguably the time when communication is most important. It is therefore down to project teams to plan and execute a communication strategy throughout the life of the project. Defining who needs to know about the work – in terms of supporting its development, delivery, evaluation and integration - is crucial to the success of any project. However, maintaining and evolving the comms plan is often viewed as secondary to delivering the work, which is a risk to project delivery. Ensuring that communication happens according to plan, reactively in response to risk and proactively to identify new stakeholder groups which will add value, requires planning, self-discipline, and commercial awareness from the project management team.

Communication Strategies

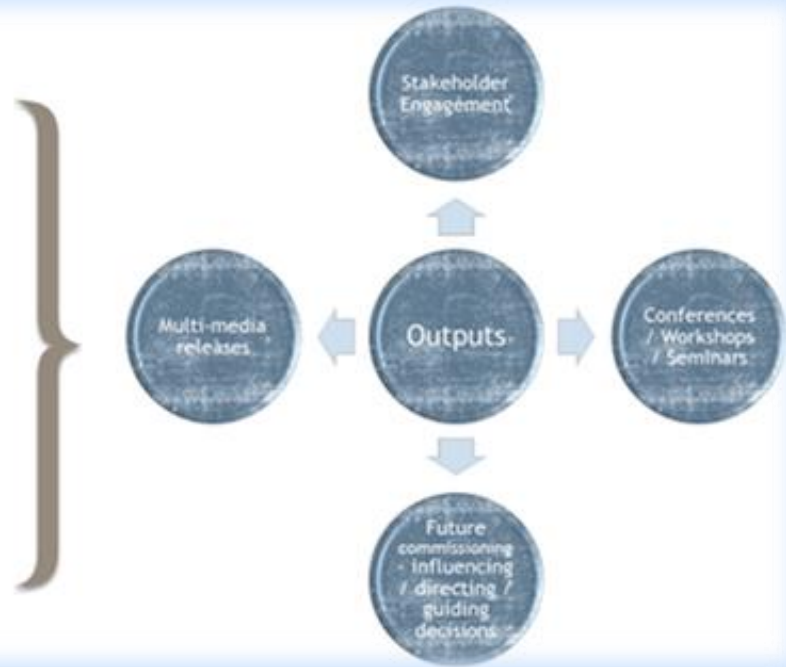
The *raison d'etre* of a communication strategy is to assist a project team in influencing the target audience and stakeholders, managing messages and assisting in the integration, scale and spread of the work. Key outputs can be identified and managed through a comms strategy to achieve this.

To assist my project teams in the exceptionally subjective business of establishing a comms plan, I developed a communication strategy template, which was created, refined and applied during the *Pharmacist Clinicians* programme. A completed example of this can be seen at Appendix E.

Key elements of a whole-life (beginning to end) comms strategy are summarised in the table below:

Project Aims	Why do we need to communicate this work and in what way?
Communication objectives	What will the outcome of the strategy be?
Project background	Project overview which will form the basis of initial stakeholder communication – identifying what we are comfortable telling potential stakeholders to encourage their engagement – particularly important if the work is commercially sensitive
Stakeholder and user groups	Stakeholders and users (people working with us and the people we need to 'sell' the outputs to) will be identified and the rationale for choosing them described. The strategy will also include a table containing contact details for all participant and user groups – this is a live section which is updated throughout the life of the project. In particular, the NHS work closely with the national Patient Advisory Group – a patient representative should be a key stakeholder in all project design and delivery groups.
The strategy for engaging with the target audience (users) and stakeholders	Includes: • Implementation and tactics – how we will communicate, when and in what way? • Channels – What specific media will we rely on to communicate? • Key messages – what are we trying to say? • Timescales
Communication strategy review and evaluation	Continuously ensuring that we are talking to the right people – how do we identify new people to talk to and review the relevance of the existing stakeholder / user group/s?
Communication budget	Will stakeholder engagement at a cost be required – media campaigns, events, workshops, project groups, stakeholder-related expenses etc? Ensuring this is factored into the overall project cost.
Timeline and action plan	A fluid plan, which will evolve throughout the life of the project.
Further information	Anything relevant to delivery of the comms plan. The risk strategy should be referenced here; in particular, any risks that may impede communication of the work (for example, if the work is confidential or sensitive, requiring several layers of approval before any public statements can be made or external stakeholders engaged with).

- ✓ Influencing
- ✓ Managing Messages
- ✓ Spreading innovation
- ✓ Adoption & Adapability
- ✓ Scale and Spread



Given that stakeholder engagement is entirely unique to the project, the length and content of a comms strategy will vary from project to project. For example, the project for which the comms strategy at Appendix E related was a short-term (6 month) project involving the production of a 20 minute, public-facing documentary. The public facing element escalated the risk and required a far more thorough comms strategy than typical for a project of this size, length and value. Despite that, the focussed nature of the product required a relatively small number of communication channels (7), as well as 3 stakeholder groups and 8 user groups. The *Pharmacist Clinicians* comms strategy by comparison was a complex, evolving, fluid process over 6 consecutive NHS financial years. The programme ended in 2020 with a stakeholder and user list of over 200 organisations and individuals and over 50 media channels employed to manage communication (HEE, 2020).

The *Pharmacist Clinicians* comms strategy evolved throughout the life of the programme, but sub-strategies were also required for each individual project, given that each had its own discreet outputs and stakeholder / user engagement needs. In this case and to manage complexity, the external evaluation team was tasked (expectations within their service contract) to manage user and public communications, while my team undertook stakeholder engagement.

Managing each project communication strategy to meet those discrete objectives, while also linking the outputs into the overall programme communication strategy was exceptionally challenging and could not have been accomplished without the consistent approach described above.

The end… or just the beginning?

If a consistent project management approach is held, then the end-project process might include:

- Receiving outputs, evidence analysis and recommendations from the evaluation and project teams.
- Communicating with stakeholders and users.
- Considering intended and unintended outcomes and any further development work based on unexpected evidence.
- Presenting evidence and recommending next steps to stakeholders.
- Presenting outcomes to the HEE executive team (commissioner) and proposals for next steps.
- Receiving approval-in-principle to proceed to the next phase.
- Receiving funding approvals where required for the next phase.
- Publishing outcomes where appropriate and reviewing and revising the communication strategy ahead of new or continuing work.

In my view, establishing whether to close or continue a project might be the most important part of the end-project phase. It can be extremely tempting and easy to argue in favour of keeping a project running indefinitely. From my own experience, I am painfully aware that the quest for 'just one more piece of evidence' can be tantalising, but can entirely derail a project if the original hypothesis is lost in the quest to see where a journey will take you. To protect against this and before moving beyond the parameters of the original brief, end-project processes should be initiated and adhered to. Such processes can help determine whether or not the original hypothesis or guiding questions have been addressed. For example, the *Pharmacist Clinicians* programme included an end-project phase at each stage in the programme (Page 39). At each end-stage, the above process was followed to determine how close to proving (or disproving) the hypothesis we were, as well as considering how to use new evidence. Through this approach, I was able to justify progression and deviation and then ensure that the programme remained on track. I presented my final report in December 2019, which concluded that the original hypothesis had been proven, along with recommendations to support the training, development and integration into multi-professional teams of Pharmacist ACPs. In particular, I recommended that such a role is an evidenced model of healthcare, with capability to manage patients across primary, secondary and community practice settings. My conclusion included a recommendation to HEE to formally close the programme as all objectives had been achieved.

Projects including *ACP001*, *CEPIP* and *CEPNIP* were unexpected but necessary deviations that contributed their own output and also provided evidence to strengthen the response to the programme hypothesis. However, these deviations posed high risk, high cost, unplanned, long-term deviations to the programme. My programme held no more ability to secure investment than any other HEE programme, so the key challenge here was accessing unplanned public investment to manage unexpected new work. I attribute the ability to secure new investment to the capability of the programme framework – in particular to: 1) assure investors as to justification for deviations; 2) to present findings to stakeholders and user groups and 3) to influence stakeholders, investors and users at all stages of delivery that the evidence base and direction is quality assured and reliable and 4) to demonstrate the current and future workforce and service benefit of these interventions.

Following the *Pharmacist Clinicians* intervention and at the time of writing, over 500 pharmacists have been trained against some or all of the advanced practice development pathways identified during the *PIED* training needs analysis and using the *CEPIP* and *CEPNIP* models (HEE, NHSE, 2019). The quality of the *PIED* training needs analysis led to a national call from NHS England and HEE to support the training of pharmacists as part of the 2016 GP Pharmacy, Integrated Urgent Care and Care Home development programmes. Evidence also opened the door to discussions with the regulator (General Pharmaceutical Council in this case) around extending supervision (designated medical practitioner – DMP) rights to non-doctors, to enable greater access to prescriber training for community and primary care pharmacists.

Learner progress, supervision needs analysis and economic analysis of *ACP001, CEPIP* and *CEPNIP* fed back into the *PIED* training needs analysis, providing a real-world evidence base to support the capability of pharmacists to train and practice as ACPs (Aiello at al., 2017; HEE, NHSE, 2019). My evidence base and programme approach underwent a detailed audit to ensure its ability to justify investment and safety of the training model. It was during this audit, that I began to critically review and reflect on my approach to project management and delivery of pilots in the NHS. This underlined my belief that a common delivery framework was both definable and justifiable and led to the creation of the framework presented above.

The moral of this story? Identification of secondary and unintended / unexpected benefits was only possible because the team followed a process which involved:

- **Evaluation** running in parallel to (rather than at the end of) project delivery.
- **Communication** between stakeholders, users, the evaluation team and project team enabled the project team to identify, isolate and respond to new evidence proactively.

Being able to adapt the programme based on evidence analysis and stakeholder engagement would not have been possible without a defined process that allowed the team to plan for evidence capture, communicate the need for new approaches and rapidly identify, justify and deliver new work and then link the evaluation of the new work into the broader programme. A stepwise framework allowed us to add to, deviate from and evolve the original programme parameters while still maintaining a focus on the guiding hypothesis. Furthermore, applying the framework both to the delivery of the programme and its constituent projects allowed me to ensure consistency in governance, quality assurance and risk management – thereby maintaining cohesion across an increasingly complex portfolio and achieving relevant deliverables and capturing learning from each of the projects, both during and after delivery. Essentially, I used the framework to ensure that we did not fly off on a tangent and lose sight of the objective, while still being able to explore new opportunities and respond to challenge.

Moving the concept into core business… the last step

While the *PIED* programme team set out to prove the concept of a Pharmacist ACP, the 'transition' to core business would involve publishing and integrating the evidence base in the right places, to enable NHS workforce transformation. This process involved following and evolving the comms strategy to guide and manage engagement with policy makers, commissioners and delivery teams involved in clinical workforce development, strategic transformation programmes and commissioning strategies. Engagement included:

1. **Workforce transformation: 2018:** Health Education England carried out a case study review of how the *PIED* programme had influenced workforce development. Case studies were collected from a cross-section of primary, community and acute hospital settings. A snapshot of case studies can be reviewed at Appendix F. The case studies demonstrated that pharmacists practicing as ACPs are capable of adding value to multi-professional NHS workforce teams across healthcare systems (example at Box 6). This satisfied the primary aim of the programme. The case study report was drawn upon for my published works (Ch.5), industry presentations and stakeholder engagement.

Box 6: A Pharmacist Clinically Enhanced Prescriber in Primary Care:

I qualified as a Non-Medical Independent Prescriber in 2015, after completing the 2nd pilot of <HEE> funded CEPIP at Worcester University. I have had to broaden my areas of clinical competence post qualification to meet general practice and patient demand. I review acute episodes of illness or flare-up of chronic conditions originally diagnosed by GP e.g. dry skin, respiratory infection, pain. I assist in the completion of medication reviews for oral contraceptives, rheumatoid arthritis. I assist with NHS health checks, Care Home QoF management, vaccinations and anticoagulation. My appointments can both be pre bookable and book-on-the-day; to ensure good patient access. The majority of my appointments are open for admin/nurse/GPs to book into, but I also have scheduled vaccination clinics. Patients can book telephone consultation/face to face appointment or a home visit. On average I will see 72 patients in a typical week requiring and utilising my IP qualification. (General Practice Pharmacist)

2. **NHS England's Primary Care Pharmacists programme:** *PIED* evidence was submitted to NHS England and underpinned delivery of their phased national programme to commission 1,000 Pharmacists in General Practice across England from 2015 (NHSE, 2019). This in turn informed a change to NHS commissioning to include the development of Pharmacist clinicians in primary care, urgent care, integrated urgent care and community practice. The 2020 revised primary care contract (NHSE, 2020) explicitly referenced pharmacists as a key part of any primary care multi-professional team.
3. Throughout delivery, evidence from the *Pharmacist Clinicians* programme **informed and underpinned national policy** including the NHS Five Year Forward View, Next Steps on the Forward View (2017), Securing the Future of the Emergency Department Workforce in England (2017), Facing the Facts, Shaping the Future – HEE Workforce Plan (2018), NHS Long Term Plan and Interim People Plan (2019). The introduction of pharmacists as one of the six roles to receive 100% salary funding for roles in primary care as part of the 2020 Primary Care Contract redesign (NHSE, 2020) was underpinned by these earlier policies, which justified their recommendations using *PIED* evidence.

4. The *PIED* study and outcomes formed the basis for the Royal Pharmaceutical Societies' **career guide for pharmacists working in Urgent and Emergency Care** (RPS, 2016).
5. **HEE's Advancing Pharmacist Training Review (2019):** As well as current training focusing on one sector of practice only, most of the development opportunities for pharmacy professionals occur in a professional silos, with limited multi-professional offerings…Recent work has shown models can be developed to allow multi-sector development to enable pharmacists to develop as advanced clinical practitioners (ACPs)…This evidence base is critical to future reformed education and training models (RPS, 2019).
6. The **NHSI response to the challenge raised by the Royal College of Emergency Medicine** as to the efficacy of Pharmacist Clinicians in the ED relied on the *PIED* evidence base. The response and opinion relating to the RCEM position are shown below at Box 7. For a government body to directly challenge the position of a medical royal college - with the outcome being a public retraction of that position - was highly unusual and demonstrated how robust the *PIED* evidence base was (Clews, 2019).

In this case, the transition to core business was a combination of proving a concept and using evidence to influence workforce planners, policy makers and commissioners. Simply put, we proved to investors that it was safe and justifiable to invest in ACP pharmacists across healthcare systems.

Box 7: Challenging the Position: Pharmacist ACPs in the Emergency Department

NHS Improvement response to RCEM statement of 16th April 2019:

The *PIED* study outlines that the role of pharmacists working in the Emergency Department within the multi-professional team is crucial to undertake medicines-focused duties such as pre-discharge medicines optimisation, medicines reconciliation and prescribing. Despite the evidence to support this, the RCEM position statement has somehow missed the new ACP roles of pharmacists compared to the traditional medicines' management role. We are disappointed in the RCEM position statement, but we would be happy to meet with those involved in producing the statement to go through our concerns. We are very keen to work with the RCEM with a view to provide support in updating the statement.

Pharmaceutical Journal 2nd July 2019:

…The Royal College of Emergency Medicine (RCEM) has said it will rewrite a position statement on the use of pharmacists in emergency departments which has been criticised as "disappointing" and "not patient-centered." The policy, issued in April 2019, said pharmacists should not see new emergency department patients unless the case specifically relates to medicines. It also said that it does not support the use of pharmacists to treat emergency department patients "*de novo*" (from the beginning), except for issues directly pertaining to usage of medicines." But following criticism, the college has said it will redraw the policy statement and it is considering expanding its advanced clinical practitioners (ACP) scheme to include pharmacists later in 2019.

Journey's End… transitioning the concept

In September 2019, Health Education England and NHS England jointly recognised and published the outcomes of the *Pharmacist Clinicians in UEC* programme, with a key message that any multi-professional workforce development should include both 'traditional' and advanced clinical roles for pharmacists (HEE, 2019). Both organisations signed an undertaking which approved the development of ACP pharmacists - in particular, that:

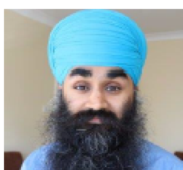
- Pharmacist prescribers have an evidenced ability to address workforce challenges and clinical skill gaps in urgent and emergency care services, across primary, community and secondary healthcare.
- Evidence from the PIED suite of studies confirms the suitability of ACP training to safely and appropriately develop ACP pharmacists; for example: aligned to the RCEM-credentialed ACP pathway for pharmacists working in Emergency Departments.
- Pharmacists trained as Advanced Clinical Practitioners have potential to support the clinical management and throughput of patients across urgent and emergency healthcare services.
- The HEE national Advanced Clinical Practice framework should be incorporated into workforce planning and commissioning structures as a pathway for the clinical development of pharmacists in Urgent and Emergency care services, across primary, community and secondary healthcare systems.

This joint publication marked the formal close of the programme and enabled me to enact the final phase of the communication strategy: Public presentation of final conclusions and recommendations.

The *Pharmacist Clinicians* programme clearly demonstrated the capability of NHS providers to innovate and deliver system-wide, real-world change in a joined-up and cost-effective way.

A day in the life of an urgent care trainee Advanced Clinical Practitioner (Box 8)

Ravinder Singh Cholia is a pharmacist and trainee Advanced Clinical Practitioner at Queens Hospital in Romford. We catch up with Ravinder to find out what his working day is like.



Right, let's set the DeLorean for 1st March 2016l, let's go….. back to the pharmacy. Que theme tune. If Marty Mcfly travelled back one year and asked me "Ravinder, what's an urgent care pharmacist?" I would have replied something similar to "I haven't a clue" Ask me now and I could be close to writing a paper on it!

Back to the present day. My life as an urgent care pharmacist. Location: Queens Hospital emergency department, Romford. Time: 8am: I'm in the ED handover, listening, learning, and in the near future contributing to a multidisciplinary team. I then meet my mentor, an experienced ED and primary care GP to reflect and review on the previous day as well as plan the day ahead.

I then hit the shop floor and am allocated my first patient, 'Mr Smith'. This isn't an MUR or a regular consultation you would "normally" have with a pharmacist. It's something new, unique and exciting for us. My patients will be seen by an advanced clinical practitioner in training who just so happens to be a pharmacist (who, by the way, has a habit of not letting you go without a thorough review of medicines hidden in his consultations).

I start by taking a thorough history, conduct a physical examination and request relevant blood tests as well as radiological scans. Having these additional skills as well as being and independent prescriber means Mr Smith gets all the care he needs from one highly trained professional. He is welcome to ask questions and is made to understand that we are making decisions about his care together. Does Mr Smith need to be referred to surgeons for appendicitis or does he need maxillofacial surgeons for his facial injury? Do we need to conduct a portable ultrasound of his gall bladder or shall we send for a CT scan of the head to rule our subarachnoid haemorrhage? After I have noted my differential diagnoses I will present my finding to a doctor. Mr Smith is just one patient in one area of ED. I will see many patients throughout the day, anything from a tonsillitis with GPs to a cardiac arrest in resus.

I spend one day a week at university learning about physiology and examination techniques of different body systems coupled with a practice portfolio and a lot of blended and self-directed learning at home.

My moto gets me through the day, "A&E stands for Anything & Everything and there is something to learn from everyone."

So, if I was given the opportunity by Marty Mcfly to give me a glimpse of the future I would hope that there were a lot more pharmacists in my role. Would I take Marty up on his offer? No, I don't believe I would. My destination is set and it's the journey that matters to me. Right now I'm enjoying the journey too much.

Demonstrating System Impact

The key impact of *Pharmacist Clinicians* has been a step-change in training and deployment of clinical staff to the benefit of large numbers of patients presenting with a wide range of conditions. *PIED* remains the largest workforce development study of its kind in the world and was presented to workforce and clinical research teams on every continent on Earth between 2016 and 2020. Despite being engineered to address UK workforce challenges, *PIED* actually influenced workforce development worldwide. *PIED* in particular has:

- ✓ Provided an evidence base to underpin large scale training of pharmacists for advanced clinical roles.
- ✓ Established the utility of pharmacists in managing a wide range of patients presenting at Emergency Departments and wider urgent care settings.
- ✓ Through case study evidence and patient advisory group engagement, demonstrated a patient and service benefit. Patient representation was a key feature at all stages of project development.
- ✓ Supported the appointment of pharmacists as frontline clinicians across a wide range of UK Emergency Departments, attending large numbers of patients.
- ✓ Been instrumental in discussions with Emergency Medicine workforce groups, including the Royal College of Emergency Medicine, Royal Pharmaceutical Society, and General Pharmaceutical Council. The evidence base has also supported recommendations made to NHS England and the Department of Health and Social Care, relating to pharmacist workforce transformation.
- ✓ Demonstrated a new research methodology that is suitable for service development studies in the healthcare sector and is applicable to all healthcare models across the globe – and was presented at one of the largest medical conferences (QSHC) in Europe.
- ✓ Led to the funded commissioning of further studies concerned with the service development of medical and non-medical staff in and beyond Emergency Medicine including NHS England's primary care pharmacy pilot, integrated urgent care pharmacist development and pharmacists practising in frailty and care home settings (see below) (NHSE, 2018, 2019, 2020; HEE, 2018, 2019, 2020).
- ✓ Been recognised as an international, award winning research programme – across a wide range of practice areas and clinical specialties in primary, community and secondary healthcare systems.

The very significant workforce challenges associated with the delivery of Accident & Emergency services are well known and described by the World Health Organisation as a critical healthcare issue, worldwide (NHSI, 2017). My programme responded to this identified workforce need with a system-wide strategy to integrate a new model of healthcare into multi-professional teams in Emergency Departments and wider urgent care settings.

The *Pharmacist Clinicians* programme resulted in a demonstrable workforce impact, service benefit and return on public investment (Aiello et al., 2017), (Terry et al., 2018). The programme justified an extension of clinical services that is both immediate and ongoing. Programme outputs have contributed directly to the delivery of safe, effective patient care at scale, as well as supporting healthcare providers in the management of ever-increasing demand (HEE, NHSE, 2019). I could not have concluded this work without a robust set of processes and frameworks to guide and enable benefit realisation.

Discussion

As I developed processes to guide, enable and justify the delivery of projects, I had unwittingly developed all of the parts of the framework, but had not recognised (at the time) that these parts could form a single, coherent framework. The framework was eventually realised by identifying and combining change and project management processes and then retrospectively testing the resultant framework against the projects shown above.

I have described the framework and the evidence surrounding it. However, and as discussed throughout chapter 1 and my reflections above, perception and human factors always determine whether (or not) any intervention transitions from concept to core business in the NHS. All projects require complex negotiation with stakeholders and users to influence perceptions and enable adoption of the output. Realising, then, that the NHS workforce determines whether change is adopted, transformation cannot happen without addressing sociological and human factors from the outset.

The need to influence perception underpinned all of my work but could not be simply explained by the processual framework alone. I knew that I needed to explain this most crucial part of the process in a relatable way, to support users in identifying and managing the expectations and sociological boundaries of NHS workforce'. To achieve this, my framework would need to be framed, defined and presented as a process flow with an underpinning philosophy. Drawing on my own experiences and turning to the literature, I explored whether there was an existing philosophical maxim that could allow me to demonstrate the need to address sociological factors as part of an integrated approach, linked to my processual change methodology. I also needed to explore just how unique my approach was, by investigating published examples of NHS change management and innovation.

Recognising the need to explore what I could learn from other past and current approaches to the business of innovation and transformation in healthcare, I turned to the literature, with guidance and support accessed through my PhD programme.

In the next chapter, I will present a summary review of the literature, which I considered in relation to innovation in NHS workforce, NHS change management and evaluation.

The chapter will conclude with a discussion on the importance of human factors in any NHS project and how this realisation led to my identification of the philosophy of *pragmatism* as a means of understanding and responding to those human factors and perceptions which influence the evolution of NHS workforce.

Chapter 3: Literature Review

In this chapter I identify sources searched and the search histories I used to inform my processual framework. The aim was to consider antecedents to innovation and change methodology, including how this attempted to influence innovation in the NHS. I will use literature and my own experiences to explain the rationale for the philosophical approach which will underpin my processual framework.

1. Sources searched

Source	Results?	Source	Results	Source	Results	Source	Results
MEDLINE	N	AMED	N	NICE Evidence	Y	Health Business Elite (HBE)	Y
EMBASE	N	HMIC	Y	Cochrane Library	N	General web search	Y
CINAHL	Y	PsycINFO	N	Google Scholar	N	Others	Y
British Nursing Index	N	PubMed	N	Base Library Catalogue	Y	DISCOVER	N

#	Database	Search term	Results
1	HBE	(innovation).ti,ab	30856
2	HBE	(workforce).ti,ab	15576
3	HBE	(healthcare OR "National Health Service").ti,ab	93778
4	HBE	(1 AND 2 AND 3)	22
5	HBE	4 [DT 2008-2018]	17
6	HBE	exp "MEDICAL INNOVATIONS"/	2021
7	HBE	(2 AND 6)	187
8	HBE	7 [DT 2008-2018]	129
9	HBE	exp "HEALTH SERVICES ADMINISTRATION"/	16127
10	HBE	(6 AND 9)	13000
11	HBE	(evolve OR evolving OR evolution OR innovat* OR improv* OR incentiv* OR transform*).ti,ab	216440
12	HBE	(10 AND 11)	3705
13	HBE	(healthcare OR "National Health Service" OR NHS OR health).ti,ab	363036
14	HBE	(12 AND 13)	2278
15	HBE	(workforce OR employee* OR staff).ti,ab	198711
16	HBE	(14 AND 15)	276
17	HBE	16 [DT 2008-2018]	191
18	HBE	(transformation).ti,ab	8132
19	HBE	(11 AND 13 AND 15 AND 18)	142
20	HBE	19 [DT 2008-2018]	99
21	HBE	(transform OR transformation).ti,ab	12757

22	HBE	(employee* OR staff OR personnel OR "human resource*" OR workforce).ti,ab	228434
23	HBE	(13 AND 21 AND 22)	217
24	HBE	(innovate OR innovation OR evolve* OR evolution OR evolving OR chang* OR improve* OR improving OR reorganisation OR encourag* OR sustain* OR assist OR reorganization OR assist*).ti,ab	393519
25	HBE	(23 AND 24)	122
26	HBE	25 [DT 2008-2018]	77
27	HMIC	exp INNOVATIONS/	1637
28	HMIC	exp NHS/	40148
29	HMIC	exp WORKFORCE/	4083
30	HMIC	(27 AND 28 AND 29)	15
31	HMIC	30 [DT 2008-2018] [Languages English]	12
32	HMIC	(transform OR transformation).ti,ab	1413
33	HMIC	(employee* OR staff OR personnel OR "human resource*" OR workforce).ti,ab	35352
34	HMIC	(innovate OR innovation OR evolve* OR evolution OR evolving OR chang* OR improve* OR improving OR reorganisation OR encourag* OR sustain* OR assist OR reorganization OR assist*).ti,ab	92770
35	HMIC	(32 AND 33 AND 34)	153
36	HMIC	35 [DT 2008-2018] [Languages English]	93
37	HMIC	(pilot* OR test* OR concept* OR implement*).ti,ab	50358
38	HMIC	(27 AND 37)	281
39	HMIC	38 [DT 2008-2018] [Languages English]	180

Literature Review: Innovation in the Healthcare Workforce

During the private sector part of my career, I used existing project management methodologies to enable delivery of my projects. Whether I used PRINCE2, Sigma, Lean, MSP, SCRUM or some other methodology would depend on the preference of the client, balanced against operational needs. As a commercial project manager, my role involved assuring the client that my process would suit both their need, timeline, quality standards and intended outcomes. My thinking extended only as far as these practical considerations, rather than *why* the methodology was being used, or whether the workforce receiving the outputs would care about *how* the client brought a product to market. Change management processes in the commercial sense focussed more on how a new process or product would be received and marketed by the workforce; less about how well the workforce understood the journey in bringing the new product or process to market or whether the workforce would need to be convinced not to reject the product. Having previously taken the philosophy behind my project management process for granted then, my move to the NHS required a radical change in thinking. Entry into the NHS came with a very sharp reality check and the need for a change in approach to project management.

Innovation in UK Healthcare Workforce

My first priority upon joining the NHS was to figure out how best to test, prove and communicate the outcomes of my work.

This came with an understanding that each project involving a spend of 'public' money requires evidence to support recommendations, outputs and conclusions. However, the Nuffield Trust commented that issues associated with uptake of innovation are not so much about whether the evidence is actually good enough, rather how the evidence is perceived by different stakeholders (2017). As described in Chapter 1, my own experience entirely supported this view, so I approached the literature to consider whether perception had previously been a factor in the testing of innovation methodologies within the NHS.

Innovation Methodology

Methodologies associated with innovation, change and transformation attempt to define how early adopters of new technology are able to influence wide-spread system transformation and transition of innovation into business as usual (Katz et al., 1963). Attempts to define innovation first came to light in literature with the economist Joseph A. Schumpeter in 1939 and then Barnett's definition of innovation in 1953 as "any thought, behaviour or thing that is new because it is qualitatively different from existing forms" (Lissinger, 2013), through to the 1970s concept of Diffusion of Innovation.

Modern methodologies and conceptual frameworks including *Disruptive Innovation* evolved from these earlier concepts in the 1990s, with a focus on emergent technologies in the IT and automotive sectors (Christensen, 1997).

With a focus on healthcare, the need for innovation to drive the evolution of healthcare proportionate to patient demand worldwide, led to consideration of how such commercial approaches may enable change. Clayton Christensen proposed in the 1990s that Disruptive Innovation may be applicable to UK NHS service redesign (Kings Fund, 2013). Through disrupting service provision, Christensen argued that the result would be more affordable and accessible healthcare systems, allowing a greater volume of patient access to a wider range of services. However, Disruptive Innovation and its application in healthcare systems was challenged on the basis that the NHS and its workforce rely on *processes* rather than *products*. McKinley (2001) countered that Disruptive Innovation in worldwide healthcare was well placed to respond to a crisis involving increasingly expensive, reactive, inefficient workforce models, which tend to rely on a 'one size fits all' approach to patient care. McKinley proposed a strategy involving the introduction of disruptive technologies at the point of care, enabling patients to 'wrest control of their healthcare from doctors' (p25-34). Gerada (2013) argued that a process of workforce ***evolution***, which gradually embraces new technology but retains traditional, clinician-led care, is preferable to disruptive change and the risk that approach entails. In this case, evolution counters Disruptive Innovation in UK Healthcare through an assertion that healthcare should respond reactively to patient demand, expanding and developing its service relative to *at the time* need. This kind of reactionary approach may explain why the NHS often cultivates a perception of 'running to keep up.' A reactive approach may forestall any possibility of predicting and adapting to meet *future* patient care needs… essentially a service which is *trapped in the now*.

Proposing a middle ground between natural evolution and Disruptive Innovation, O'Ryan (2014) presented the concept of *Constructive Disruptive Innovation* as a healthcare innovation methodology.

The goal of this approach is to create strategies that are less expensive but more creative, useful and impactful, while still being scalable and respecting patient safety. Supporting O'Ryan's concept of Constructive Disruptive Innovation, Mulgan (et al., 2016) suggested that a potentially successful approach to innovation in UK healthcare will be a combination of innovations; pulling together existing ideas in a novel way, rather than reinventing the wheel. Mulgan et al. argue that systemic experimentation to prove and justify system-wide change is the most effective way to disrupt entrenched practice. Devlin (2016) recognised the failing of UK healthcare to manage and treat the frail elderly population and suggested that "nowhere is there greater need for Disruptive Innovation" (Para.6). However, Mulgan et al. (2016) asserted that, while the UK healthcare system tacitly supports innovation, perceived threats to jobs, individual status and knowledge base result in extreme resistance to any innovation. The preferable option to the NHS, Mulgan states, is simply to leave old structures intact because "it's too much like hard work to pull them apart."

Literature and evidence relating to the integration of innovation methodology in UK healthcare suggests that, while the NHS needs a unique approach to the translation of concepts into core business, the application of commercial project delivery methodologies may simply not be translatable; may not enable the required faith and belief from the frontline workforce; may not provide an underpinning "upon which a man is prepared to act" (James, 1890) and thereby enable wide-scale adoption.

What is clear from existing research and my experiences working within an NHS programme team is that no single or combined approach to innovation or workforce transformation in healthcare has been adopted individually or collectively across all NHS systems, despite policy recognising that such an approach – underpinned by change management – is necessary.

Managing Change in the NHS

My observation as a commercial programme manager transitioning into a role as an NHS programme manager is that the NHS is an organisation made of people, not processes. Those people view change in a unique, individual and chaotic way. Where the integration of innovation depends upon changing the way that other people perceive what is *real*, what is *true*, human nature must be recognised and responded to as both primary driver and key blocker. Existing methodologies may simply not extend to dealing with perception in this way. Within the exceptionally complex mix of national, regional, local and service-level conglomerates and isolated organisations that make up the NHS, a common factor might be that any new process, product or 'thing' will not be adopted individually or within a system without recognising the need to manage how the target audience perceives the proposed change. Any project management process in the NHS must contain a philosophical underpinning which takes account of influences and recognises perception as both blocker and enabler.

NHS England recognised this need in 2009, commenting that strategies and processes alone are not sufficient to drive the degree of change being sought. The NHS must focus on tackling the behaviours and cultures that stand in the way (NHSE, 2009).

The *NHS Change Model* (Fig.14) evolved from this observation but did not progress past the conceptual phase and is largely unknown by NHS workforce transformation programmes at regional or national levels (HEE, 2019). This need remains unresolved, yet necessary. Evaluating the progress of NHS Integrated Care Systems (ICS) in 2018, the Kings Fund observed that a common factor amongst well-performing ICS' was the willingness of member organisations to establish common cause, spend time together and undertake focused development work with defined leadership groups (2018). In their 'introduction to change management,' PROSCI suggested, that for an organisation to successfully change, individuals need to change in a collective way.

Fig.14: NHS Change Model (Anderson et al., 2018)

The success of each project ultimately lies with each impacted employee doing their work differently (2010). NHS Improvement recognised this approach in its 2011 guidance for change management in the NHS: "The change management process is the sequence of steps or activities that a change management team or project leader would follow to apply change management to a project or change" (2011). In the 2018 revision of the NHS *Change Model Guide*, Anderson et al. describe shared purpose as being a central consideration in any NHS change management process. Finding the commonalities among people's positions, reaching a shared understanding and aspiration can remove barriers and unite diverse groups of stakeholders in support of a common cause (Anderson et al., 2018). 'Commonalities'... 'shared understanding'... 'unity'... *perception*.

The consensus throughout literature and my own evidence base is that change cannot be realised without underpinning processes that address human factors. In particular, the issue that *people* - not production lines - drive the output of the NHS. Those people need to *believe* in something and trust it entirely before they will adopt it. So is it possible - if change management is frequently referenced as a fundamental need for any workforce transformation in both commercial enterprise and the NHS - that it is in fact a lack of an underpinning means of defining the need to influence perception, rather than change methodologies being unfit for purpose, which leaves the NHS lacking a universal approach for defining and adopting innovation.

Perception influences the evolution of NHS workforce through the belief of the individual, group or system that a *thing* will be to their benefit if they do it. Without that belief, they will simply not adopt the thing and it will cease to be. For NHS service commissioners and change managers (myself included), engineering a project in such a way as to make the target workforce group/s trust the process and believe the outcomes to the point where individuals risk their careers and reputation, as well as the safety of patients, is a fundamental challenge but an absolute necessity. Because while humans can achieve great things, we each have a sense of self-preservation which leads us to question the safety of our own actions and those actions which are imposed upon us (Nicholson, 1998).

Writing on human evolutionary psychology, Nicholson commented that effective managers need to be adept at the very difficult task of framing challenges in a way that neither threatens nor tranquilises employees (1998). In an industry where the will of one person can entirely stall the evolution of that industry, an underpinning philosophy which empowers managers to change the will of that individual from 'reject' to 'accept' is crucial.

Banerjee reasoned that 21st century healthcare needs a combination of technology, personalised healthcare and a human, pragmatic, responsive and personal approach to implementing change (2019). I came to realise through my own experiences that a key part of any NHS project is an ability to understand and encourage people's willingness to accept the purpose and outcomes of a project, recognising the collective or self-interests which influence whether or not this happens.

Clearly demonstrating that I have addressed these levers has enabled me to influence perceptions and convince my target audiences that project outputs are capable of delivering a beneficial change. However, while my own work resulted in system change and benefit realisation, I recognised that not all test-of-concept projects in the NHS fare so well. Following his 2008 NHS review, Lord Darzi commented that <we> have a proud record of invention, but we lag behind in systematic uptake even of our own inventions (NHSE, 2008). Gbadamosi (2015) listed ten barriers to implementing change in the NHS (Box 6), stating that there is no shortage of ideas among health and care staff. The challenge is a shortage of processes to capture ideas and a lack of leaders who truly empathise with the needs that <we> see. Furthermore, senior leaders are trapped in inflexible processes. We fail to embrace ways of taking part in low cost, low risk experiments to test ideas (2015).

Box 9: Barriers to implementing change in the NHS:

1. Confusing strategies
2. Over-controlling leadership
3. One-way communication
4. Poor workforce planning
5. Stifling innovation
6. Playing it safe
7. Poor project management
8. Undervaluing staff
9. Inhibiting environment
10. Perverse incentives

(Gbadamosi, 2015) Link

As projects and personal experiences developed, I identified numerous examples of healthcare research and service improvement studies which should have ushered in system-wide service improvements. However, such work faced challenges including a lack of organisational resource or support, lack of expertise or system awareness in the project team, poor marketing, or simply being too scientific, too *shop-floor*, too localised or too theoretical. Consequently, project teams were unable to connect with or influence the right stakeholders at the right time and the innovations failed to transition into core business, despite proven service benefits.

Responding to the issue of why some health care innovations successfully integrate while others fail to spread beyond their site of origin, the Health Foundation commented that the spread of innovation in health care is often slow and laborious, and even when new ideas are taken up elsewhere, it proves harder to reproduce the original outcomes and impact (2018).

Box 10 highlights outcomes from the 2017 Nuffield Trust "Falling Short" report, which identified behavioral and cultural blockers as directly affecting the uptake of innovation in the NHS (2017).

BOX 10: *Falling Short:*

The 2017 Nuffield Trust report commented on factors affecting the uptake of innovation in the NHS. Amongst the key issues, behavioural and cultural barriers are often cited as significant reasons for the lack of innovation adoption in the NHS. And these are undoubtedly important: how evidence is perceived and the need to adapt are obvious cultural problems. In addition to the cultural factors already highlighted, we heard from industry that, at the organisation or department level, the fact that a particular product has not been developed or evaluated within their organisation can be enough to prevent adoption. For others, the fact that a prestigious organisation is using a particular innovation means they want to, too. At the individual level, we heard from industry that evidence is only useful when clinicians have identified a problem and are looking for a solution to it. Where they have not identified a particular problem, approaching them with evidence of something that works better than traditional methods can be perceived as a threat to their professional judgement and autonomy (also a problem with top-down policy approaches to innovation, as highlighted in point 2). The literature also highlights risk aversion, resistance to change and the lack of entrepreneurial culture as important individual cultural barriers to change. That said, many in the group felt that barriers imposed by the system are just as (or even more) important than cultural factors. These include:

- Clinicians' lack of time to prioritise innovation or the identification of problems, combined with a lack of incentives in the system to make time (often exacerbated by operational turmoil such as changes in management)
- Judging procurement departments on short-term cash-releasing savings. The fact that the tariff does not keep up with new innovations. Additionally, large multi-year service contracts can stifle competition and the taking up of innovation.
- Essentially, the NHS has a short-term approach to adopting innovation with an ultimate ambition to release cash from the system. But the real opportunities to create efficiencies come from long-term transformational projects, with appropriate funding to support them. There needs to be a shift from focusing on cost to focusing on value, but there are strong cultural and system issues that make this very difficult to achieve.

Castle-Clarke, S. Edwards, N. Buckingham, H. (2017). Falling short: Why the NHS is still struggling to make the most of new innovations. Briefing, Nuffield Trust. Accessed March 16th 2019

Focussing on the process of project management rather than uptake of project outcomes, Hendy (2012) considered whether a lack of support for pilot development and a lack of robust evaluation data might impact the transition of concepts into core business.

The outcome being unnecessary cost to the public purse, wasted workforce time and organisations being less inclined to support future innovation or test of concept projects. Estett (2015) suggested that a system-wide lack of understanding of how to plan, deliver, evaluate and transition pilot projects can (and do) lead to ambiguous outcomes and a questionable contribution to the agenda of evidence-based policymaking in the NHS. Brindle (2015) observed that while the utility of policy-piloting is largely taken for granted in government, there is no single template for how it should be done. Reasons for this might include confusing the need for pilots to either objectively demonstrate benefits, or as a tool to support government policy.

In the latter case, pilots such as the shifting from process to perception, Green (2008) commented that, in an organisation like the NHS which relies upon the maintenance of a safe, effective workforce, human factors (for example, traditionalism, silo working, role protectionism), socio-political change and fear of advertising 'failed' projects also affect pilot design and delivery, as well as the interpretation of outcomes.

The NHS Five Year Forward View noted these challenges and commented that the NHS will become one of the best places in the world to test innovations that require staff, technology and funding all to align in a health system, with universal coverage serving a large and diverse population (2014). However, the Forward View recognised that too often single elements have been 'piloted' without other needed components. Even where 'whole system' innovations have been tested, the design has sometimes been weak, with an absence of control groups plus inadequate and rushed implementation. As a result, they have produced limited empirical insight (2014). In a 2017 Independent editorial, it was asserted that there has never been much suggestion <sic> that the NHS has too few managers, or that they are underpaid. There must be something else missing that leaves the NHS so badly exposed to high-profile failures. Perhaps there are not enough rewards for success or penalties for failure, or the NHS simply doesn't attract a high calibre of 'civilian' staff, or there is a cultural issue (2017).

Published high-profile issues within NHS pilots include the 2013 *Lorenzo* project (Syal, 2016), GP *7 Day Working* initiative (NHSE, 2015) and NHS England's New Models of Care Vanguard programme (NHSE, 2016). Brindle (2015) noted was that there will always be a tension between implementing cutting-edge innovations and waiting until there is a robust evidence base to underpin them, which often takes several years to develop, may become out of date very quickly and may not realise benefits in time to suit policy makers and commissioners. Brindle referenced the three national NHS 'policy-pilots' described above, where implementation of the policies took place before their respective pilots concluded. Clear then on the path to integration of concepts in the NHS is the need to test a thing, make the test relatable and trustworthy and ensure that data are made available both during (interim results) and after (conclusions and recommendations) the test, to influence and manage stakeholder perception.

Managing Innovation in the NHS

While commercial transformation methodologies do not necessarily consider perception as both enabler and blocker, I realised that if I was to successfully overcome published and personally experienced challenges with the transition of NHS concepts into core business, I would need to find a way to map and navigate the sociological, the *human* factors that might impact on a project. This would include a means of recognising that *human nature* and all of the potential, fallibility and diversity associated with it underpins every output of the NHS. My programme management methodology and framework would need to be sufficiently adaptable to meet perceptions; would need to be something that people *got*; something that would frame human nature as a primary driver; something that I would be able to interpret and demonstrate reflectively in the narrative and conclusions for each of my projects; Something that would be relatable to the target audience and client alike. Furthermore, just building the 'thing' is not enough in public sector projects.
Each piece of work would need to be tested and 'proven' in a way that met the expectations and influenced the perceptions of the target audience.

Outside the of the actual programme evidence base, I would also need a deeper understanding of the innovation methodologies which had been considered and tested within the NHS previously and the reasons (perceived and actual) why they had failed to be adopted… and somehow, I would need to capture all of this in a definable framework.

Evaluation Methodology in NHS Workforce Innovation

Until my career took me into the NHS, I confess that I had never evaluated or published the outcomes of a project or project management process. I had simply never needed to in a commercial setting. My only exposure to evaluation was pre-initiation market research, milestone reporting and post-project review. My entry into the NHS was accompanied by a vertical learning curve on exploratory research, scientific and academic evaluation and consideration of how to weave evaluation into market research, project delivery and the transition of concepts into core business. What (perhaps) helped me avoid the world's most disastrous career change is that there is no single, universally accepted NHS approach to evaluation, although guidance on how to evaluate NHS studies has been published by groups including the Healthcare Foundation (2015). Organisations including the Healthcare Foundation, AHSN, NIHR, Kings Fund and Nuffield Trust focus on NHS research, with UK and international universities commissioned by NHS service providers on an ad hoc basis for project-specific research. NHS employees also carry out internal studies and research, for example within service improvement projects, audits and randomised clinical trials.

The Nuffield Trust commented that evidence generation and the bodies that support it are often not conducive to assessing 'real-world' innovations in a timely way – particularly where there is a focus on cost effectiveness (rather than cost benefit) (2018). In terms of approaches to evaluation in the NHS, quantitative, qualitative and (increasingly) mixed methods approaches are undertaken, largely dependent on the purpose and requester of the evaluation (NHSE, 2004) (Brown, 2004). A study of mixed methods evaluation in healthcare in 2004 concluded that there is no quality measure for mixed methods research in the NHS (Sale, 2004). While there is a suggestion in literature that **quantitative** evaluation dominates in healthcare research – for example, with the prevalence of randomised clinical trials as a primary service improvement focus for clinicians – there is an increasing recognition of the importance of a mixed methods approach including both quantitative and **qualitative** evaluation as a means of supporting workforce transformation. A search of two key repositories for NHS and healthcare research papers – NIHR Journals Library and NICE Evidence Search (12th September 2019) - resulted in:

- NICE database: 'Quantitative'[4] returned 13,180 results, while 'qualitative' returned 17,334 and 'mixed methods' returned 2,234. The search did not differentiate between journal articles, research projects or proposals.
- NIHR journals library: 'Qualitative' returned 839 results: 698 research projects and 141 journal articles; 'Quantitative' returned 371 results – 63 journal articles and 314 research projects. 'Mixed Methods' 145 results: 18 journal articles and 127 research projects – 'qualitative and quantitative' returned 78 results – 9 journal articles and 69 research projects.

[4] https://www.evidence.nhs.uk/search?q=%22quantitative%22%20data

Evaluating NHS Projects: Discussion

My lack of NHS experience influenced my approach to project management and evaluation in that, without clinical expertise to add credibility, my evidence would need to speak for itself. I quickly adopted and learnt the value of formative, developmental evaluation (Healthcare Foundation, 2015) as a tool to assist in the development, delivery and integration of pilot and test-of-concept projects. However, the challenge of ensuring that an evaluation methodology was relatable to a variety of users and stakeholders was apparent from the outset.

As previously discussed, my project delivery would rely on generating evidence through external evaluation to help shape and justify outcomes, while at the same time protecting the integrity of the data… essentially obtaining data without interfering with it. The risk of conscious or unconscious bias - as demonstrated in the 2017 challenge made by Professor Stephen Hawking to the UK Health Secretary – would be a loss of public confidence in the objectivity of NHS research as a result of 'cherry-picking' evidence or supressing contradictory research to suit a political position (Khan, 2017). Misuse of evaluation data can undermine workforce and public confidence in the value of innovation and risks project failure. To address these challenges, my programme methodology always includes a review of the need for evaluation during project development. If evaluation is deemed necessary, then I commission external evaluation teams at the start of projects, using a transparent and arm's length procurement process ('Project Management in the NHS' – Page 37). The project team receive data from the evaluation team, who are solely responsible for collection and processing of evaluation data. From a practical (*Pragmatic*? *Realist*? Hold that thought…) perspective, I develop evaluations to identify, recognise and respond to the perceptions of my target market from the moment of project approval. The aim is to use evaluation as a bridge between project team and target market; ensuring that project outputs are understood, accepted and able to transition into the core business of the target group.

A key part of my framework design was a recognition that rigorous scientific and academic testing – 'evidence-based practice' (Masic et al., 2008) – would be a necessary part of integrating any NHS project into business-as-usual. However, academic and scientific research outcomes would need to be carefully rooted in the practical. From the outset, I wrote into all evaluation methodologies the need for a practical, 'plain English' approach to data processing and presentation. In truth, this was mostly to help me make sense of the work such as to be able to sell it to stakeholders. However, the net effect was the consideration of how to write a set of outcomes that would be understood and adopted.

Any evaluation report would need to be something that was practically useful to the target market, relatable and not so overly academic that it would become meaningless on the 'shop floor.' Essentially, being clear from the outset that the aim of evaluation was to underpin a change in thinking necessary to integrate the work. As I progressed in my NHS career and then my PhD, I realised that I would need to achieve and then demonstrate shared acceptance and ownership by the target group. A project outcome must be perceived as something that the target group would have come to eventually on their own, in spite of my intervention… because it *just made sense.* Perception, belief, communication and their translation into individual and collective 'common sense' - establishing the 'truth' of a thing - are crucial to service change.

Managing Change: Perception and Truth Claims

How can we as project managers be guided as to 1) how to influence perception, 2) how to establish what 'truth' means to that target group and then 3) tailor the narrative of a project to be relatable? Essentially how to make a person or group of people agree that my version of the truth matches their expectation of what truth means. If I am saying that my project shows something, whether they believe it and then accept my explanation as true.

My journey in understanding issues relating to the transition of innovation had thus far included innovation methodology and evaluation methodology. I was now faced with a clear need to capture within my processual framework the importance of understanding and influencing perception at all levels. I reasoned that defining and then seeking to link the key human factors of truth claims and perception against both innovation and mixed methods evaluation methodologies would be a sensible start point. While innovation and evaluation rely on processual methodologies, both are characterised by philosophical explanations of those human factors that underpin the process. Turning to the literature, I was keen to understand how philosophy could assist me in linking human factors to innovation and evaluation methodologies, as well as whether a deeper philosophical understanding could help me articulate the need to influence and understand perception throughout a project cycle.

In general, my challenge in attaching a philosophical underpinning to my framework involved taking a complex philosophy, showing its relevance and then interpreting it in a way that the broadest cross-section of people could 1) understand; 2) see the point of; 3) trust and relate to and 4) decide to apply, *because it just makes sense* to them. Essentially, the relationship between philosophy and processual framework needs to be practically relevant, simple and above all something that is so relatable that it would be a regular part of common language across paradigms. Given that my processual framework was based on my experience, insight and evidence gathered, I reasoned that a philosophy which I perceived (and could argue) as making sense would be a good place to start.

My aim throughout this PhD was to attach a philosophical underpinning which is *universally* relevant. If I adopted and tried to explain my approach through an unrelatable philosophy, it would be entirely self-defeating. Hence using a cross-section of my projects, all aimed at different paradigms. If my approach worked across groups with very different perceptions, then I may be able to argue that it was capable of being accepted broadly across the wide variety of NHS systems universally.

In 2018, as I completed the process flow part of my framework, I recognised that 'influence perception' had to be more than just another box on the process flow or a tag-on to the 'communication' strategy. Perception runs through all stages of the process and, broadly is either an enabler or blocker for every decision made in any people-driven system. I needed to ensure that users of my framework would recognise the need to interpret and respond to perception during project design, delivery, evaluation and benefit realisation stages - from conception to inception to product delivery and post-project as necessary.

Similarly, I would need to consider how any philosophical underpinning to my process could also be applied broadly within mixed methods evaluation and then flexibly enough to meet the very different (subjective) needs of each evaluation. I wondered whether adopting a philosophy which I could relate to and which has a commonly understood meaning might be a logical, a *pragmatic*, place to start. *Practical… objective… pragmatic…realistic…* all terms that I have used to describe my approach in the past and as a means of influencing perception. Could this be a place to start? Possibly, but simply using the word 'pragmatic' is not enough… I needed to understand and then be able to explain its meaning in a way that people could trust.

Throughout my working life, I have approached the design and development of projects with what I always believed to be a practical… a *pragmatic* approach. Without a deeper understanding at that time, my interpretation of pragmatism was a literal one; identifying the challenge to be overcome and then planning the most cost and resource effective – the most *practical* – response. My role as a commercial project manager involved finding my client the most logical, justifiable and cost-effective path to take them from conception, to inception, to delivery and finally to an agreed outcome, in an agreed time. In general, a project manager oversees a pre-agreed process to enable a client to reach a destination. As I moved from private to public sector projects, my project management process needed to shift to address socio-political factors and perception, as both blockers and enablers. The issues discussed earlier including politics, traditionalism, cultural bias and protecting professional (traditional) role boundaries would need to be considered throughout the life of any NHS workforce project.

Pragmatism

Taking a *pragmatic* approach in managing public sector projects would, I discovered, require a literal approach of "dealing with a problem in a sensible way, that suits the conditions that really exist; rather than following fixed theories, ideas or rules" (Cambridge, 2019). This was a departure from my private sector approach of adopting a fixed framework to underpin a project management process. In delivering NHS projects, I consistently needed to demonstrate that each project:

- Held sufficient evidence to show that it would address a 'real' as opposed to perceived need. Essentially proving that the outcomes were 'true' against the stakeholder's perception of truth.
- Identified and demonstrated approaches to overcome identified barriers; approaches which would then need to be tested and 'proven' to users and stakeholders.
- Engineered a change in thinking on the understanding that the uptake of projects in the NHS is dependent on perceptions and beliefs of the workforce.

Throughout my working life, I have used the word 'pragmatic' to mean the common sense, practical approach to solving a problem. I confess that I had never thought too deeply into the philosophy of pragmatism beyond it being a word that helps me assure (and be assured by) my clients, stakeholders and colleagues that I was taking a common sense, practical approach… a tool in my '*convince people that this was or should've been their idea all along*' toolbox.

Pragmatism is both a philosophy and a colloquial term, defined by the Oxford Dictionary (2020) as *thinking about solving problems in a practical and sensible way rather than by having fixed ideas and theories*.

Aside from its popular public use, Bernstein also proposed that pragmatic themes have become fundamental in much of philosophy, with pragmatism discussed more widely today than at any time in the past (2014).
In defining his view of pragmatism, James explained "common sense" as a phrase that has a different meaning in philosophical discussions than in everyday conversations: "In practical talk, a man's common sense means his good judgment, his freedom from eccentricity, his gumption, to use the vernacular word. In philosophy it means something entirely different, it means his use of certain intellectual forms or categories of thought" (1907, pp.74–75).

With the philosophy of pragmatism immediately presenting itself as a contender, I turned to the literature to better understand pragmatism and whether this could appropriately underpin my framework; the aim being to describe the need for a relationship between the project and the perception of stakeholders, users and the target market.

The term 'pragmatism' was first coined in relation to the work of philosopher Charles Peirce in the 1870s and expanded upon by proponents including Wright, Dewey and James. The philosophy of pragmatism essentially explains that 'a thought's value lies in its practical consequences' (James, 1907), measuring the truth of an idea by experimentation and by examining its practical outcome (Whitt, online). Scott and Briggs stressed that within a pragmatist approach, *knowing* begins with uncertainty and is inevitably based on and framed by prior knowledge (2009). The starting point is therefore practical rather than theoretical. Peirce questioned how, if we are seeking to describe or discuss tangible 'things' which exist in the world, we can attach meaning to words to give context to those things. James explained the *pragmatic method* as the attempt to interpret a notion by tracing its practical consequences (1907). Peirce considered how it is possible to differentiate between 'conception' and 'concept' – that is, what we perceive a 'thing' to be, versus what the thing really is and from this, how we determine what is 'real' in the world. For example, if we take something simple that exists across all human societies - a table. Pierce' theory centers on the *concept* of that table and my *conception* of the table as I perceive it. So, my dinner sits on a four-legged, flat topped object that I am able to sit at. I perceive it to be a table. This is my truth. However, when I take my dinner off it and put my laptop on it… my friend comes to see me and perceives it to be a desk. The thing was built to be a table. I perceive it to be a table. My friend perceives and has a conception of the thing as a desk based on the circumstances surrounding the thing. So how is the 'truth' of this defined? How do I enable my friend to perceive the thing as it was intended to be?

Peirce described 'truth claims:' the meaning of words as opposed to the perception (subjective interpretation) of their meaning. In defining his pragmatic maxim, Peirce posited that if we can define what we are talking about and as part of that either include or exclude what we mean, then we can define what we mean when we say that word, by exclusion of other things… *I help you understand what a thing is by ruling out everything that it is not… to you* (Box 11).

Box 11: ***The Pragmatic Maxim***

In considering truth claims, Peirce distinguished three grades of clearness to demonstrate the application of his pragmatic maxim:

1. **Recognition:** At the most basic level, an idea is clear when we recognise it whenever we come across it. For instance, the pawnbroker who can see instantly whether a piece of jewellery is made of real gold, has a clear idea of gold.
2. **Categorisation:** Developing abstract criteria that unambiguously determine what is part of the concept and what is not. For example, the scientific definition of gold is the element that has atomic number 79. This definition uniquely determines gold, as no other element has this atomic number.

A problem with definitions like this is that they are made entirely in the abstract. They do not provide any guidelines on how to determine whether an object we actually encounter falls under it; they do not even tell us whether they apply to anything at all. The definition of gold given above only stipulates that if something fits the criteria specified in the definition, then it is (by definition) made of gold. Peirce sought to overcome this deficiency through his pragmatic maxim:

"Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object."

Application of this maxim gives Peirce' third grade of clearness. This relates meaning directly to the process of inquiry, instead of imposing it upon inquiry in the form of an abstract definition. To further explain the maxim, Peirce applied it to a number of concepts, such as weight, hardness, force, reality, transubstantiation and, a few years later, lithium. We can define lithium, abstractly, as the element with atomic number 3, as we did earlier with gold, or else we can define it, pragmatically, in terms of its experiential effects. The latter led Peirce to the following definition: "if you search among minerals that are vitreous, translucent, grey or white, very hard, brittle, and insoluble, for one which imparts a crimson tinge to an un-luminous flame, this mineral being triturated with lime or witherite rats-bane, and then fused, can be partly dissolved in muriatic acid; and if this solution be evaporated, and the residue be extracted with sulphuric acid, and duly purified, it can be converted by ordinary methods into a chloride, which being obtained in the solid state, fused, and electrolyzed with half a dozen powerful cells, will yield a globule of a pinkish silvery metal that will float on gasolene; and the material of that is a specimen of lithium."

What makes this definition pragmatic is that it tells you what the word means by prescribing what you

In this context, it feels as though Peirce links pragmatism with abductive inference research methodology. Expanding upon this, De Waal suggested that Pierce's pragmatism enables definition of a thing by prescribing what must be done to gain a perceptual acquaintance with its object (2003). In this sense, if we are defining a 'thing,' – something tangible, something 'real' - we can either include or exclude other things to help us define that thing, within the scope of our own perception.

James and Schiller expanded upon the Peirce perspective, defining a theory of truth in terms of satisfactory relations with other parts of our experience; that is, considering 'whatever is good in the scope of belief.' James explained true ideas as "those that we can assimilate, validate, corroborate and verify. False ideas are those that we cannot. The truth of an idea is not a stagnant property inherent in it. Truth happens to an idea. It becomes true, is made true by events" (1907). The notion that scientific enquiry and actual, tangible things informing the definition of a word seem to resonate across pragmatism's proponents. In relating Pragmatism to the 'true' meaning of a thing, Peirce did not present a complete philosophical position or whether it is a methodology or theory about truth; rather he was looking for truth being equal to correspondence; essentially, a word has to relate to whatever that word refers to. Peirce held that a true belief is one that is fated to be ultimately agreed by all investigators and that any object in a true belief is therefore real (1905). James and Dewey went further and proposed an instrumentalist interpretation of pragmatism. That is, that the utility of a theory is that it can solve problems, not whether it is true or false (Rescher, 1995).

Pawson and Tilley filter Peirce' concepts of pragmatism into realism (more on this later). Pawson's approach to realist synthesis follows the Peirce rationale that gaining an understanding of what works in the world requires the consideration (and inclusion or exclusion) of influencing factors including local adaptations and contingent factors. So, returning to my desk / table analogy, it is the presence or absence of contributory, confounding or influencing factors that enable an understanding of what works… what the 'truth' of a thing is. In this context, the word 'table' means something because there is a table in the world. The table then is definable because it is tangible… because it physically exists. However, the meaning behind 'table' may vary subjectively, distorting the definition. Therefore, the meaning of what is true, versus the criteria for believing something is true means that the understanding… the perception of the word 'table' by the people around me, may not always refer to the object that my laptop is currently sitting on. People might see it as a 'table' while I eat my breakfast on it, but then when my laptop is on it the conditions have changed and the perception may be that it's actually a 'desk.' Perception and influencing factors become a key issue. In the context of my work, by delivering a pilot which sought to demonstrate a position or answer a question, I considered whether I could respond to the 'how do we know that it works?' challenge by simply pointing at the work and saying 'well, look, there it is, working.' However, my idea of 'what works' may be entirely different to that of my target market - their perception and how I was able to engineer my work to suit their perception.

So why is this important? As a project manager, I cannot assume that just because I perceive a thing as working, that my user group, stakeholders or clients will see it the same way. For example, and as I explained in Chapter 2, the *PIED* study outputs demonstrated that pharmacist ACPs could manage patient need as part of a multi-professional team (Aiello et al. 2018). I *perceived* the project as having worked. However, RCEM interpreted the results to mean that more pharmacists in the ED would result in reduced investment for doctor training. RCEM perceived the study as not achieving its key objective of NHS service benefit. Their perception as a paradigm was that the study did not work, leading to their attempts to block progress of the work. Recognising this, I knew that I needed to work to influence the perception of this key group, to ensure that my description of the work gave them assurance and met their expectations, so far as was possible. This remains an ongoing part of my stakeholder engagement with this organisation.

In the context of NHS innovation and its transition to core business, it becomes crucial as a project manager to understand how the adoption of a concept or proposal may vary according to perceptions of the target group.

Pragmatism, Realism and Mixed Methods Research

Mixed methods research is now extensively employed in UK nursing and health services research (Allmark, 2018). This is reflected within my own programme, where a combination of qualitative and quantitative evaluation and workforce research underpins all project delivery.

Allmark noted that the standard philosophical underpinning of mixed methods research is Realism or Pragmatism, with a key challenge being that both are considered incompatible or at least at odds with one another (2018). Pragmatism views scientific inquiry as the attempt to find theories that work - that make a difference - to a practical or intellectual problem. Those that work best are *true*; or to put it another way, true theories are those that work best in resolving our problems. By contrast, for realism, scientific theories are true if they correctly describe the mind-independent natural and social worlds; worlds which consist of mechanisms, entities and forces that lie beneath the world we actually experience (2018). This traditional incompatibility is increasingly challenged, not least because it is the Peirce definition of pragmatism which lies at odds – there are many and varied definitions of pragmatism including that those each proposed by James and Dewey. Further, with fewer philosophical dependencies than realism, pragmatism makes fewer assumptions about a world beyond experience so may seem preferable. The problem with the application of pragmatism to mixed methods research, according to Creswell and Clarke, arises in deciding what works (is sensible), rather than being an objective or value neutral thing (as with realism) (2007).

In general, there seems little difference for the researcher on the ground in adopting either pragmatism or critical realism within a mixed methods evaluation. For example, a healthcare system identifies a need: not enough staff to treat patients…an objective need. The subjective need becomes *we need more doctors* from the doctors; *we need more nurses* from nurses; *whatever, as long as it's best value and sustainable* from service commissioners (cynical I know!) and so on. When planning a change project, how do we investigate the truth in each of these perceptions and from that determine what 'more staff' should mean and then how to communicate that to the subject groups in a way that they will confidently believe, trust and therefore adopt? Moreover, how do I reflect this need within project evaluation and research? Proponents of mixed methods research contend that taking this approach with a pragmatic underpinning, enables consideration of 'what works,' to answer research questions (Johnson and Onwuegbuzie, 2004). When considering the theoretical underpinning for Mixed Methods Research, Creswell and Clark adopted a pragmatic line, using pragmatism in a colloquial rather than theoretical sense. Essentially considering practically what works and what is sensible or acceptable.

However, critics invoke the incompatibility thesis, contending that mixing research methods can create argumentative incoherence by attempting to blend paradigms with incommensurable epistemic and ontological foundations (Johnson and Onwuegbuzie, 2004; Lipscomb, 2007).

Having first read this and then after spending some time attempting to translate it into English, it seems as though critics believe that mixed methods research is a melting pot of incompatible methodologies, with so many confounding factors and interdependencies in the data that clear and unambiguous conclusions are impossible to report accurately. However, Scott and Briggs challenged the incompatibility thesis, pointing out that the widening acceptance and practice of mixed methods work suggests, from a pragmatist perspective, that many researchers and end users have found practical value in this approach (2009). In comparing Realist and Pragmatic philosophies to underpin healthcare research, Allmark concluded that Realism has attractions both on its own behalf, as seen in its increasing popularity and in relation to Pragmatism. However, a knowledge of Pragmatism and its relation to mixed methods is helpful as there are insights to be gained for the Realist researcher, for example, in relation to the beginning and end points of research projects (2018). The suggestion from both Scott and Briggs and Allmark being, it seems, that combining approaches (or at the very least appreciating one while applying the other) can actually support researchers.

Creswell (2007) suggested that pragmatism focuses on outcomes rather than antecedent questions and that it gives researchers methodological freedom of choice. Creswell's pragmatism is therefore that 'truth' is *what works at the time* and a pragmatist approach may require the breadth that multi-method research enables. Brierley (2017) followed this line, recognising that pragmatism is frequently described in mixed methods research literature as an appropriate paradigm for conducting mixed methods research; for example, by proponents including Howe (1988); Tashakkori and Teddlie (1998); Patton (2002); Johnson and Onwuegbuzie (2004); Denscombe (2008); Scott and Briggs (2009); Johnson and Gray, 2010 and Creswell and Clark (2007). However, it should be noted that varying forms of pragmatic philosophy were advocated by these authors (Johnson and Gray, 2010). Johnson and Onwuegbuzie (2004) for example, proposed a version of pragmatism that draws upon prior work that they considered to be appropriate for mixed methods research… possibly following the Peirce abductive inference approach. Also, I do not think that Creswell and Clarke tie pragmatism to any specific version of philosophic pragmatism in the context of mixed methods research. Rather, they appear to suggest that it is possible to switch between paradigms. What appears to be a consistent position amongst these authors is the argument that a pragmatic approach gives less influence to philosophical assumptions for the conduct of research methods and focusses more on the practical; bringing pragmatism more in line with critical realism. By adopting this form of *pragmatic turn*, Bernstein (2010) suggested that researchers can be less restricted by philosophy in terms of how they conduct and communicate research. Kuhn proposed that the absence of competing paradigms that question each other's aims and standards makes the progress of a normal scientific community far easier to see (1962). It should also be noted that philosophies like Realism come with resources to assist researchers in applying it to evaluation (eg. RAMESES[5]). Pragmatism, by comparison is less well resourced. A purely practical consideration in what resources are available to support the research is also necessary. In considering whether and why different or a combination of philosophical approaches might be necessary, James explored whether the competing philosophical ways of viewing the *journey* are as relevant, if the practical end-result… the *destination*… is commonly accepted (Box 12).

[5] https://www.ramesesproject.org/

Box 12: *Does it matter how we describe the journey, if the destination is the same?*

In his second lecture, "What Pragmatism Means," James explained how pragmatism can provide real approaches to ideas that seem impenetrable, since "new truth is always a go-between, a smoother-over of transitions" (p.27) and that "pragmatism may be a happy harmoniser of empiricist ways of thinking with the more religious demands of human beings" (p.31).The pragmatic method in such cases is to try to interpret each notion by tracing its respective practical consequences. What difference would it practically make to anyone if this notion rather than that notion were true? If no practical difference whatever can be traced, then the alternatives mean practically the same thing, and all dispute is idle. Whenever a dispute is serious, we ought to be able to show some practical difference that must follow from one side or the other's being right. (p.20) Imagine, in fact, the entire contents of the world to be once and for all irrevocably given. Imagine it to end this very moment, and to have no future; and then let a theist and a materialist apply their rival explanations to its history. The theist shows how a God made it; the materialist shows, and we will suppose with equal success, how it resulted from blind physical forces. Then let the pragmatist be asked to choose between their theories. How can he apply his test if a world is already completed? Concepts for him are things to come back into experience with, things to make us look for differences. But by hypothesis there is to be no more experience and no possible differences can now be looked for: Both theories have shown all their consequences and, by the hypothesis we are adopting, these are identical. The pragmatist must consequently say that the two theories, in spite of their different-sounding names, mean exactly the same thing, and that the dispute is purely verbal (p.42).

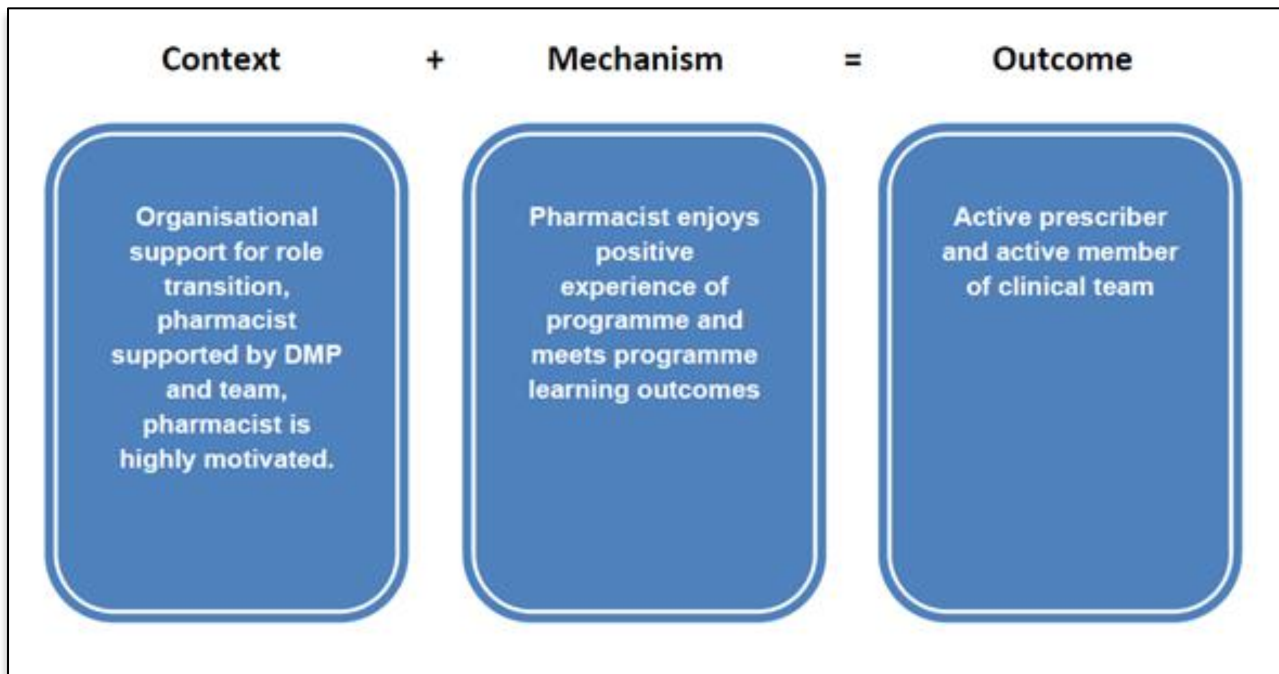
Encylopedia.com – "Pragmatism: William James"
https://www.encyclopedia.com/history/culture-magazines/pragmatism-william-james **- Accessed 23rd March 2020**

Regardless of the view, a cautionary note is that mixed methods research should not be adopted arbitrarily (Denscombe, 2008, p.274). Rather, every evaluation is unique in its circumstances and entirely subjective. Mixed methods should be adopted with due consideration to the conditions within which the research lies for any given project. Project teams should adopt an appropriate research methodology to enable an evaluation team to frame and respond to research questions, hypotheses or the service need to which the project seeks to respond. Essentially, finding a research methodology which is relatable to the target audience. Kuhn argued a need for researchers – regardless of their philosophical leanings or research approaches - to communicate their paradigmatic beliefs to each other using a common vocabulary, to enable members of one paradigm to understand (although not necessarily concur with) the claims of another (1996). The end result is to enable systems used to a particular research approach to accept and understand research arising through other approaches. This is crucial in enabling systems to trust, understand and subsequently adopt the outcomes of research across a range of paradigms. In my world, this might mean establishing research outcomes for pharmacists working in an Emergency Department and translating those outcomes to show benefit for the workforce in connected systems; for example, mental health, acute medicine or urgent care (HEE, 2019). Recognising the importance of cross-sector communication, Morgan asserted that a pragmatic approach to the conduct of research would not deny any communication between researchers who pursue research in different ways (2007).

In a context where paradigms are defined as shared beliefs among members of a target market (‘paradigm’ being a healthcare system or workforce in this context), the emphasis is on positioning the research to enable stakeholder and user consensus as to *what works*. Morgan considered whether a pragmatic approach could encourage researchers who use different methods in different paradigms to place an emphasis on shared meanings and pursuing joint action (2007). In other words, there is an emphasis on developing shared understandings to develop shared lines of behaviour. This is an important consideration in my work, which covers a range of research areas or paradigms. This to me therefore a key consideration in the adoption of a philosophical underpinning. My work involves commissioning, consolidation and evolution of research across health and care systems, requiring a means to communicate with and connect a range of research methodologies. Bernstein recognised as a key component of a pragmatic turn that the need to hold onto a common, relatable language in the communication of NHS research and outcomes with the umbrella approach of communicating ‘what works’ requires quantifying *how I know* what works (2010). Quantifying ‘what works’ includes proving and describing outcomes in a way that is relatable across research and workforce paradigms. I feel like this approach resonates with NHS innovation projects, as research and development tend to be based on identified need, rather than purely scientific exploration or academic enquiry. My projects relate to people and the world as it is perceived by my target groups. My own perception as project manager is only relevant in this case as a potential cause of bias.

Part of being able to demonstrate *what works* is understanding the scope and limitations in the interdependencies that impact people-focussed research. This, in particular, applies to establishing social causation (cause and effect); predominantly relating to those known and unknown human factors which influence any people-focussed project. Where the motivator for a project is to demonstrate what works and if my work is influenced by social causation, then it seems that if I follow a pragmatic approach, I need to follow Peirce pragmatism and define the limitations and confounding, influencing factors in order to define and communicate my output across paradigms. But how does this link to perception? Dewey’s *Empirical Metaphysics* held that perception is interpretative, full of inference and grown from interaction with and participation in the practical effects of ideas (Dewey, 1916, 1917; Houser et al., 1998; Jensen, Richter, & Vendelo, 2003). This principle was followed by Rescher in his system of Pragmatic Idealism, where the human mind and the external world – *perception?* - are inseparably essential to the construction of knowledge (Kekes, 1994). If by comparison I take a realist approach, I follow the four key linked concepts for explaining and understanding what works: ‘mechanism’, ‘context’, ‘outcome pattern’, and ‘context-mechanism-outcome pattern configuration’ (Rehg, 2001). However, the processual nature of realist evaluation and challenges associated with defining an ‘end’ to research can put this approach at odds with programme and policy-focussed evaluation.

It is worth noting that I approached one of my earlier projects with a Realist approach to the evaluation. Within the 2014-17 Clinically Enhanced Pharmacist Independent Prescriber (CEPIP) pilot, I commissioned Worcester University to carry out a mixed methods evaluation. The team applied Pawson and Tilley’s (1997) realist evaluation methodology to contextualise the study findings – in particular by applying the realist Theory of Change (Fig.).



The focus of the pilot evaluation was on the interaction between the participants' individual **contexts** (for example, their particular organisational culture) and the **mechanism** (the respective CEPIP pilot programmes), since it was believed that the interaction between these two factors would create the programme's impact and **outcomes**. Therefore, the study sought to understand what works for whom, in what contexts, and how. Interestingly, the project team and evaluation team ended up at odds, as the evaluation team could not align the evaluation pace and scope to the project KPIs, as well as clearly being able to articulate and end point to the research which underpinned the evaluation. In retrospect, applying a pragmatic philosophy may have enabled a similar approach to collecting and presenting research and outcomes in a manner that better suited the project timeline. Although the lack of resources to support the evaluation team in presenting the outcomes may have impacted the quality and efficacy of the evaluation. Taking a combined approach may have allowed access to resources and a processual framework (Realism), while also meeting the practical needs of the researcher and other stakeholders using whatever works to this end (pragmatism).

This understanding is important to my work in considering the potential for a framework to support the transition of concepts across *any* healthcare system. In particular in understanding that no project delivery framework can work without an understanding of the need to influence perception.

As a project manager (and fallible human being), I am impacted by social causation and the risk that my own perception can influence my work. I recognise that the search for common threads or frameworks can often result in unconscious bias, false positives and misleading outcomes – *If I look hard enough, I will always imagine a pattern*. Expanding on Conrad's neurological concept of apophenia, Shermer's concept of Patternicity simply contended that our brains do not include a "baloney-detection network" that would allow us to distinguish between true and false patterns (Poulson, 2012). The fact that my truth may be different to that of my target audience may not be a consideration unless I recognise the need to consider the possibility.

If I am seeking to identify, test and establish a philosophical underpinning to my processual framework, could a philosophical approach rooted in a combination of pragmatism and critical realism work? Could a realist perspective allow me to consider what is plausible, consider the impact of perception and avoid the risks associated with falling into patternicity? Could Bernstein's pragmatic turn allow me to recognise - while not necessarily align to - any of the various pragmatic philosophies, enabling a focus on how to communicate what works across paradigms, define an end point to the work and consider what works for the target audience?

In reality, the process of defining influencers and issues associated with communicating research outcomes across philosophies and research methodologies is clearly problematic and, reviewing the literature, has been widely recognised as such. That said, there is compelling evidence that following a combination of the Bernstein approach to pragmatism and the Pawson and Tilley approach to realism in project evaluation, combined with a clear and translatable processual framework to manage the delivery of project, could enable a project manager to recognise, capture, interpret and respond to the feelings, attitudes, beliefs… *perceptions*… of a target market. Such an approach might assist a project manager in confidently designing projects to deliver relatable outputs which meet the expectations of stakeholders and users, thus enabling the transition of concepts into core business.

Conclusion

The development, test and integration of NHS workforce concepts is high risk and (in my experience) considered a luxury by a workforce constrained by financial austerity and time pressures. To be able to demonstrate 'real' (as opposed to theoretical) evidence to demonstrate how a concept will (rather than may) benefit the participants (especially where the outcome is not the desired one) is crucial to achieving the trust and support from the workforce necessary to integrate the concept. The aim for any pilot is to demonstrate that the concept being tested – the intervention – is real and relevant because it produced effects which are relatable to the target market. The transcendental capability of the work must be demonstrated beyond any doubt to the target market; that is, that the concept caused an effect, resulting in an outcome which they perceive as meeting their expectation of 'what works.' Ensuring that the perceptions of the target market are the lens through which the project team view a project's development and delivery is crucial to successful transition into core business.

In seeking to identify a new approach to NHS change management and transformation, I feel confident in adopting a combination of philosophies based on available literature, my own evidence and observations and taking the James line around whether the competing philosophical ways of viewing the *journey* are as relevant, if the *destination* is commonly accepted. I will continue to refine and test this thinking and developing an evidence base, as my programme continues to evolve. Without a similar model in existence in the NHS to test my own approach against, perhaps this thesis could be taken as a 'straw-person' to open future debate as to an appropriate philosophical approach to managing change in the NHS.

Taking a combined pragmatic-realistic (*Pragalistic*?) approach to the design and commissioning of mixed methods evaluation to accompany my projects, might allow me to ensure that there will be a common language and supporting resource adopted across and available to my evaluations.

This approach could enable alignment with other research paradigms and ensure that both research and NHS service providers can make sense of, relate to and confidently adopt my work. This approach also helps address the key challenge of social causation, where human factors are a key influencer of outcomes.

Despite the various approaches to and definitions of pragmatism and however argued, I recognise now that a combination of Bernstein pragmatism and Pawson and Tilley's Realism is capable of being the interpreter between project team and stakeholder – a means of enabling a common language to drive the development, delivery and integration of workforce transformation and linked evaluation within the NHS.

Chapter 4: Concluding the PhD

Concluding this narrative was always going to be a challenge. My work involved a prospective development of a processual framework from an evidence base. I did not set out to create a framework or use my work as the basis for a PhD, or to resolve a single study question. It was only while delivering a long-term programme across healthcare systems that the commonalities in approach began to manifest and crystallise. At that point, the possibility of a common framework to enable the delivery of workforce transformation projects started to become apparent. In short, the PhD is written to support my work, rather than the work being used to support my academic research. As my project management process was never intended to be judged against academic criteria, the arguments and evidence presented in this PhD do I think lack unconscious bias associated with gathering and presenting data to fit a research question or study aims. This I hope will add to the originality of this narrative. My programme of work will continue, with this PhD being a chapter in that journey rather than the journey itself.

To be clear, this PhD does not seek to suggest that there can be no innovation without a defining theoretical framework. Rather, that a defining framework can provide an enabling mechanism and support structure for the design and delivery of innovative practice. I elected to undertake a PhD to give me the tools and expert support to identify and make sense of the theory which underpins and provides the basis for my work. I wanted the PhD to be my springboard into a deeper philosophical understanding of the human factors effecting the evolution of the NHS. The value to my target market is the recognition of this as crucial in any change process where people and their perceptions are the initiator, driver, blocker, enabler and 'output' for workforce transformation in the NHS.

My academic journey has given me the insight that I needed to explain my process and prepare my framework for presentation to peers and stakeholders across the strategic NHS. With a clear need for an evidence base to *prove* the safety and efficacy of a single approach to innovation, I have attempted to link my framework both to the evidence which defined it, as well as the workforce need which justifies and gives it relevance.

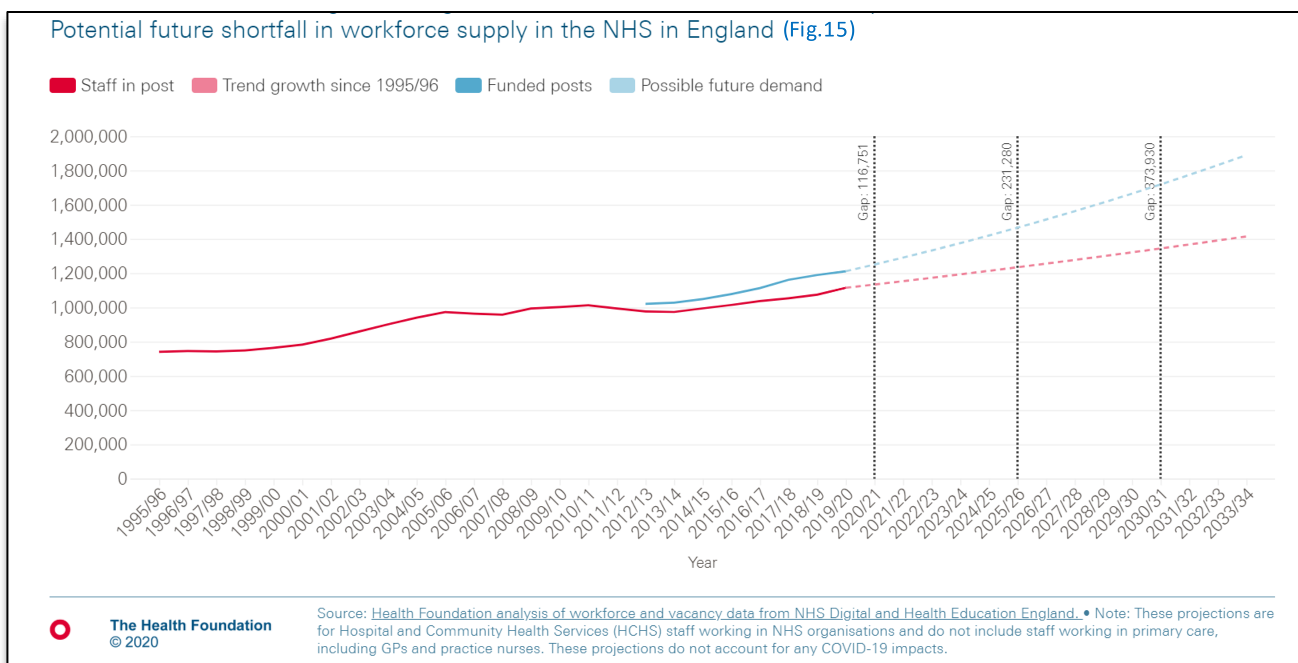
COVID-19: Impact and Lessons Learned

Perhaps the greatest test to my framework or any other business change methodology has come with the 2020 COVID-19 pandemic. I could not conclude this narrative without making mention of this world-changing event. Most of my programme projects were paused in March 2020, as NHS education and training were suspended to allow the frontline workforce to focus all efforts on managing the crisis. However, the pandemic led to some unexpected peaks and troughs, including an expected spike in acute clinical service need and unexpected falls in A&E attendance and ambulance service conveyance – by as much as 30% in some regions (HEE, 2020).

In May 2020, Health Education England's executive launched a review of all paused programmes, with an ambition to restart clinical education and training in June 2020. The aim being to protect training pipelines and avoid future workforce pressures arising from 'fallow periods' in trainee outturn (HEE, 2020).

My programme framework has proven invaluable in managing the pause and rapid restart of my projects. Also, as the NHS prepares for a 'new normal,' I proposed the adoption of a single approach to project development and management across HEE, with alignment to be pursued between HEE and other NHS Arm's Length Bodies (NHSE, NHSI, NHS Employers, Public Health England etc).

Despite NHS organisations working proactively to manage demand and prepare for an unpredictable future, it is inevitable that COVID-19 will exacerbate the significant workforce pressures that existed before the crisis. *Health Foundation* projections indicate that based on current trends, existing NHS workforce gaps in England will expand significantly in the coming years, undermining future service sustainability (2020). The Health Foundation suggested that even before accounting for the implications of COVID-19, the NHS is projected to face a workforce shortfall of over 115,000 full-time equivalent staff in England in 2020. Based on current trends, and without major shifts in workforce policy and planning, this NHS workforce supply gap will double from 2020-25 and is projected to exceed 370,000 by 2030/31 (Fig.15) (2020).



Conclusion

There has never been a greater need for integrated working across traditionally silo systems, with clear and unambiguous processes in place to restore clinical services and prepare for future demand spikes. Writing in the Journal of Integrated Care in 2019, I suggested that if we work to a common cause, we are enabled to work together as a joined-up, integrated team. If we take every opportunity to learn together, then we will learn how to work together. Give us something to do that we can only do together, and we will join up because we have to… *Because we cannot achieve our goals alone.* We learn how to work together through developing combined approaches to enable real change and the challenge then will become not whether we *should* work together, but *why we shouldn't* (Aiello, Mellor, 2018).

I will always assert that NHS service providers are more than capable of developing and then transitioning innovation at scale. However, it is up to system leaders to enable integrated workforce development through a shared vision, partnership working and the breakdown of silo approaches. Nothing less than collective action that connects local innovation and best practice within consistent national frameworks is required, if we are to meet the aspirations of a multi-professional, health and care workforce, systemwide. Such action needs a joined-up, *transformational* approach at both strategic and operational levels from workforce planners and commissioners, if we are to achieve truly integrated healthcare. I hope that the framework presented in this paper will help NHS service providers and commissioners achieve this ambition.

As my NHS career develops, I continue to challenge the UK Healthcare system that, unless the NHS uses the clinical workforce more intelligently to support the development of new roles from sustainable sources, workforce gaps will remain and will continue to grow exponentially; proportionate to ever-increasing patient demand.

A reactive approach to NHS workforce development is simply no longer an option.

Chapter 5: Originality and Contribution of the Outputs

Throughout this narrative, I have drawn insights, evidence and approaches from my programme portfolio to demonstrate the relevance of my transition framework across NHS workforce systems. Where I have drawn on project evidence, I have chosen to present that evidence in a narrative rather than scientific format. Without wishing to re-visit and re-prove the published work, my aim has been to give the reader in impression of the scale of the challenge facing NHS project teams in enabling UK healthcare systems to respond to current and future public demand.

The publications chosen for this PhD are representative of the scale and variety of project design, deliverables and evaluation within my programme. The projects to which my publications refer all demonstrate the applicability of my processual framework (see Chapter 2). Despite each project having delivered very different 'products,' the common success measures include workforce impact, service benefit and return on (public) investment. This is reflected in the published works.

In all of my published works, my input included:

- Writing some or all of the content – where primary author, I designed the layout and wrote the entirety of the paper with support from HEE and Aston University programme and research teams (respectively).
- In all cases, I had creative control of the paper – writing the introductions, conclusion and discussions and leading the editorial process.
- Responded to peer review comments – either directly, solely or alongside the co-authors.
- I chose and agreed the journals to be approached and worked with key contacts to achieve invitations to publish (invited articles).
- All of the projects and associated workforce data and project papers which informed the articles were developed, led and commissioned by me on behalf of HEE.
- Creating the intellectual property rights for this work, which enabled the publications. My legal background allowed me to broker the commissioning of the studies and evaluations, ensuring that the IP remained held by the NHS, on behalf of the public.

To assist the reader the following sections will provide a summary of the publications, the work-stream to which they relate and for each a description of my contribution.

1. Pharmacist ACPs in Urgent and Emergency Care

Publication	Journal	*What was it about?*	*What did it show?*	My contribution to the publication?
"Pharmacist Clinicians in the 21st Century Workforce" Aiello M, Terry D, Selopal N, Huynh C, Hughes E	**Clinical Pharmacist & The Pharmaceutical Journal** Link Published: February 2017	It is argued that the clinical pharmacist of the future should be capable of confidently and competently managing patients at an advanced clinical level – with health assessment, diagnostics and clinical examination skills comparable with that of an advanced clinical practitioner. This article examines these data and proposes enhanced clinical development pathways for pharmacists and calls for a change in thinking around the future integrated clinical workforce across urgent, acute and emergency care.	In the future urgent, acute and emergency medicine clinical workforce, new models of care and care delivery need to be developed, in order to maintain and enhance standards of safe and accessible patient care. A departure from traditional (doctor-led) approaches to workforce planning, and an understanding of scope and governance surrounding emerging clinical roles are necessary to develop a sustainable, multi-skilled workforce.	➢ Primary / corresponding author. ➢ Designed, developed and led the programme of work which generated the paper.
Clinical Pharmacists in Urgent and Acute Care: The Future Pharmacist. Hughes E, Aiello M, Terry D.	**Commissioning Monthly** Commissioning, 2014; 1(6):48-53 Published 2014	2014 Editorial article discussing in editorial format the initial outcomes from two pilot studies: PIED-WM and the Clinically Enhanced Independent Prescriber programme for Pharmacists. Both projects assessed a Pharmacist's role and impact in Emergency Departments and within Clinical Decision Teams.	Interim outcomes in 2014 suggested that West Midlands ED Pharmacy projects have and continue to provide a foundation with which to inspire innovation in Advanced Clinical Practice pharmacist development in Urgent and Emergency Care. Pilot outcomes justified future interventions.	➢ Primary / corresponding author. ➢ Designed, developed and led the programme of work which generated the paper
The Future Enhanced Clinical Role of Pharmacists in Emergency Departments in England - A National Multi-Site Observational Evaluation Hughes E, Terry D, Huynh C, Petridis K, Aiello M, Mazard L, Ubhi H, Terry A, Wilson K, Sinclair A.	**International Journal of Clinical Pharmacy** Link Published: July 2017	Scientific report outlining the methodology, results and conclusions of a multi-site observational study to determine if Emergency Department attendees could be clinically managed by pharmacists with or without (post-registration) advanced clinical practice training.	The total proportion of ED cases that could potentially be managed by a pharmacist was 36%. The greatest potential for pharmacist management was in general medicine and orthopaedics (usually minor trauma). The findings support the case for extending the role of clinical pharmacists with further advanced clinical training, to support clinical management of the ED workload.	➢ Designed, developed and led the programme of work which generated the paper. ➢ Co-authored and edited the paper and prepared revised version after responding to peer review comments.

Publication	Journal	*What was it about?*	*What did it show?*	My contribution to the publication?
The Potential for Pharmacists to Manage Children Attending Emergency Departments Terry D, Petridis K, Aiello M, Sinclair A, Huynh C, Mazard L, Ubhi H, Terry A, Hughes E	**Archives of Disease in Childhood (BMJ)** **DOI:** 10.1136/archdischild-2016-311535.1 Published: September 2016	There have been concerns about maintaining appropriate clinical staff levels in Emergency Departments in England. The aim of this study – part of the *PIED* suite of projects - was to determine if Emergency Department attendees aged from 0–16 years could be managed by community pharmacists or hospital prescriber pharmacists with or without further advanced clinical practice training.	Paediatric patients attending Emergency Departments were judged by pharmacists to be suitable for management outside a hospital setting in approximately 1 in 11 cases, and by hospital prescriber pharmacists in 4 in 10 cases. With further training, it was found that the total proportion of cases that could be managed by a pharmacist was 45%. The greatest impact for pharmacist management occurred in general medicine and orthopaedics.	Designed, developed and led the PIED-Eng national study and identified this discreet study area as suitable for further investigation and publication as a part of the larger Pharmacist ACPs in UEC programme. ➢ Co-authored the article and presented findings.

The Pharmacist ACP Transformation programme forms the backbone of this narrative. *Pharmacist ACPs* was an iterative, long-term programme, focussing on the ability of one of the UK's oldest clinical roles to break free of traditional working models and explore the potential for expanded clinical roles. In parallel was the fundamental need of the programme to adapt to changing environments (political, sociological, clinical, financial, public) while still seeking to address its guiding methodology.

To assure the reader that I had more than a trifling involvement in the programme and my published works, I confirm that this world-first, world-leading transformation programme started with my napkin... Sitting in the canteen at Birmingham Children's Hospital in February 2014 with the Chief Pharmacist, lead ED Consultant and the West Midlands' Postgraduate (medical) Dean, I had called the meeting to consider how severe pressures on ED workforce might be addressed by training and deploying the workforce in new ways. My line manager and mentor (Prof Liz Hughes) proposed that pharmacists, an oversupplied workforce at that time, may be capable of undertaking patient management in the ED.

In the course of that conversation, we jointly developed three guiding questions (what *can* a pharmacist do? What *could* a pharmacist do? What training is needed?). A conversation that might have been lost to history was captured on my napkin (excuse the product placement in the image!), taken back to my office and became the basis for the *PIED-WM* study.

This ultimately opened the world of advanced clinical practice to pharmacists for the first time. This opportunity and the work it generated gave me a career-long belief that anybody… no matter their seniority or reputation… is capable of transforming the NHS… they just need recognition and support.

The *Commissioning Monthly* publication (Hughes, Aiello, Terry, 2014) was my first attempt at a journal article and my first opportunity to present the outcomes of the *PIED-WM* study. At that point in the programme we could only speculate, as the evidence was compelling rather than authoritative. For that reason, we chose a focussed (rather than wide-reaching) journal with a reputation for supporting innovation and a reader base composed of system commissioners and policy makers. Essentially testing the water, while still drawing necessary attention to the work from key target groups. In 2016 and following the expansion of the PIED study with the national PIED-Eng and linked CEPIP and ACP projects, I proposed simultaneously launching a trio of article submissions to present findings and recommendations. I wanted an article which captured the journey in a narrative format, describing the various projects, the evidence for service benefit and recommendations in a respected national journal. I approached and was accepted for an invited article by the *Pharmaceutical Journal*. For the second article and following literature searches which suggested that the size and scope of the study was a world-first, I wanted to present the PIED-Eng findings as a scientific article, explaining the strategic context, methodology, results, conclusions on the international stage. The *International Journal of Clinical Pharmacy* responded favourably to the submission. For the third article, I wanted to demonstrate the potential of the findings to influence workforce transformation across healthcare systems. With the first of the PIED test sites being Birmingham Children's Hospital, I tasked the evaluation team to extract evidence to demonstrate the potential of Pharmacist ACPs in Paediatric Emergency Departments. This article was presented as a scientific analysis of the paediatric sub-section of the PIED-Eng evidence base. I was keen to focus on a journal with a broad multi-professional reach – BMJ's *Archives of Disease in Childhood* was considered appropriate for the purpose.

For each article and from a personal perspective, I was determined both to develop my written style by learning from my co-authors and take a substantial role in design and drafting. There was less scope for narrative writing in the scientific articles, so my contribution included drafting the strategic direction, conclusions and working jointly on the layout and presentation of the papers. I also led the editorial and peer review revisions for both papers, on behalf of Health Education England. For the Pharmaceutical Journal submission as lead author, I designed and wrote the paper, with my co-authors supporting the identification of presentation of evidence. Again, I led the peer review editorial process. My aims in jointly publishing the three papers were:

- To ensure that the evidence and research leading to the outcomes were clear and accessible to all – to ensure that the NHS does not expend public funding in repeating research unnecessarily.
- To add peer-review rigour to the various levels of quality control and governance within the development of the programme evidence base – To reassure stakeholders that evidence is relevant.
- To use public-facing media to assist me in overcoming traditional, attitudinal and cultural blockers to change. Essentially, mitigating any risk that the work is 'buried' by those opposed to change.
- To use journals and publications which the target audience respect and trust, to work on the perceptions of the target market – *"the peer reviewers at X publication think this is safe and useful."*
- To lay the foundation for the full programme publication.

The Pharmacist ACP programme officially concluded in December 2019, with the publication of the final HEE workforce report - *Advanced Clinical Practitioner (ACP) Pharmacists in Urgent and Emergency Care: Evidence and Recommendations for Implementation* – for which I was primary author. The paper was endorsed and signed off by HEE's Chief Executive and NHS England's Chief Pharmaceutical Officer. The paper relied on the journal articles both for structure, credibility and the evidential underpinning.

2. Post-CCT GP Fellowships: Rotational Workforce Strategies in Urgent and Emergency Care

HEE's regional and national Post-CCT GP Fellowship programme and its transition into a multi-professional rotational workforce model from 2019.

Title	Journal	What was it about?	What did it show?	My contribution to the publication?
Extended Training to Prepare GPs For Future Workforce Needs: A Qualitative Investigation of a One-Year Fellowship in Urgent Care Dale J, Russell R, Harkness F, Wilkie V, Aiello M	**British Journal of General Practice** DOI Published: September 2017	To investigate the experience of recently trained GPs undertaking a one-year full-time fellowship programme; designed to provide advanced skills training in urgent care, integrated care, leadership and academic practice. The report also comments on the impact on subsequent career development, as a future recruitment and retention strategy.	The fellowship was highly rated and felt to be balanced in terms of the opportunities for skills development, academic advancement and confidence-building. Participants believed that a rotational fellowship programme could make general practice a more attractive career option for newly qualified doctors.	➢ Designed, developed and led the programme which generated the paper. ➢ Co-designed the evaluation methodology. ➢ One of five authors, I wrote the introductory and programme sections, jointly drafted the conclusions and discussion and had editorial oversight and sign-off responsibility of the paper for HEE.

At around the same time as our pharmacy programme launched (2014-15), my team and I had something of a transformative renaissance. After being allowed to evolve our EM Taskforce programme into a UEC Transformation Programme, I was enabled to broaden the scope of the programme to consider other systems beyond the ED. As a newcomer to the NHS, I wondered why it was that clinical professions had to sit within silo healthcare systems, when their skillsets could, it seemed, be applied across different systems simultaneously… so, 'rotating' professions across systems. With the opportunity to access expertise and learning within and around HEE, I developed a programme to explore the potential for rotational working, drawing on system evidence and previous approaches. As evidence emerged to suggest that roles could rotate to address identified workforce need across systems, I was able to channel this research and develop HEE's first rotational GP Fellowship Programme in Urgent and Acute Care. Following the principles for working on the perception of target audiences that I was establishing within HEE's pharmacy programme, I elected to publish the outcomes of the pilot fellowship evaluation. I realised that I could lever necessary support for published works by writing it as an expectation into evaluation supplier contracts. Making published works a contractual obligation was a first for HEE and would ensure that any evaluation team commissioned to analyse our projects would know from the outset that their work would become publicly visible.

This had the dual effect of ensuring the highest quality from the evaluation team (nobody wants to be called out publicly or amongst peers on a poor quality evaluation – evaluation teams rely on their reputation!) and ensuring that evaluation teams fielded teams capable of both doing the research and presenting it through published works. Having this input from external evaluation teams also helped protect the integrity of the data and avoid unconscious bias from me as service commissioner – essentially co-authorship as a check and balance to ensure that I did not mis-sell the work in the publications. This experience proved invaluable in developing my approach to the publication of project outcomes. Since then, I have always taken an evidence-based approach – an 'unvarnished' presentation of data and conclusions directly linked to the evidence. I find this approach crucial to influence the perception of the target audience and underpin the change process upon which this PhD is based.

Warwick Medical School were commissioned to evaluate the two-year Fellowship pilot and co-authored the publication with me. With Aston University evaluating the Pharmacy programme at the same time, I had the opportunity to experience the very different approaches adopted by medical and allied-health-professional training institutions in evaluating and presenting NHS service projects. On reflection, this exposure helped me understand the very different perceptions and attitudes of clinical professions and the need to tailor my language based on the group in question.

3. Integrating Health and Care Systems in the NHS

Title	Journal	What was it about?	What did it show?	My contribution to the publication?
Integrating Health and Care in the 21st Century Workforce Aiello M, Mellor J	**Journal of Integrated Care** DOI Published: April 2019	The NHS needs to adapt as never before to maintain and plan for an integrated and sustainable multi-professional workforce, spanning all health and care sectors. This cannot happen without system leaders enabling system-wide collaboration and support for multi-professional learning and role development. The case in this paper evidence the ability of NHS systems to adopt integrated workforce change.	The case studies were chosen to demonstrate how system-wide change is possible, but requires a partnership approach to innovation, strategic workforce planning and commissioner support for new models of care. A particular focus is the system-wide shift toward rotational ways of working, crossing multiple health and care sectors. The authors presented this as representative of the need to develop integrated, multi-professional workforce commissioning models.	➢ Primary / corresponding author. ➢ Co-designed, developed and led programmes of work which informed the paper.

In 2017 and with my PhD firmly underway, I was developing my thinking around my processual framework and underpinning methodology. As I hope the reader will by now be able to see, I have a genuine passion for innovation and outside-of-the-box thinking and was keen to demonstrate that I am not alone in this thinking in the NHS.

HEE has traditionally held a strong track record for supporting and leading innovation, with the aim of engineering system-wide workforce transformation. Unfortunately, HEE (like many NHS organisations) does not have a strong track record for communicating or promoting its capability and achievements. Having presented a programme update to my regional (at the time) director, I made this point and was challenged to demonstrate how an article might demonstrate HEE as a supporter of innovation, in an objective way. I designed and wrote *Integrating Health and Care in the 21st Century Workforce* with one of my regional peers – an HEE Transformation Manager based in the West Midlands. Within the paper, we contextualised the issues facing NHS systems in both developing and adopting transformation projects, provided examples of current initiatives and discussed how system transformation might be enabled in the NHS of the future.

The paper concluded that there is no shortage of evidence to demonstrate that the NHS is more than capable of generating integrated workforce models at scale. However, it falls to NHS system leaders to recognise that systems can and do deliver integrated workforce transformation which requires high level support through a shared vision, partnership working and the breakdown of silo approaches. This has been my philosophy and guiding principle throughout my NHS career. I was privileged to have this opportunity to share my views, which formed a part of the conclusion for this thesis.

4. The Physician Associate (PA) Workforce Development Programme

A 'new model of care' transformation programme (NHSE, 2016) which I led from its conceptual state in 2012 to its current state as an expanding national, commissioned programme.

Title	Journal	What was it about?	What did it show?	My contribution to the publication?
Development and Progress of the United Kingdom Physician Associate Profession Aiello M, Roberts K	**Journal of the American Association of Physician Assistants** Link Published: March 2017	This report describes the development of the PA profession in the UK from 2002, with workforce and training projections through to 2020. The authors describe UK workforce governance, training, and the path to regulation at that time (2016-17).	With rising demands on the healthcare workforce, the PA profession is predicted to positively influence clinical workforce challenges across the UK healthcare economy.	➢ Primary / corresponding author. ➢ Led the Health Education England programme of work which generated the paper – generated original research relating to training numbers (developed and led an annual national course provider survey from 2016-present) for inclusion in the paper.

The Physician Associate (PA) programme was initiated in 2014 by Health Education England. The PA role had been introduced to the UK (initially a US Physician Assistant role) as early as 2003, but the first major push to establish the profession was initiated by Health Education England with approval from the Department of Health from 2013. At that time, my line manager (Postgraduate Dean, West Midlands) was given the lead role in exploring the potential for and then developing the PA workforce nationally.

The programme was left to my team to deliver. In the years since, I have led the PA workforce programme as the profession has grown from c.80 to c.4,000 PAs across 35 healthcare systems in the UK. Training programmes have grown from 3 in 2014 to 35 in 2020, currently training over 1,600 student PAs per year.

My role involved developing the PA education and training pathway in partnership with education providers, supporting the establishment of the Faculty of PAs at the Royal College of Physicians and developing workforce transformation projects with a focus on recruitment and retention across systems. In 2015, I wrote the long-term national investment strategy for PA education and supported the Canadian and Irish governments in developing their national commissioning structures. At that time, I contributed evidence to inform the Five Year Forward View recommendation to recruit PAs into primary care.
In 2017, I added content to the Securing the Future of ED Workforce in England strategy, convincing the Royal College of Emergency Medicine to formally support the PA workforce in Emergency Department (ED) teams for the first time (approx. 30% of the PA workforce are employed in EDs).

Following the ‘influence perceptions’ principles established in my other work and recognising a lack of publications around the development of the PA workforce in the UK, I elected to write an article which introduced the public and stakeholder groups to the PA workforce. The article was written in a narrative style to meet that purpose, providing a history of the profession, an overview of what the role is (scope, potential, deployment models) and research (such as it was) to assure readers as to the safety and value of the PA role.

Contribution to the published works: Summary

The publications attached to each work-stream demonstrate evidence of impact and return on (public) investment. By publishing the outputs from my projects, I was able to add peer review to the academic and scientific rigour which the evaluations provided. By aiming for peer-reviewed publications which were relevant to and trusted by my stakeholder and user groups, I added an additional level of assurance during the project transition (concept to core business) phase; in particular where stakeholder groups included research teams and academic institutions. Through publication I was able to future-proof the work, contributing to the public body of knowledge.

The publications attached to each of my work-streams demonstrate evidence of service impact and return on (public) investment. By publishing the outputs from my projects, I was able to add peer review to the academic and scientific rigour which the evaluations provided. By aiming for peer-reviewed publications which were relevant to and trusted by my stakeholder and user groups, I added an additional level of assurance during the project transition (concept to core business) phase; in particular where stakeholder groups included research teams and academic institutions. Through publication I was able to future-proof the work, contributing to the public body of knowledge. My access through my role to policy, workforce expertise and internal documents enabled me to add value, content and direction to the published works.

My published works were initially intended to support the delivery of individual project outputs. However, as my role developed, my involvement in the published works actually influenced my thinking around the need to understand and respond to the perception of key audiences.

This in turn helped me realise that the NHS is made of and reliant upon the will of people and the consequent need to influence (not change) the perceptions of those people to drive workforce transformation.

On reflection, my involvement in these published works drew me toward the PhD as a means to understand, analyse and define the philosophical underpinning for my change management process. I realise now that this is truly a PhD which has been inspired and influenced by my published works.

Future Direction

Since 2018, I have used my framework to enable rapid delivery of a range of NHS workforce programmes including:

- ✓ 2017-21: A UK-first pilot, exploring the service benefit of a new *Clinical Educator* role in Emergency Departments (CEED).
- ✓ 2019 to present: Supporting integrated multi-professional workforce transformation through pilot projects to test new Physician Associate and Paramedic Ambassador roles.
- ✓ 2020: Considering strategies to improve bed management and patient flow in Acute Hospitals – focussing on exploration of training and development needs for 'Site Management' roles.
- ✓ 2018-20: Delivery of a workforce programme focussing on recruitment and retention of SAS doctors in emergency medicine.
- ✓ 2018-20: Pilot to develop and then integrate a new rotational workforce model for Advanced Paramedics.
- ✓ 2018-22: A world-first programme to develop, test, evidence and deliver targeted leadership training for all Emergency Medicine Trainee doctors in England (*EMLeaders*).
- ✓ 2020: A lead role in re-writing HEE's Urgent and Emergency Care workforce strategy from July 2020, in partnership with NHS England and to support the 2020 re-design of UEC and Integrated Urgent Care services (including the new NHS 111 First and National Clinical Assessment Service (NCAS) programmes).

At the time of writing, the framework and my process-driven approach are assisting my team in responding to the COVID-19 crisis through a pause-restart strategy in the existing portfolio and the development of new work to capture information to mitigate any future spikes in patient need. I am using the framework to assist in responding to identified workforce need in the development of future work in the 2020-21 NHS Financial year (April 1st 2020 – March 31st 2021). Appendix F shows the direction of my programme work-streams in summary. Key projects include a new, UK-first national programme focussing on capacity and access to multi-professional clinical supervision in Integrated Care Systems and Primary Care Networks. Also, new work-streams focussing on long-term wellbeing of multi-professional teams following the COVID-19 crisis.

In May 2020, I was asked to lead HEE's national Pharmacy programme, with a focus on developing the UK's first Pharmacist Foundation Programme and a full reform of the initial education and training (IET) pathway as part of a UK-wide strategy.

With an interim foundation programme and development of an IET reform plan needing to be underway by September 2020, my framework approach has already proven invaluable to me in rapidly implementing the development process and managing complex stakeholder engagement of this exceptionally high profile, high pressure project. This may be the most challenging project of my career to date but will have far reaching benefit for the pharmacy profession, should it come to pass. At the time of writing, the interim programme went live on time (from August 2020) and will provide both the evidence base for the full foundation programme from 2021 and a means to develop provisionally registered pharmacists whose pre-registration training has been impacted by the COVID-19 crisis.

The insights gained during this PhD have enabled me to provide context and narrative to the project team, to help them link the project management process to those human factors which will enable this work to succeed. I will continue to develop my portfolio, using the lessons learned during my PhD to evolve and grow my professional practice. I hope that this will give me the means to return some value to a National Health Service which has given me the opportunity and support to succeed.

Appendices

Appendix A: *Health Education England*

Health Education England (HEE) is an executive non-departmental public body of the Department of Health. HEE's function is to provide national leadership and coordination for the education and training within the health and public health workforce within England. It has been operational since June 2012.

HEE was one of the new bodies set out in the NHS reforms of April 2012. Originally established as a Special Health Authority on 28 June 2012, it became a non-departmental public body (NDPB) on 1 April 2015 under the provisions of the Care Act 2014.

HEE's third national workforce plan, published in December 2015, provides for an increase of nearly 15% in nurses and doctors trained by 2020. This is planned to lead to an increase of 21,133 qualified adult nurses, 6039 hospital consultants and 5381 General Practitioners after allowing for retirement and staff turnover.

Dr Navina Evans, Chief Executive of East London NHS Foundation Trust, a psychiatrist, was appointed Chief Executive in March 2020, succeeding Prof Ian Cumming.

Key functions of HEE include:

- Providing leadership for the education and training of the clinical workforce in England.
- Ensuring that the NHS workforce has the right skills, behaviours and training, and is available in the right numbers, to support the delivery of excellent healthcare and drive improvements
- Supporting healthcare providers and clinicians to take greater responsibility for planning and commissioning education and training through the development of Local Education and Training Boards (LETBs), which are statutory committees of HEE
- Ensuring that the shape and skills of the health and public health workforce evolve with demographic and technological change
- In May 2017 HEE was authorised to an employer of junior doctors.

Appendix B: EM Taskforce Recommendations (HEE, 2013):

- An increase in Emergency Medicine Consultant numbers to ensure a consultant presence for 16 hours a day, 7 days/week in all Emergency Departments and 24 hours a day, 7 days/week in larger Emergency Departments or Major Trauma Centres.
- Work with the Centre for Workforce Intelligence to explore workforce modelling in EM.
- EM trainee numbers should be carefully calibrated to support continued Consultant expansion.
- Early exposure to the EM component within ACCS core training to improve early experience and improve MCEM pass rates.
- Develop alternative routes into EM training for trainees currently in other specialty programmes.
- Explore the recognition of transferable competences of trainees currently in other specialities to increase the pool of trainees eligible to apply for EM training at a level higher than CT1.

- GPs could be invited to consider the following options:
  - Improving access – 24 hours, evenings, and weekends,
  - Primary care expertise in a facility co-located to the ED,
  - GPs working with ED team to facilitate discharge,
  - GPs to develop Emergency care skills as a special interest.

- Support Associate Specialist and Staff Grade Doctors (Specialty Doctors) in their roles to ensure retention and increase work satisfaction.
- Expand training of Clinical Nurse Specialists and Physician Associates and define their roles.
- To ensure consistency, development of the roles of each of these groups should be underpinned by:
  - A National Curriculum for ED-specific competencies,
  - National Standards for skills and competencies,
  - National Assessment framework.

Key Issues:

- Rising demand for EM services.
- 2013 recruitment round – Fill rate at ST4 was 39%.
- Fill rate in ST3 Acute Medicine and Geriatrics c.50% - also critical front door team members.
- ANP and PA options will each take >2 years before staff are available.
- Military interest in training some staff to Paramedic standards.
- Some success in overseas recruitment - especially from India.
- DEQ workshop provided a range of options that might be adopted across HEE LETBs in order to support short-term delivery.

Appendix C: Clinically Enhanced Pharmacist Independent Prescribing

Learner Application: Clinically Enhanced Pharmacist Independent Prescribing [CEPIP]:

1) General

- The course will be 6 months duration and open to Pharmacists practising in the West Midlands in primary, community and secondary care. The course combines class and workplace-based learning.
- The course will award a (Level 7) Postgraduate Certificate (60 credits), reflecting an extended curriculum (see below) and providing a suitable background to support further studies for higher awards.
- Successful completion of the IP programme will allow pharmacists to apply to the GPhC for annotation as an Independent prescriber.
- The course will develop in Pharmacists an enhanced practical experience in diagnostics and health assessment; aligned to the Advanced Clinical Practice pathway and beyond the curriculum set by GPhC for the existing IP module.
- The course content and credit may be suitable for RPL (previously APL) onto existing (West Midlands) Advanced Clinical Practice training courses.

NOTE: The course requires Pharmacists to complete a minimum of 90 hours of clinical teaching and supervised clinical practice, with a nominated **Designated Medical Practitioner** (DMP). This is to meet GPhC requirements and any additional hours to achieve competence in basic health assessment. Sourcing a DMP will be the pharmacists/employer's responsibility; to be demonstrated prior to commencement / release of funding. Guidance for DMPs accompanies this letter.

2) Enhanced Clinical Skills

- Unique to this course, there will be demonstrable practical experience in diagnostics and health assessment (with the focus moving more toward diagnostics than minors training, but still demonstrating "hands-on" rather than didactic training).
- The course will provide health assessment training of a manner which allows graduates to confidently and competently perform general physical examination and health assessment, relevant to their area of practice. Pharmacists will be supported in achieving this through a blended method which will include practical experience, underpinned by theoretical knowledge.
- The health assessment content will include (but not necessarily be limited to):
  - generic "head-to-toe" physical examination
  - emphasis on "red flags"
  - history taking
  - consultation skills

3) Funding

Full tuition fee support will be offered to each pharmacist undertaking the course, based upon confirmation by the course provider of full enrolment and attendance upon that course.

2017 Clinically Enhanced Independent Prescribing for Pharmacists (*CEPIP*): Candidate Nomination Form

Employing Organisation Name:

Address:

Nominees Line Manager (person authorising release to training):
Name:
Role:
Contact Email:

Pharmacist Nominations:

	NAME	Contact Email Address	Current Role	Preferred Course Provider
1				
2				
3				
4				
5				
6				

If we are unable to accommodate you on your first-choice course, could you please choose from the four remaining, in order of preference:

Please confirm your nominees' Designated Medical Practitioner (DMP):

Name/s:
Role/s:

Organisation Address:

Contact Email Address:

(Confirmation of your DMP is a requirement of entry onto the programme)

Workforce Development

Please provide a summary description of what you intend to do with the training you will receive and how your enhanced skills will be deployed within your organisation (200 words max).

Evaluation:

There is an expectation that all organisations involved in this programme will cooperate with HEE-WM evaluation processes where practicable and in line with local data protection and governance rules. Please confirm the willingness of your organisation to cooperate with the programme evaluation team as regards release of information / data relating to deployment of the named candidate/s within your workforce in advance of and at 1, 6 and 12 month intervals following course completion:

Yes / No

If no, please give reasons why:

TO NOTE:

- Candidates should be aware that the programme on offer is **not** a “standard” IP course, but one that blends the GPhC accredited Independent Prescriber course with skills training in Clinical Health Assessment. The health assessment and IP training components are not severable, and 100% attendance is expected at all sessions.
- Curricula for each of the course providers will be supplied on request.
- Candidates will be expected to fully brief their DMP and share this document and the accompanying DMP guidance with them, before applying.
- Incomplete or handwritten forms will be returned to the nominee.

Declaration

I confirm that I have read and understood this document and that all detail is correct, to the best of my knowledge.

Employers Signature: …………………………………………………………….

Print Name: ……………………………………………………………………….

Role: …………………………………………………………………………………

Date: …………………………………………………………………………………

Appendix D: Example HEE Communication Checklist: *PIED* (January 2020)

Who is the project lead/manager has it had exec sign off?

Project lead: Matt Aiello
Exec sign-off name and date:

Background

Health Education England's Pharmacist ACP development programme was delivered between 2014 and 2019. The programme investigated and then tested the capability and scope of pharmacists working within multi-professional urgent and emergency care teams; particularly the potential scope of pharmacist roles - both traditional medicines focussed and advanced clinical practice.

The programme portfolio comprised shop-floor research, training pathway development, training needs analysis, competency mapping, evaluation of training progress and delivery of workforce development projects. The underpinning Pharmacists in Emergency Departments (PIED) study was conducted across 49 Acute Hospital Trust EDs in England between 2014 and 2018. Data was captured and analysed by a multi-professional team including pharmacists, Emergency Medicine Consultant Doctors and Nurses. Primary and Secondary categorisation of PIED data added rigour to the findings and the study data set of just over 18,000 patients remains the largest known AHP workforce development study in the world.

Programme evidence identified and tested the potential for pharmacists to undertake patient management as Advanced Clinical Practitioners (ACP), with training aligned to the HEE ACP Framework.

Evidence demonstrated that the HEE national ACP framework is appropriate to safely underpin the development of ACP pharmacists across healthcare systems.

The paper that we wish to publicise summarises the programme journey and outcomes, methodology of the projects, conclusions and recommendations. The paper concludes with recommendations for pharmacist development in multi-professional clinical teams.

Through a demonstration of our evidence base, we challenge NHS Service Providers and Commissioners to explicitly support the development of Advanced Clinical Practice pharmacists as a key part of multi-professional Integrated Care Systems.

What are the key messages that you want to get across?

- To present a summary of the context, evidence, studies and outcomes resulting from the 2014-19 Pharmacists in Emergency Department [PIED] and Pharmacist ACP development programme.
- To present public recommendations relating to the development of Advanced Clinical Practitioner Pharmacists (ACPp) in primary, community and secondary urgent and emergency care

Who are your key stakeholders/audience?

- Primary, community and secondary healthcare – NHS Service Providers and Pharmacist employers;
- Primary Care Networks and Integrated Care Systems
- Commissioning networks
- Pharmacist professional bodies and regulator (including GPhC and RPS)

- Medical Royal Colleges
- **Public** – we want to follow up on our 2015 Guardian article in addition to our plans for peer-reviewed journal publication – we require comms team support with the publication of a press statement in national media.
- Education providers - HEIs
- International healthcare providers (the study has been presented on every continent on earth! With positive responses and request for more information)

What is the headline in your opinion?

Pharmacists trained as Advanced Clinical Practitioners have potential to support the clinical management of patients as part of integrated, multi-professional teams across healthcare systems.

What are the risks that could lead to negative coverage (a Daily Mail type story)?

Evidence from the PIED programme demonstrates the need for a defined training pathway to ensure standards of governance and quality assurance for pharmacists accessing an advanced training pathway. We need to be extremely clear on the evidence base here to avoid challenge related to changing pharmacists into nurses / docs or training docs on the cheap… or risk-based challenges associated with training pharmacists to 'put hands on patients…' all challenges which we have faced and confidently responded to using our evidence base.

How does this work meet HEE priorities?

A recommendation of Securing the future workforce in Emergency Departments in England (2017), multi-professional workforce development should include both 'traditional' and advanced clinical roles for pharmacists.

What is the impact on patients?

Pharmacists trained as Advanced Clinical Practitioners have the potential to support the clinical management of patients attending Emergency Departments and wider urgent care settings.

Is funding involved?

No – The project attracted HEE funding but is now closed, with no further funding required.

We do not see media coverage as requiring additional funding.

Appendix E: Example Communication Plan: *"A Day in The Life of a Physician Associate" Documentary* (December 2014)

1. Aim

The wider project aim was to create an educational learning resource specifically for physician associates, stakeholders and course providers (current and potential). The resource took the form of an audio-visual "documentary" - a product which intended to be accessible, rich with relevant information and authentic to the profession, by using industry expert insight and perspectives.

i. Objectives:

The documentary aims to assist:

- Existing course Providers in promoting PA training courses.
- Potential course providers in educating commissioners as to the value of delivering a course.
- Secondary care employers in better understanding the scope, potential and boundaries of the role.

2. Communications Objectives

- To effectively position and promote the resultant physician associates training film.
- To specifically target only the intended audiences – this product is not intended as a wider, public-facing promotional video.
- Through identification of recipients, to achieve effective national coverage – demonstrable over the first six-month period (to justify cost).
- Create and support a suitable and accessible destination for the film.
- Ensure that the specified target audiences are communicated with and made aware of the film and its purpose.
- Promote the film and its benefits across wider HEE channels.
- To use the HEE National PA Development Group as the source for capturing and evaluating feedback from the target audience.

3. Project Background

- The Physician Associate role is an emerging UK profession, which is poorly understood by regional and national employers and relatively unknown to the public.
- Recent negative publicity within the national tabloid media prompted a backlash against the role, which the industry (PAs, their employers, course providers and stakeholders) felt to be poorly reasoned and inaccurate.
- HEWM is working collaboratively with regional and course providers, with an ambition to provide an "industrialised" national training and recruitment package throughout 2014-15.

- Without raising public and employer understanding of the role, there is a risk of poor understanding leading to a lack of uptake by commissioners and employers, as well as a negative spin by the press leading to public misconceptions.
- The documentary concept was realised as part of a targeted marketing campaign (including digital media, print publications, regional and national conferences and employer liaison), which seeks to pre-empt such issues.
- The aim of this project is to provide a comprehensive, accessible and informative insight into the world of the PA, in a medium which is versatile enough to be used in a variety of marketing, educational and recruitment-support strategies – both by HEWM / HEE, employers and HEI course teams.
- Circulation of the documentary will not be geographically limited and will be made available – both through targeted marketing and ad hoc responses to requests - at a national level.

3.1 Audience Insight & Research

See above re research and insight suggestion

4. Strategy

The strategy will follow the Government campaign framework model of:

- Objectives (as set out above – planned and measurable)
- Audience insight and research
- Strategy
- Implementation/tactics
- Evaluation/impact.

Our strategy is to reinforce the importance and purpose of the film and ensure it is effectively promoted to our target audience to deliver the intended outputs and outcomes.

5. Tactics

See 12. Timeline and Action Plan

6. Target User Groups:

- The public,
- Physician Associates (current),
- Physician Associates (trainees),
- Physician Associate (future/potential),
- Employers,
- Physician Associate line managers,
- Higher Education Institutions (HEIs),
- Key Stakeholders: UKAPA, UKIUBPAE, RCP.

Specifically, the film needs to be seen by those in managerial positions as they will take the decision to employ more of them. It should also be widely seen by stakeholders and potential users including:

- **HEIs – Current and Potential Course Providers**

The documentary was intended primarily to assist current course providers in supporting existing courses, as well as increasing understanding of potential course providers.
The documentary will be sent as a downloadable link to all interested HEIs, to use at their discretion. Users will be given the option of receiving the documentary on a variety of media (e.g. DVD, digital download, memory stick).

- **Health Education England:**

HEE are currently involved in negotiations and planning for future commissioning, so this documentary may assist their understanding of the role. The documentary should be presented through the medium of an established group – for example the HEE PA Development Group.

- **Boards and directors of LETBs**

The documentary could be emailed to them via a personal message from Prof Liz Hughes so that it becomes something they are encouraged to take the time to watch.

- **Boards and directors of LETCs**

As well as the documentary being distributed through LETB leads, the LETCs should be included in circulations from the outset. The LETBs can provide the overall strategy for an area but the LETCs address local needs so will be able to use the documentary for targeted awareness-raising.

- **Trust Workforce Leads and HR Directors**

Clinical Supervisors, workforce leads, medical directors and HR Directors who are involved in recruitment, CPD and training, as well as those practising alongside PAs (E.g. Advanced Nurse Practitioners, EM Consultants, Junior Doctors, Middle Grades, Pharmacists, Physiotherapists etc). The documentary may be used to inform, educate and dispel myths / misconceptions around the role.

- **National Organisations**

Professional bodies with an interest in the PA role, including the Royal College of Physicians, UK Association of PAs, UKIUBPAE and GMC could be contacted with the documentary and asked to distribute amongst its members. The British Medical Association is looking for the role of Physician Associates to be properly defined, so may take some value from an easily accessible, educational resource such as this.

7. Channels

i. **Websites:**

- HEWM EM Taskforce Webspace
- HEE Website pending national comms approval

ii. **Publications**

- HEE Life
- HEE Matters

iii. **Social Media**

- **Twitter** @HealthEd_WMids and HEE main accounts
- **LinkedIn** group to be created and community built

iv. **Targeted letters and emails** (e.g. from Prof Liz Hughes to LETB Boards)

v. **Wider NHS publications and channels online** – the documentary has been created so as to be intentionally severable into clip-trails, segments and podcast-style "chapters," without losing its production-standard quality

vi. **Online medical journals**

vii. **Events** including (but not necessarily limited to):

- Two planned PA conferences in 2015 (Worcester and Birmingham events – run collaboratively between HEE and UoB / Worcester University – dates TBC)
- Other opportunities to be considered e.g. Primm conference, 23 Jan 2015 http://www.primm.eu.com/ - focussing on how medicines can be optimised from different medical groups. This is the only such conference where PAs are on the agenda.

8. Key Messages

This film is an educational learning resource specifically for physician associates and the education community to showcase their role and benefits to the NHS and patients. The film is accessible, rich with relevant information and authentic to the profession through the inclusion of industry experts and their insight and perspectives. The launch of the documentary will be promoted to the identified target audiences directly via mailshots. This film is intended to encourage trusts, CCGs and other employers to explore the benefits of Pas within their structures and of the benefits they can deliver for the NHS and patients.

9. Timescales

- **August – December 2014:** Planning, shooting, Pre and Post-Production
- **October 2nd 2014:** live test audience viewing: "PAs in the Workplace" Conference, Birmingham
- **w/c December 15th**: 2nd live test audience viewing: HEE PA Development Group only
- **w/c December 29th**: National launch

10. Review and Evaluation

Through test audience viewing and consequent feedback.

11. Budget

Depending on requests, may be necessary to produce DVD or memory-stick versions of the documentary – Some minor cost implication anticipated to local budget.

12. Action Plan

What	When	Who	Status
Web	When will it go live?	What is the link to the film?	Go live date TBC
Media	Industry media promotion and press release? To coincide with go live date	Matt to brief HEE media team using this comms plan (Richard Green/Vicki Diaz)	TBC
Photography	At launch - Use stills from film to support any promotional collateral and also for use in social media activity	Matt, Darren and Luke	TBC
Publications Internal and external to be considered	Will there be any supporting print or collateral to promote the film? Liaise with HEE comms on inclusion in HEE Matters and HEE Life HEE Life perhaps via an interview with Liz Hughes and Matt around the importance of the film and its planned outcomes	Matt Darren and Luke to support with any requirements	TBC
Social Media Targeted at specified audiences	Agree Twitter hashtag e.g. **#PAfilmHEE** or similar 'clean' hashtag Create and use targeted LinkedIn group to showcase the film and to encourage interaction and two-way dialogue	Agree hashtag and approach Darren and Luke to use @HealthEd_WMids Twitter account - explore LinkedIn (comms support if needed)	Go live date TBC
Targeted emails and letters **e.g. email from Prof Liz Hughes**	Email from Liz Hughes to: HEI Leads Employers LETB Leads UKAPA / UKIUBPAE HEE PA Development Group	Matt to draft email – endorsement from Liz – Matt / Sabrina to send out	To be sent as soon as comms plan approved – before 22nd

to LETB Board members	Military leads RCP GMC DH Introduces the documentary with a link to it and option for securing other formats (e.g. DVD / memory stick / digital download)		December in any event.
Events **See 7. Channels**	X 2 2015 PA Conferences (Worcester University and Birmingham University) - To air the documentary during breaks		Dates and milestones to be added here

13. Further information required

Once the documentary has launched, confirmation from users whether other digital media will be required – impact on costs will be determined at this stage.

14. Contact details

Project Director: Prof Elizabeth Hughes, Director of Education and Quality (London and Southeast) and West Midlands Post-Graduate Dean.
Project lead: Matt Aiello, Project Manager, Health Education West Midlands

15. Circulation to Date

For ease of access, a weblink was created, with an introductory page on the Health Education West Midlands website: http://wm.hee.nhs.uk/our-work/physician-associate/. A number of DVDs were produced and made available for a limited period, on request. Business cards bearing a "QR" code, linking to the above weblink, were produced for the 18th February live viewing event at George Eliot hospital Trust.
The following list details circulation to date (last updated 9/2/15):

Circulated To	Format	Circulation date (W/C)
HEE EM LETB Leads	Weblink	2/2/15
UKIUBPAE	Weblink	2/2/15
Individual National Course Providers (all)	Weblink	2/2/15
UKAPA	Weblink	2/2/15
US Contacts (DK)	Weblink	2/2/15
HEE PA Development Sub-Group	Weblink	2/2/15
RCP	Weblink	2/2/15

16. Testimonials (last updated 9/2/15)

1. Great documentary about PAs at the George Elliot Hospital from @HealthEd_WMids & @NHS_HealthEdEng http://bit.ly/1ApBM6G #ProudtobeaPA

1. *Dear Matt, I have just watched the video. CONGRATULATIONS!! That is a massive achievement, and you've done a wonderful job on producing it. It is very exciting to see how the West Midlands (and HEWM in particular) has so warmly embraced the new profession. Thank you so much for all you have done for us.*

2. *Really enjoyed watching it and it came across well…well done to those involved – a good project*

3. *Thanks for what you have done it will be a great shop window for PA`s up here in Norfolk*

4. *This is amazing. Thank you so much!*

Appendix F: *PIED* and *CEPIP* Case Studies

This section contains case studies chosen to reflect the breadth of pharmacist workforce models across Urgent and Emergency Care sectors. The paper is intended to be an objective, "snapshot" of case studies received from providers, where pharmacists undertaking CEPIP and Advanced Practice training have been deployed and evidence around workforce impact obtained. Where "NHSE Bid Sites" is referenced, this refers to those organisations who have recruited pharmacists to the NHSE / HEE Clinical Pharmacists in General Practice programme (pilot and Wave 1). Case studies are presented unabridged and verbatim. The following case studies were presented with the permission of those listed as contributors at the end of this section.

1. Primary Care and Community-Based Pharmacists

A. Senior Clinical Pharmacist – Worcester City Centre

I work as a Senior Pharmacist under the NHS England Pilot 'Clinical Pharmacist in General Practice.' I qualified as a Non-Medical Independent Prescriber in September 2015 after the completion of a CEPIP Health Education West Midland programme at Worcester University. I registered as an allied Healthcare Prescribing Professional with our Local CCG – some 3 months later I was writing prescriptions. The main use of my prescribing qualification, as it stands today, is to assist the GPs manage stable patients with a history of hypertension. I feel the CEPIP programme allowed me to develop clinical assessment skills in vital signs and cardiovascular clinical assessment that allows me to competently and confidently manage this cohort of patients. I run a weekly hypertension clinic and a weekly medication review clinic where I proactively review complex medication regimens or accept referral from Peers within the practice. On average I write 10 prescriptions each week. I feel the CEPIP programme developed a holistic general practice role and feel future opportunities now exist for me to become more involved in clinical and therapeutic education and training and to extend my current scope of practice to include care of patients with diabetes. I also identified a local need to optimise care of patients with complex pain management regimens and feel that I could be part of comprehensive and extensive contraception and hormonal replacement therapy treatment and reviews.

B. Junior clinical Pharmacist – Worcester City Centre.

I qualified as a non-medical Pharmacist independent prescriber in August 2016. I completed my CEPIP programme with Health Education West Midlands at Wolverhampton University. During my studies I was eagerly seeking employment within General Practice. I now work in a practice 2 days a week with a practice list size of approx. 5000 patients. Some 4 weeks after qualification and annotation to GPHC register I wrote my first prescription. Today I work supporting the practice undertaking hypertension clinics and planned medication review clinics. I am currently extending my competence via CPD to include supporting substance misuse patients. I am approx. 50% patient facing but feel this could be significantly increased.

I would consider myself fit and capable to assist in patient triage and my confidence was surely attained from the clinical health assessment skills gained at university. I am able to recognise and further refer symptoms of concern 'red flagged'. This is certainly a skill I feel that will be imminently used as the pressure on obtaining same day GP appointments builds.

I intend to now broaden my area of clinical competence and expertise and now am actively seeking opportunities to further extend my knowledge and health assessment base. I intend to start my MSC in advanced clinical practice in January 2017.

C. Senior Pharmacist – South Worcestershire NHSE Bid Site pharmacist.

I undertook my non-medical independent prescriber's course in 2013. This was a standalone module and not part of the CEPIP programme. It was after my appointment (Summer 2016) as part of an NHS England Pilot pharmacist that I first utilised my prescribing qualification. I have attended self-financed opportunistic courses to obtain health assessment skills and still am perusing suitable courses relevant to my practice to build knowledge, skill set and confidence. I currently undertake patient facing reviews for hypertension, triage and assessment of acute illness, as well as routine and urgent response to medicine related queries and medicine optimisation. I have helped to improve patient access to primary care in a very stretched practice. I hope to utilise my skills and qualification further when GP recruitment is resolved and a support structure is in place to support and further integrate the role. I personally feel it may be useful to collate what each pharmacist is achieving in their respective practices to help map peer support. I am a bit overwhelmed with trying to do a lot in a small practice, with a big deficit of GPs.

D. Senior Pharmacist – South Worcestershire NHSE Bid Site pharmacist.

I qualified as Non-Medical IP in Sept 2015 after completing the 2nd pilot of HEWM funded CEPIP at Worcester University. I have since learnt how lucky and appreciative I was to be supported in a combined health assessment learning alongside my IP. It was 7 months before I was employed and confident in a role post-qualification, before I wrote my first prescription. Since this date my integration and opportunity to influence prescribing locally has gone from strength to strength.

I utilise my qualification by completing planned and identified reviews with patients with various long term conditions including hypertension, depression/anxiety, asthma, COPD etc. I have had to broaden my areas of clinical competence post qualification to meet general practice and patient demand. I also review acute episodes of illness or flare-up of chronic conditions originally diagnosed by GP e.g. dry skin, respiratory infection, pain. I assist in the completion of medication reviews for oral contraceptives, rheumatoid arthritis. I assist with NHS Health Checks, Care Home QoF management, vaccinations and anticoagulation. My appointments can both pre bookable and book-on-the-day; to ensure good patient access. The majority of my appointments are open for admin/nurse/GPs to book into, but I also have scheduled vaccination clinics. Patients can book telephone consultation/ face to face appointment or a home visit. On average I will see 72 patients in a typical week requiring and utilising my IP qualification. I feel my new skill set is fully utilised at the moment but given possible changes to services and care models, I acknowledge I need be adaptable to those future specifications.

I would like to suggest that my qualification could have been enhanced if Anticoagulation could have been an optional add-on; more examples of how pharmacists conduct themselves as prescribers would have been a useful experience. There is an identifiable difference between consultation style and skill base amongst the various NMIPs and GPs.

E. NHSE Senior Pharmacist

I undertook my Non-Medical Prescribing Qualification at Worcester University in September 2015. I completed my area of clinical expertise in the general practice of the frail and elderly. I was eligible for HEWM funding and undertook an initial pilot for the CEPIP. The course was undertaken whilst I transitioned into a new intermediate care pharmacist role. Some 12 months later I can truly relate to how important, integral and essential the health assessment element of the training was. I can really appreciate that my role today has been scoped by the confidence and skills I was able to bring to practice. I currently support the transfer of care for medicine accuracy and reconciliation within care home settings and undertake proactive medication reviews to optimise care and for consideration of de-prescribing. I have also been working in intermediate care settings to support GP working sessions especially during the summer months when GP availability was challenged. During this time I was able to undertake acute triaging and routine ward round and proactive care.

Since my qualification I have progressed to MSC in Advanced Clinical Practice and have a career aspiration to continue to work outside the traditional remit of a pharmacist by bringing enhanced clinical skills of an allied health professional to truly complement care offered in primary care and general practice.

F. Pharmacist Prescriber – Prisons

I started off working a couple of days in the prison (HMPYOI Stoke Heath), initially to write medicines management SOP's and to help streamline processes. My work over the first few years involved making medicines administration more safe and efficient. Once this was completed, I could then take on a more clinical role. The method for ordering repeat medication often involved nurses messaging prescribers. This resulted in many nurses repeating the work of previous ones, doctors being overrun with duplicated messages and even duplicate prescriptions being produced. We created a paper-based ordering system which I took on, so that all of the ordering went to one place in healthcare and was logged and processed. In effect, I was taking on repeat prescribing requests. A lot of doctor time was taken up with minor prescriptions such as creams for eczema, athletes foot, and analgesics for headaches, colds etc. I decided to undertake the IP course in order to take over the prescribing of these items. Of course, in the community, patients would be able to go to a pharmacy and purchase these items, but in the prison setting this is not possible as any medication needs to be prescribed.

Once I completed the IP course, I have been able to take over the ordering for repeat medication for minor ailments and I also run a weekly skin clinic. This mainly involves complaints such as eczema, psoriasis, acne, fungal infections and some bacterial infections.

I see around 10 patients per week in clinic but in addition to this, I see many extra patients who attend healthcare with minor ailments. I have been able to take this workload off the doctor which has enabled him to concentrate on more complex cases and reduce the waiting time for people to see the doctor.

2. Pharmacists based in PIED-ENG Study Sites (Emergency Departments):

A. City Hospitals Sunderland (Sunderland Royal Hospital Emergency Department).

Criteria-led discharge pathway: Recently implemented in conjunction with an ED Registrar as part of their QIP project. Focussing discharge planning at point of admission for those patients with presenting complaint of 'overdose' that do not require active treatment (e.g. acetylcysteine, cardiac monitoring) who are subsequently admitted to a short-stay ward for period of observation and psychiatric assessment. This allows the practitioner responsible for the patient in ED to plan for safe discharge at the point of admission resulting in improved patient experience and flow of bed availability through a high turnover area. Also enables experienced senior nursing staff to facilitate discharge on basis of criteria being met.

ED AF Pathway: Implemented as a novel practice by an ED Consultant and supported by ED Pharmacist. Allows rapid diagnosis and treatment of AF with clear history of onset <48 hours duration and no contraindicated features (e.g. suspected sepsis, valve disease). Primarily chemical cardioversion attempted (flecainide) followed by sedation and DC shock if chemical cardioversion not successful.

Sedation and/or CV undertaken by pharmacist in conjunction with ED senior (Consultant / Registrar). Diagnosis and management of patient in the department by ED Pharmacist. Intended to be subject of Master's thesis in 2017, to be presented as novel method of delivering outcome and financial benefit (given added cost of usual route of cardioversion).

The ED Pharmacist is able to manage complex patients independently within the ED including critically unwell and assisting in ALS, RSI and administration of medication to manage high-risk conditions (e.g. naloxone, metoprolol, lorazepam, propofol, etc) supported by ED and ICCU senior staff. Working towards competencies in imaging, ECG and blood gas interpretation

The ED Pharmacist also teaches staff regularly (Junior Medical, Nurse Practitioner, Nursing Staff) on a variety of topics including appropriate analgesia, complex infusions, urgent/emergency medicines.

B. Lancashire Teaching Hospitals

There have been developments put into place to increase the pharmacy workforce available to the emergency department (ED) at the trust. This was in light of recent press publications about the strain on all EDs around the UK, bed pressures at the trust and after taking part in the national study coordinated by HEE, which focused on the role of clinical hospital pharmacists working in EDs.

There is currently a team of three independent prescribing pharmacists who work across acute medicine at the trust, with an ED commitment established as part of the role. Presently this is a bleep only service that the medical and nursing staff can use for any medicines advice or support. There is also a facility for the prescribing pharmacist team to in-reach into ED directly if needed for pharmacy support. This was put into place after the data collection phase of the national HEE study in June 2015 due to a strong working relationship being developed between pharmacy and ED.

Future plans for the pharmacy service to ED are currently being formulated. These include up skilling the independent prescribing pharmacists working in acute medicine to complete the advanced clinical skills course offered at the University of Manchester – one has successfully completed the course with two further applicants identified for future intakes. Work is also under way in a joint research project with the University of Manchester to understand medicines perceptions by all healthcare professions who manage medications as part of their job role. ED staff will be interviewed by a fourth year pharmacy student as part of their final year project on all aspects of medicines management. This will identify any areas of support and form the core component for a future pharmacy service to ED.

The core service and proposed advanced roles for the ED pharmacy workforce include:

- *Independent Prescribing Pharmacist with Advanced Clinical Skills Training*: Seeing and treating patients as part of the MDT, medicines reconciliation (including identification of medicines related admissions), prescribing duties, medicines advice/support for staff, identifying patient referrals to community pharmacy
- *Pharmacy Technician*: Completion of medicines reconciliation and ordering of patient medication where needed
- *Pharmacy Assistant*: Ordering and replenishment of ward stock, maintenance of safe storage of medicines e.g. fridge and room monitoring.

C. Norfolk and Norwich University Hospital

Following the resounding success of the Pilot study in April 2015 a business case was developed and fully funded for pharmacist and technician posts in the ED providing cover from 7:30am to 8:00pm seven days a week; beginning November 2015. Currently in the ED pharmacists are clerking drug histories and writing drug charts for the patients that are being admitted, reviewing medication (with particular concern for those patients identified through "frailty" and polypharmacy) and facilitating medication supply and counselling on discharge. The development of the role includes the training of ACP pharmacists on the acute medical unit (AMU) with the potential to expand this service to the ED in the future.

D. Chesterfield Royal Hospital

The input of a pharmacist into the Emergency Department (ED) has been greatly received by all members of staff. I am currently an independent prescriber and undertaking an Advanced Practice and Clinical Skills course at Sheffield Hallam University. The main role I currently undertake on a day to day basis is completion of medicines reconciliation for patients whom are more than likely going to be admitted and then ultimately prescribing their regular medications (if appropriate) onto their inpatient chart. This results in a full and concise medication history present at the point of medical clerking and results in a reduction in drug omissions and missed doses especially of those critical medications. When patients are seen in ED and then moved round to the admissions ward it can quite often be several hours before these patients are clerked and ultimately have their regular medications prescribed

E. Dartford and Gravesham NHS Trust

In July 2016 a full-time role in ED at a 500 bed DGH. Initially focussed attention on Medicines Reconciliation in the Resus Area. However, after shadowing the ED Pharmacist from Blackburn, it was decided to move away from the traditional Pharmacist role and work towards managing patients independently.

Successes:

- Relationship building and becoming a member of the team
- Stocklists for A&E Minors, Majors, Resus, Paeds and TTO packs reviewed
- Working with the Lean Team-merging of MSS and A&E majors stock to reduce duplication and cost and to maximise available storage space.
- Attended Return to Prescribing Course for Pharmacists
- Accepted onto Advanced Clinical Skills (ACS) Course for Emergency Department Pharmacists to start in Feb 2017. This will allow me to network with Pharmacists in similar roles.
- Attendance at junior doctors training session
- Taking medical history from patients under supervision
- Shadowing of multidisciplinary team carrying out patient assessment
- Moving and Handling of Patients Training attended

Retardants:

- Start date of Advanced Clinical Skills course was delayed from Sept 2016 to Feb 2017
- Governance -establishing a cohort of patients that can be safely managed.
- Confidence in my own ability
- To move from observing others (knowing how) to towards managing patients independently.

Questions still to be answered:

- Is the role still best placed in Minors or Majors?
- Should a Pharmacist learn cannulation and phlebotomy skills?
- Is it appropriate for a Pharmacist to administer medicines in ED?

F. Worcester Acute Hospitals NHS Trust

Worcester Acute Hospitals NHS Trust is unique in that it is the only (known) UK ED which operates a pharmacist practitioner service on a 7/7 basis. The entire ED pharmacy team at the Trust have either completed, or are in the process of completing the (HEE-WM led) Advanced Clinical Practice programme, which has had a major impact on their ability to review patients and the quality of service they can deliver within the ED. The team have identified that, if extra training could be delivered for a relatively small, discrete number of practical "shop-floor" skills, this would significantly improve their ability to review specific patients independently within the MDT and support safe admission avoidance.

It is anticipated that the training identified will support the pharmacist practitioner team to deliver:

- A clinically enhanced Non-Medical Practitioner (NMP) role in reviewing frail and elderly patients within the ED, working in partnership with a Consultant Geriatrician and the Trust OPAL team for early review and assessment. Our expectation is that this role would take the referrals for frail patients currently made by the ED clinician to the Medical SHO on take.
- A greater focus for the team to be able to assess and review ambulatory care ED (AEC) patients; the aim being to maximise appropriate admissions avoidance and navigate patients safely to alternative care providers outside of the Acute Trust.
- The ability for a pharmacist NMP to assess and review patients within Falls clinic, supporting referral and follow up for the frail attender in ED, to avoid unnecessary admissions.

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Appendix G: HEE National UEC and Paramedic Workforce Programme: 2020-21 Programme Plan

Project	Summary Description & Update: May 2020	COVID-19 Impact
Clinical Leadership in Emergency Medicine ***EMLeaders***	• Leadership framework developed (HEE & RCEM) - offered to **all Emergency Medicine (EM) trainees in England** (all levels). • Partner project between HEE, NHSE/I and Royal College of Emergency Medicine. NHSI/E and HEE jointly funded – launched from Jan 2019. • Successfully delivered prog infrastructure in 2018-19: Developed 12 regional *EMLeaders* faculties, aligned to 12 regional EM schools • Pilot of 9 training modules in delivery across all regions as a test of concept from Nov 2019 – closed in Jan 2020 – evaluation and recommendations delayed until May 2020. Concept-to-core business planning to be a focus for Phase 3 (of 4) in 2020-21.	Shop-floor delivery is Paused pending review in May. Evaluation and programme Development Continuing.
Clinical Educators in Emergency Departments **(*CEED*)** **Pilot: 2019– 2020**	• Test of concept: Multi-professional Clinical Educator roles in Emergency Departments (ED) – recruitment and retention strategy. • **54 EDs & 155 Clinical Educators** recruited in Oct 2018 - all Trusts agreed to fully match-fund – all HEE regions represented. • 51 Sites continued into Phase 2 from Oct 2019): role offered to FRCEM, CCT holders and Paediatric EM Consultant Doctors. • RCEM and Aston University jointly evaluating - Interim evaluation report published Jan 2020 – suggests that this intervention is demonstrating potential as a recruitment and retention strategy for ED clinicians and as a wellbeing strategy for both EM consultant doctors (clinical educators) and the multi-professional teams which access this support. Next evaluation report due July 2020. • **Next Steps:** Concept to core business planning and expansion plan to test concept in acute medicine and urgent primary care in 2020-21.	Project ongoing through COVID and showing benefit to workforce education. Sites given option to pause – 30/54 continuing. Evaluation ongoing.
Specialist and Associate Specialist (SAS) Doctors in EM	• National SAS workforce survey and training needs analysis - interim evaluation published Jan 2020. Final report and recommendations in March 2020 – delivery delayed, expected May 2020. Project team will use evidence to support local teams in developing SAS education and training programmes in 2020. • Instructional video based on evidence gathered during recruitment and retention workshops – Dec 2019 target. • **New work:** Considering development of a **fellowship** programme to support recruitment, retention and CESR development of SAS workforce. Proposal for 2020-21 funding underway – underpinned by HEE multi-professional rotating workforce framework (see below).	Project Activity is Paused. Due for review and possible restart in May 2020
National Physician Associate Ambassador Programme (PAA)	**42 PAA posts** (54 people) recruited (21 North, 13 Mids, 8 South and 12 in London). Secondary care, primary care and HEIs (Bournemouth, Plymouth and West-of-England) represented. Trusts are a mix of DGH, acutes (including acute, paeds and emergency medicine) and mental health. Primary care includes individual general practice and federations. Weekly action learning sets established and supported by regional teams. Weekly action learning sets established and supported by regional teams. Big Group' sessions enable development of national service improvement. External evaluation underway to investigate service benefit, workforce impact and return on investment – interim due June 2020. Funding proposal underway for 2020-21 continuation.	Paused - review and re-start from June 2020. Project development and evaluation continuing. Interim evaluation report release May 2020.

Project	Summary Description & Update: UEC: May 2020	COVID-19 Impact
Fellowship: Mental Health Assessment in the ED – Pilot	**Proposal:** A 2-year fellowship programme – 12 Fellows will be recruited to develop and deliver a model training pathway for multi-professional mental health assessment and diagnostics in the ED (first) and (then) wider UEC settings. To be piloted across 12 Integrated Care System Acute Trusts (supported by Clinical Educators Programme) and 4 Ambulance Services. First national cross-programme HEE project. 2020-21 funding proposal underway - Aim to launch procurement / expression of interest phase from June 2020.	Project Paused. Project development to re-start from June 2020.
Pharmacist ACPs in UEC	The world-first **Pharmacists in Emergency Departments'** (PIED) study concluded that it is appropriate to invest in Advanced Clinical Practice training for pharmacists - aligned to HEE's national Advanced Clinical Practice (ACP) framework. NHSE/I and HEE jointly approved the final outcome paper, which was released to all stakeholders and publicly in January 2020. Stakeholder engagement underway. Final phase (London Pharmacist ACPs in UCC complete, evaluation outcomes in June 2020).	Programme continuing – concluding June – July 2020.
ED workforce capacity and demand modelling	**People Plan "Returning Time for Care:" HIA2:** NHS England and NHS Improvement will work in collaboration with Health Education England to develop, pilot and implement a suite of multi-professional workforce planning tools that help providers identify the staffing requirements they need to deliver safe, efficient and high-quality patient care ensuring that the right staff with the right skills are in the right place at the right time. Pilot planning underway as an NHSE/I & HEE partnership – aim to launch from April 2020.	Project Paused, pending NHSI review – next review June 2020.
Military / Veteran NHS Workforce	Building on a 2017-18 project to investigate potential for a Physician Associate bridging programme for veteran Combat Medical Technicians (Army), Medical Technicians (RFA) (Navy) and RAF Medics. Engagement with tri-service leads to consider the potential for mapping the competencies of these roles against the national PA curriculum and competence framework in England. Met DMA leads Jan 2020.	Project activity Paused, but scoping and development continuing – monthly comms with DMA.
Project X	**New Workstream for 2020/21**. Service improvement project scoping document written April 2020 to be shared with partners for subject matter expertise and independent academic review prior to launch in June 2020. Project aims to capture information on the impact of shop floor education and training during and following the COVID-19 crisis – capturing and presenting data and recommendations to assist in future UEC response to crisis situations.	Project initiated as a response to the crisis. The aim is to assist the NHS in responding to future spikes and workforce need during crisis.
Site Management in acute hospitals	**New Workstream for 2020/21.** Work being scoped to develop a new role in hospital wards to manage bed capacity and patient flow.	Paused pending review June 2020.
Multi-professional Supervision in ICS and PCNs	**New Workstream for 2020/21.** Supervision underpins safe education and training and is a core tenet of a number of workstreams in the UEC programme. A new workstream is in development to develop safe supervision for multi-professional education and training. In December 2019, a HEE audit recognised the need for a joined-up programme with a focus on multi-professional supervision, to address recruitment and retention challenges in ICS and PCN workforce. This includes a standards-based approach to multi-professional supervision - to address risks with supervisor access and capacity. This is a partner project with NHSE/I in 2020.	New programme proposal in May 2020 – joint proposal as a system-wide HEE and NHSE programme.

Programme on a Page: Paramedic Workforce		
Project	**Summary Description & Update: May 2020**	**COVID-19 Impact**
Rotating Paramedics	Final Phase (3/3) underway in 2019-20 – integration of rotating workforce models across ambulance services. **Final Evaluation report** published October 2019 and available here. Rotating Paramedic AIP Sub-Group set up in Dec 2019 – first session outcomes here. Next session June 2020 – focussing on delivery of workforce and commissioning strategy to integrate the concept across healthcare systems by Dec 2020.	Project continuing – no impact. Ends Dec 2020.
Primary Care Paramedics	**Pilot:** Phase 2 from Jan 2020: National team and HEE-Southwest: Develop / test a new education approach to support Paramedic direct entry into primary care. Relevance to development of Primary Care-based paramedics, PCN development and NHSE Primary Care Contract. 27 paramedics recruited to pilot cohort from Sep 2019 with unique primary care support model established and ambulance services engaged.	Project continuing – NQP element discontinued.
Paramedic Prescribing	HEE engaging with ambulances services and national stakeholders to support development of workforce strategies for in-service prescriber training for Advanced Paramedics – Developing projects with London & Yorkshire Ambulance Services.	Project Paused – Review in June 2020
Paramedic Degree Up-Skilling	Investing in an all-degree paramedic workforce in England. Degree upskilling numbers and funding agreed by all HEE regional teams in September 2019. Funding approvals and allocations confirmed and release of funding concluded Jan 2020. Funding will discontinue in March 2022 – cap of 2,500 places in 2020-22 (1,250pa for 2 years).	Paused – Review in June 2020.
Ambulance Services: Widening Participation	Paramedic programme portfolio to ensure that widening participation and diversity are considered and supported throughout our programme work to increase access to training and representation in the paramedic workforce. Developing strategic integration of lessons from earlier pilot work. Requested by national Ambulance Service Stakeholder groups and HEE regional UEC teams. Final evaluation report submitted and to be shared with Diversity forum for integration of lessons.	Project continuing, with a focus on long-term resilience, wellbeing and widening participation.
Staff wellbeing and Resilience in ambulance services	**New Workstream proposed for 2020/21**. The COVID crisis has highlighted the increasing need for a focus on health and wellbeing of ambulance workforce. The Paramedic programme team have collated available resources and engaged with key stakeholders to understand how this aim can be supported by HEE in 20/21.	
Paramedic Ambassadors	**New Workstream proposed for 2020/21**. Project business case written April 2020. Project aims to match fund a clinical education lead in each HEE region to develop and enable workstreams including curriculum mapping, degree upskilling, advanced practice development, training assurance and clinical placement / supervision capacity across ambulance services and healthcare systems.	New work – justified by issues in placement capacity and comms.
Curriculum Review: Pre-registration paramedic	**New Workstream proposed for 2020/21**. It is recommended that HEE and the College of Paramedics jointly review, and quality assure all undergraduate paramedic BSc programme providers in 2020-21, against college quality and content standards and per PEEP expectations. In particular, the provision of mental health assessment and diagnostics training and ahead of HCPC SET1 changes (BSc only for all undergraduate starts) from September 2021. A proposal for a curriculum review is underway in partnership with HRDs and College in May.	New work-stream – no delay.
Profession Mapping – advanced paramedic	**New Workstream proposed for 2020/21**. It is proposed that HEE, the College of Paramedics and the 10 Ambulance Services in England (through national HRDs group and AACE) launch a review of Advanced Paramedic role specifications, training and alignment to the national HEE ACP Framework in England. This review will require joint working between HEE's national Paramedic Workforce, ACP and AHP programme teams and should be carried out in parallel with the pre-registration review.	New work-stream – no delay.
Paramedic Apprenticeship	Paramedic Apprenticeships are planned to be introduced by ambulance services and HEIs in September 2020, replacing the In-Service training routes and HEE investment. HEE will support apprenticeships and quality assurance of the new training routes will be monitored.	C.6-800 apprenticeship starts will not be impacted.

References

Addicott, R., Maguire, D., Honeyman, M. and Jabbal, J. (2015). *Workforce planning in the NHS.* Available at: www.kingsfund.org.uk/publications/workforce-planning-nhs
(Accessed November 15th 2018)

Aiello, M. Mellor, J. (2014-18). Health Education England - Documents on File.
Midlands and East and National Urgent and Emergency Care and Integrated Care Workforce Transformation Programmes

Alderwick, H. Charles, A. Jones, B. Warburton, W. (2017). Making the case for quality improvement: lessons for NHS boards and leaders. The Kings Fund. Online at: https://www.kingsfund.org.uk/publications/making-case-quality-improvement
Accessed May 26th 2020

Allmark, P. Machaczek, K. (2018). Realism and pragmatism in a mixed methods study. Journal of Advanced Nursing, 74 (6), 1301-1309.
Online at: http://onlinelibrary.wiley.com/doi/10.1111/jan.135

Anon (2017). English Oxford Living Dictionaries: Definition of "Transformation"
Available at: https://en.oxforddictionaries.com/definition/transformation
(Accessed 8th December 2018)

Anonymous (2017). For too long, NHS management has not been held accountable for its failures. Editorial Article in the Independent (online). Online at: https://www.independent.co.uk/voices/editorials/nhs-management-it-wannacry-airbnb-hasn-t-been-held-accountable-for-its-failures-a8021776.html
Accessed 27th May 2020

Association for Project Management (APM) (2020). What does a project manager do? Online at: https://www.apm.org.uk/jobs-and-careers/career-path/what-does-a-project-manager-do/
Accessed 26th May 2020

Brierley, J.A. (2017). The role of a pragmatist paradigm when adopting mixed methods in behavioural accounting research. International Journal of Behavioural Accounting and Finance, 6 (2). pp. 140-154. ISSN 1753-1969. Online at: https://doi.org/10.1504/IJBAF.2017.10007499
Accessed 20th May 2020

Brindle, D. (2015). NHS England isn't even pretending it will pilot the 'new models of care.' The Guardian. Online at: https://www.theguardian.com/society/2015/feb/18/nhs-england-new-models-of-care-no-piloting-early-adopters
Accessed 27th May 2020

Castle-Clarke, S. Edwards, N. Buckingham, H. (2017). Falling short: Why the NHS is still struggling to make the most of new innovations. Briefing, Nuffield Trust. Online at:
https://www.nuffieldtrust.org.uk/research/falling-short-why-the-nhs-is-still-struggling-to-make-the-most-of-new-innovations
Accessed 27th May 2020

Christensen, C., Clayton, M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, MA: Harvard Business School Press.

Christensen, C., Grossman, J., Hwang, J .(2009). *The Innovator's Prescription: A Disruptive Solution for Healthcare.* McGraw-Hill

Clews, G. (2019) Royal college to rewrite policy that said pharmacists should only treat new A&E patients when the case relates to medicine *The Pharmaceutical Journal*, July 2019, Vol 303, No 7927, online
DOI: 10.1211/PJ.2019.20206680

Collins B. (2018). Adoption and spread of innovation in the NHS. The Kings Fund. Online at:
https://www.kingsfund.org.uk/publications/innovation-nhs
Accessed 20th May 2020

Cottrell, E. Turner, S. Minshall, L. Strivens-Joyce, A. Aiello, M. Lawton, S. Edwards, J. (2018). *Integrating Physician Associates into Primary care: early findings from a service evaluation of a novel Internship.* [Poster] 84cm x48cm/33" x 19"
Cresswell, J. & Plano-Clark, V. (2007). Designing and conducting mixed methods research. Thousand Oaks, CA: Sage Publications.

Dale, J. Russell, R. Harkness, F. Wilkie, V. Aiello, M (2017). *Extended training to prepare GPs for future workforce needs: a qualitative investigation of a 1-year fellowship in urgent care. British Journal of General Practice*; bjgp17X691853.
DOI: https://doi.org/10.3399/bjgp17X691853

Dalton, D. (2014). Examining new options and opportunities for providers of NHS care: The Dalton Review. Online at:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/384126/Dalton_Review.pdf
Accessed 26th May 2020

Department of Health (2013 Revision). *Emergency Medicine Taskforce Interim Report Executive Summary.* Online at:
https://webcache.googleusercontent.com/search?q=cache:dGzl3UFQZY8J:https://secure.rcem.ac.uk/code/document.asp%3FID%3D6723+&cd=2&hl=en&ct=clnk&gl=uk
(Accessed 15th November 2018)

Department of Health (2015 revision). *NHS Constitution*.
Online at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/480482/NHS_Constitution_WEB.pdf (Accessed 15th November 2018)
Design for health and wellbeing project lab (2012). The Patient Journey Map. Online at:
https://www.dhwlab.com/patient-journey-map
Accessed 20th February 2020

Ettelt, S. Mays, N. Allen, P. (2014). *NHS experience challenges implementing pilot and test-of-concept work - The Multiple Purposes of Policy Piloting and Their Consequences: Three Examples from National Health and Social Care Policy in England.* https://doi.org/10.1017/S0047279414000865 - Published online: 14 November 2014
Accessed September 5th 2018

Gbadamosi, N. (2015). What are the barriers to implementing change in the NHS?
Nursing Times. Online at: https://www.nursingtimes.net/opinion/what-are-the-barriers-to-implementing-change-in-the-nhs-11-02-2015/
Accessed 26th May 2020

Gerada, C. (2013). *Disruptive innovation does more harm than good. Health Service Journal online* Available at: https://www.hsj.co.uk/sectors/commissioning/clare-gerada-disruptive-innovation-does-more-harm-than-good/5061306.article
Accessed 15th November 2018

General Medical Council (2013) Medical education's front line: A review of training in seven emergency medicine departments. Online at: https://www.gmc-uk.org/-/media/documents/medical-educations-frontline-a-review-of-training-in-seven-emergency-medicine-departments_p-60861833.pdf
Accessed May 26th 2020

Greenaway, D. (2013). Shape of Training report, General Medical Council Online at https://www.gmc-uk.org/-/media/documents/Shape_of_training_FINAL_Report.pdf_53977887.pdf
Accessed 26th May 2020

Gronda, R. Rescher, N, (2014). Pragmatism. The Restoration of Its Scientific Roots; The Pragmatic Vision. Themes in Philosophical Pragmatis. European Journal of Pragmatism and American Philosophy [Online], VI - 2 URL: http:// journals.openedition.org/ejpap/303

Hall, R. (2013). Conducting Research in a Changing and Challenging World, Chapter: Chapter 7: Mixed Methods: In search of a paradigm, Publisher: Nova Science Publishers Inc., Editors: Thao Le and Quynh Le, pp.71 - 78

Hassan, T. Walker, B. Harrison, M. Rae, F. (2019). Stretched to the limit, A survey of Emergency Medicine consultants in the UK [online]. Royal College of Emergency Medicine. [24.01.2019]. Online at: https://www.rcem.ac.uk/docs/Policy/CEM7461-Stretched-to-the-limit-October_2013.pdf

Health Education England, NHS England, NHS Improvement and Royal College of Emergency Medicine (2017). Securing the future workforce for emergency departments in England. Online at: https://improvement.nhs.uk/documents/1826/Emergency_department_workforce_plan_-_111017_Final.3.pdf
Accessed January 13th 2019

Health Education England Mandates (2014-15, 2015-16, 2017-18, 2018-19, 2019-20). Online at: https://www.gov.uk/government/publications/health-education-england-mandate-2019-to-2020

Hendy, J. Chrysanthaki, T. Barlow, J. Knapp, M. Rogers, A. Sanders, C. Bower, P. Bowen, R. Fitzpatrick, R. Bardsley, M. (2012). *An organisational analysis of the implementation of telecare and telehealth: the whole systems demonstrator.* BMC Health Services Research, 12: 403. DOI: 10.1186/1472-6963-12-403
Accessed 10th December 2018

Hughes, E. Aiello, M. Terry, D. (2014). *Clinical pharmacists in urgent and acute care - the future pharmacist*. Commissioning [online]; p.48–53.
Available from: - http://commissioningjournal.com/downloads/Commissioning-1-6-share.pdf

Hughes, E. Wilkie, V. Aiello, M. Terry, D. (2020) Advanced Clinical Practitioner (ACP) Pharmacists in Urgent and Emergency Care: Evidence and Recommendations for Implementation. Health Education England held on file (unpublished).

House of Commons Health and Social Care Committee [HSCC] (2017). *Integrated care: organisations, partnerships and systems. Seventh Report of Session 2017–19.* Report, together with formal minutes relating to the report. Ordered by the House of Commons to be printed 23 May 2018. Available at: https://publications.parliament.uk/pa/cm201719/cmselect/cmhealth/650/650.pdf

House of Commons Health and Social Care Committee [HSCC] (2018). *Integrating Care for Patients.* Available at:
https://publications.parliament.uk/pa/cm201719/cmselect/cmhealth/650/65004.htm#footnote-270-backlink
Accessed 6th September 2018

Houser, N. (2011) Peirce's Post-Jamesian Pragmatism, *European Journal of Pragmatism and American Philosophy* [Online], III-1 | URL: http://journals.openedition.org/ejpap/866; DOI: https://doi.org/10.4000/ejpap.866

Imison, C. Buchan, J. Xavier, S. (2009). *NHS Workforce Planning: Limitations and Possibilities.* Available from http://bit.ly/1s4zPtc (Accessed 10th November 2018)

James, W. (1904). "The Pragmatic Method," *The Journal of Philosophy, Psychology and Scientific Methods*, 1 (25), 673-87.

James (1907) – re-printed as "The Project Gutenberg EBook of Pragmatism (2004) Title: Pragmatism: A New Name for Some Old Ways of Thinking." Author: William James. Release Date: February, 2004 [EBook #5116]. First posted on May 1, 2002. Last Updated: July 2, 2013
Online at: https://www.gutenberg.org/files/5116/5116-h/5116-h.htm

Johnson, R. Onwuegbuzie, A. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. Educational Researcher, Vol. 33, No. 7 (Oct. 2004), pp. 14-26 Published by: American Educational Research Association
Online at: http://www.jstor.org/stable/3700093

Khan, S. (2017). *Jeremy Hunt Launches Fresh Attack on Stephen Hawking after scientist criticise direction of change of the NHS.* Independent (online)
Available at: http://www.independent.co.uk/news/uk/politics/jeremy-hunt-stephen-hawking-twitter-7-day-nhs-scientific-evidence-a7902511.html
Accessed 29th November 2018

Katz, E. Levin, M. Hamilton, H. (1963). Traditions of Research on the Diffusion of Innovation Hamilton Source: American Sociological Review, Vol. 28, No. 2 (April 1963), pp. 237-252. Published by American Sociological Association
Online at: http://www.jstor.org/stable/2090611
Accessed 26th May 2020

Kuhn, T. (1962) The Structure of Scientific Revolutions. International Encyclopaedia of Unified Science ISBN: 0-226-45804-0 Library of Congress Catalog Card Number: 79-107472. Volume 2. Number 2 Online at:

Lipscomb, M. (2007). Mixed method nursing studies: a critical realist critique. Nursing Philosophy (journal). Online at: https://doi.org/10.1111/j.1466-769X.2007.00325.x
Accessed 27th May 2020

Lissinger, E. Jonsson, J. (2013) Innovation Measurement in a Strategy Context - How to increase innovativeness through measurement. Online at
https://www.scribd.com/document/151319899/Innovation-Measurement-in-a-Strategy-Context
Accessed 26th May 2020

Lord Darzi Review (2008) High quality care for all: NHS next stage review final report. The Health Foundation. Online at: https://navigator.health.org.uk/content/high-quality-care-all-nhs-next-stage-review-final-report-2008
Accessed 26th May 2020

Lunenburg, F (2012) Organizational Structure: Mintzberg's Framework International Journal Of Scholarly, Academic, Intellectual Diversity. VOLUME 14, NUMBER 1
Online at: https://platform.europeanmoocs.eu/users/8/Lunenburg-Fred-C.-Organizational-Structure-Mintzberg-Framework-IJSAID-V14-N1-2012.pdf
Accessed 2nd February 2019

Masic, I. Miokivic, M. Muhamedagic, B. (2008) Evidence Based Medicine – New Approaches and Challenges. Acta Inform Med. 2008; 16(4): 219–225. Published online 2008 Dec. doi: 10.5455/aim.2008.16.219-225

Morgan, D. (2007) Paradigms Lost and Pragmatism Regained: Methodological Implications of Combining Qualitative and Quantitative Methods. Journal of Mixed Methods Research: Volume 1, Number 1 (48-76).
Online at:
https://www.researchgate.net/publication/240730449_Paradigms_Lost_and_Pragmatism_Regained_Methodological_Implications_of_Combining_Qualitative_and_Quantitative_Methods
Accessed 20th May 2020

Mulgan, G. (2013). *Achieving more for less - the innovators catalyst.*
Available at: https://www.kingsfund.org.uk/audio-video/geoff-mulgan-achieving-more-less-innovators-catalyst Accessed 5th December 2018

NHS Long Term Plan (2019). NHS England.
Online at: https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/
Accessed 26th May 2020

NHS Interim People Plan (2020). NHS England. Online at https://www.longtermplan.nhs.uk/wp-content/uploads/2019/05/Interim-NHS-People-Plan_June2019.pdf
Accessed 26th May 2020

NHS England (2020) GP Contract Documentation (2019/20) Online at:
https://www.england.nhs.uk/gp/investment/gp-contract/
Accessed 26th May 2020

NHS England (2020) Integrated Care Systems. Online at:
https://www.england.nhs.uk/integratedcare/integrated-care-systems/
Accessed 26th May 2020

NHS England. (2014). *Five Year Forward View*.
Available from: https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf
Accessed 5th December 2018

NHS England (2017). *Next steps on the five year forward view.* Available at: https://www.england.nhs.uk/wp-content/uploads/2017/03/NEXT-STEPS-ON-THE-NHS-FIVE-YEAR-FORWARD-VIEW.pdf March 2017
Accessed August 13th 2018

NHS England (2005) Improvement Leaders' Guide: Evaluating improvement: General improvement skills. NHS Institute for Innovation and Improvement. Online at: https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/ILG-1.5-Evaluating-Improvement.pdf Accessed 27th May 2020

NHS Improvement (2011) Overview: Change Management: The Systems and Tools for Managing Change. Online at: https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/Overview-Change-management.pdf Accessed 26th May 2020

NHS England (2013). *Transforming urgent and emergency care services in England. Urgent and Emergency Care Review End of Phase 1 Report: Appendix 1 – Revised Evidence Base from the Urgent and Emergency Care Review.*
Online at: http://www.nhs.uk/NHSEngland/keogh-review/Documents/UECR.Ph1Report.Appendix%201.EvBase.FV.pdf
Accessed 29th November 2018

NHS Health Education England (2014-17). *Urgent, Acute and Emergency Care Workforce Transformation Programme.* Data on file.

NHS Health Education England (2014-17). *West Midlands and National Emergency Medicine Taskforce.* Data on file.

Nuffield Trust; 2016 [updated 17 May 2016 and 24 August 2016]. Expanding skills of existing staff – the best way to develop NHS workforce for 21st century. Available from: http://www.nuffieldtrust.org.uk/media-centre/press-releases/expanding-skills-existing-staff-best-way-develop-nhs-workforce-21st-cent.
Accessed April 25th 2018

Peirce C. S., (1905.2), "Issues of Pragmaticism," *The Monist* 15, 481-99; reprinted in 5.438-63 and EP2: 346-59.
DOI : 10.5840/monist19051544

Peirce C. S., (1907), Letter to the editor of *The Nation*, Manuscript 318 (R318); in EP2: 298-433 (entitled "Pragmatism").

Reason, P. (2003) Pragmatist philosophy and action research Readings and conversation with Richard Rorty Action Research Volume 1(1): 103–123: 034208[1476-7503(200307)1:1]
Poulson, B. (2012) Being Amused by Apophenia: Can we find pleasure and amusement in faulty reasoning? Posted Jul 31, 2012
https://www.psychologytoday.com/us/blog/reality-play/201207/being-amused-apophenia
Accessed 24th May 2020

Project Manager Competency Development Framework – Third Edition (2017). Project Management Institute (PMI). Online at: https://www.pmi.org/pmbok-guide-standards/framework/pm-competency-development-3rd-edition
Accessed 26th May 2020

PROSCI (not dated) An introduction to change management. Online at:
https://cdn2.hubspot.net/hubfs/367443/2.downloads/ebooks/An-Introduction-Guide-to-Change-Management-guide.pdf
Accessed 26th May 2020

Rehg, W. Bohman, J. (2001). Pluralism and the Pragmatic Turn. The transformation of critical theory. Essays in honour of Thomas McCarthy
URL: Link
Accessed 1st November 2020

Robertson, T. (1967). *The Process of Innovation and the Diffusion of Innovation*.
Journal of Marketing Vol. 31, No. 1 (Jan 1967), pp. 14-19
DOI: 10.2307/1249295
URL: http://www.jstor.org/stable/1249295
Accessed 15th November 2018

Sale, J. Brazil, K. (2004). A Strategy to Identify Critical Appraisal Criteria for Primary Mixed-Method Studies. Qual Quant. 2004 Aug;38(4):351-65. DOI: 10.1023/b:ququ.0000043126.25329.85.

Scott, P. Briggs, J. (2009). A pragmatist argument for mixed methodology in medical informatics. Journal of Mixed Methods Research, 3 (3). pp. 223-241. ISSN 1558-6898

Royal College of Emergency Medicine (2011). RCEM Operational Handbook, The Way Ahead.
Version 2, Dec 2011
Online at: https://www.rcem.ac.uk/docs/Policy/The%20Way%20Ahead_Final%20Dec%202011.pdf
Accessed January 3rd 2019

Royal Pharmaceutical Society (2020). Working in Urgent & Emergency Care - a guide
Online at: https://www.rpharms.com/resources/ultimate-guides-and-hubs/ultimate-guide-for-pharmacists-working-in-u-e-care
Accessed 20th May 2020

Syal, R. (2018). Abandoned NHS IT system has cost £10bn so far. The Guardian. Online at:
https://www.theguardian.com/society/2013/sep/18/nhs-records-system-10bn
Accessed 26th May 2020

The future of primary care. Creating teams for tomorrow (2015). Report by the Primary Care Commission. Online at:
https://www.hee.nhs.uk/sites/default/files/documents/The%20Future%20of%20Primary%20Care%20report.pdf Accessed 26th May 2020

The Kings Fund (2016). *How is the NHS structured?*
Online source, published 11th April 2016
https://www.kingsfund.org.uk/audio-video/how-new-nhs-structured
Accessed 10th April 2020
The Kings Fund (2020). *How Funding Flows in the NHS.*
Online at: https://www.kingsfund.org.uk/audio-video/how-is-nhs-structured-funding-flow
Accessed May 26th 2020

Urgent Care Commission (2014). *Urgent and important: The future for urgent care in a 24/7 NHS*.
Online at:
http://www.careuk.com/sites/default/files/Care_UK_Urgent_and_important_the_future_for_urgent_care_in_a_24_7_NHS.pdf
Accessed 15th November 2018

Warburton, W. (2018). Scaling up innovation in the NHS requires action at multiple levels. The Health Foundation. Online at https://www.health.org.uk/blogs/scaling-up-innovation-in-the-nhs-requires-action-at-multiple-levels
Accessed 27th May 2020

Wright, D. Adams, R. Blacklock, J. Corlett, S. Harmston, R. McWilliams, M. Whyte, S. Fleming, G (2018) Longitudinal qualitative evaluation of pharmacist integration into the urgent care setting. Integrated Pharmacy Research and Practice 2018:7 93–104
Online at:
https://ueaeprints.uea.ac.uk/id/eprint/67863/1/f_iprp_168471_longitudinal_qualitative_evaluation_of_pharmacist_integratio_072418_43300.pdf
Accessed 26th May 2020

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