

Introducing Physician Assistants into the Irish Healthcare System. An Integrated Clinical Workforce Reconfiguration Strategy

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Introducing Physician Assistants into the Irish Healthcare System

An Integrated Clinical Workforce Reconfiguration Strategy

Emeka Okereke

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An Integrated Clinical Workforce Reconfiguration Strategy

Student ID Number: 09107614

A dissertation submitted in partial fulfilment of the degree of MSc in Healthcare Management, Institute of Leadership, Royal College of Surgeons in Ireland, Dublin.

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Declaration

I hereby certify that the material which I now submit for assessment on the programme of study leading to the award of MSc in Healthcare Management is entirely my own work and has not been taken from the work of others except to the extent that such work has been cited and acknowledged within the text.

Name: ChukwuEmeka Okereke

Signature:

Date: 30th May, 2011

Abstract

The Irish health system is facing a unique and unprecedented workforce challenge with acute shortage of Non-Consultant Hospital Doctors (NCHDs) threatening to undermine the overall health service delivery system. Ireland's requirement to comply with the European Working Time Directive (EWTD) aimed at regulating the working hours of NCHDs, lack of sufficient funding due to economic recession, changes in immigration rules, absence of structured training programmes for most junior doctors and demographic changes are some of the prevailing circumstances that has given rise to NCHD shortage in the rapidly evolving Irish health system. Using the Health Service Executive (HSE) Change Model, this project presents a strategy for increasing the capacity and quality of the mid-level clinical workforce by introducing Physician Assistants into the system. Physician Assistants (PAs) are clinicians who are academically qualified to provide medical and surgical services to patients in a range of settings under supervision of doctors. While recognising the uniqueness of the Irish culture and the need for additional policy changes to create a sustainable health system, with the required skill mix and flexibility, this paper presents part of a potential solution to this workforce challenge. The implementation phase of this project is still on-going at the time of this publication. However, the English, Scottish, Canadian, Australian and American health systems have been used as bench marks for preliminary assessment of this project. The result is a clear indication that this system-wide change will rapidly evolve to create a more flexible, integrated and sustainable workforce for the future of the Irish health system.

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List of Abbreviations

PAs: Physician Assistants

AAPA: American Academy of Physician Assistants

NCCPA: National Council on Certification of Physician Assistants

ARC-PA: Accreditation Review Commission on Education for the Physician Assistant

HSE – Health Service Executive

RCSI – Royal College of Surgeons in Ireland

A&E – Accident and Emergency

EEA – European Economic Area

EU - European Union

EWTD – European Working Time Directive

USA – United States of America

UK - United Kingdom

AMA – American Medical Association

Chapter 1: Introduction

1.1 Introduction

This project will describe a strategy for introducing USA-trained Physician Assistants to various clinical and healthcare settings in the Republic of Ireland, to determine the feasibility of this unique workforce model as a potential solution to the current shortage of junior doctors. In order to put this project in clear context for the reader, the sections contained in this introductory chapter will set the stage by discussing the challenge of global health systems with emphasis on the Irish situation and the need for change. The concept of the mid-level clinical workforce will also be discussed followed by an overview, rationale and layout of this change project.

1.2 The Challenge of Global Health Systems

The delivery of healthcare services has become increasingly complex and challenging throughout the world (Plsek and Greenhalgh, 2001). In the past, straightforward models of care existed, healthcare practitioners had defined roles and responsibilities, patient expectations were low, care was often episodic and isolated and simplicity of design characterised clinical facilities (Hernick, 2004). In today's information age, technological advancement means that vast amount is knowledge is accessible to mankind. Technology, Research, education, clinical practice, professional development, management and administration, has become increasingly more complex and uniquely blended. Evidence-based practice is now the buzz word (Sackett et al., 1996) and a system wide approach to healthcare delivery is now common place. These complexities can also be attributed to and influenced by a myriad of other factors including demographic changes, increased demand for healthcare services, limited funding and resources, new legislation etc.

It is thus pertinent that new ways of thinking incorporating a dynamic, emergent, creative, and intuitive view of our new world must replace traditional views and ways of thinking in relation to healthcare delivery, resourcing and funding (Plsek and Greenhalgh, 2001). Governments and management of healthcare institutions need to embrace change and be proactive in developing policies and strategies that will reflect the realities of this new dynamic healthcare environment.

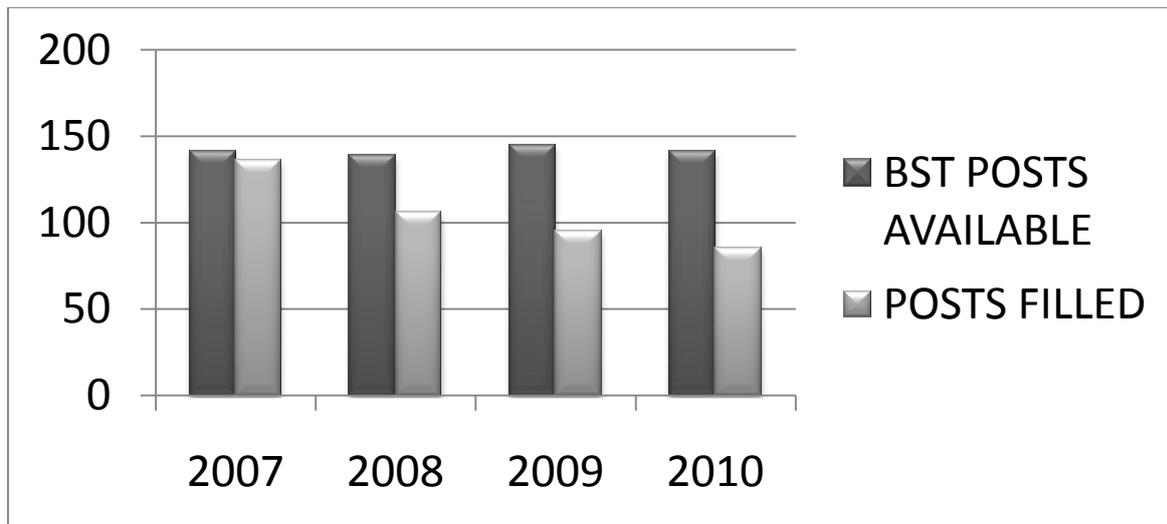
1.3 The Irish Situation

The Irish Health System is at a cross-road where change in key health policy areas and aspects of service delivery has become inevitable. The recent changes in leadership of the government and health system have created a unique opportunity for viable change. O’Ferrall (2009) argues that in the past few years, the Irish health system has failed to meet the expectations and health needs of the population in many different areas. The capacity of the Irish health system to adequately meet the needs of everyone at the point of need is clearly questionable (O’Ferrall, 2009) despite the commitments laid out in our health strategy, *Quality and Fairness – A Health System for You* (DoH, 2001). The workforce is a critical component that underpins the capacity to deliver quality and timely care to the patient population. This is an area where re-engineering and re-configuration is urgently needed. The need for a paradigm shift in the required skill-mix, competence and training requirements for effective delivery of care in this emerging, dynamic and challenging environment cannot be over-emphasised.

1.4 Need for Clinical Workforce Reconfiguration

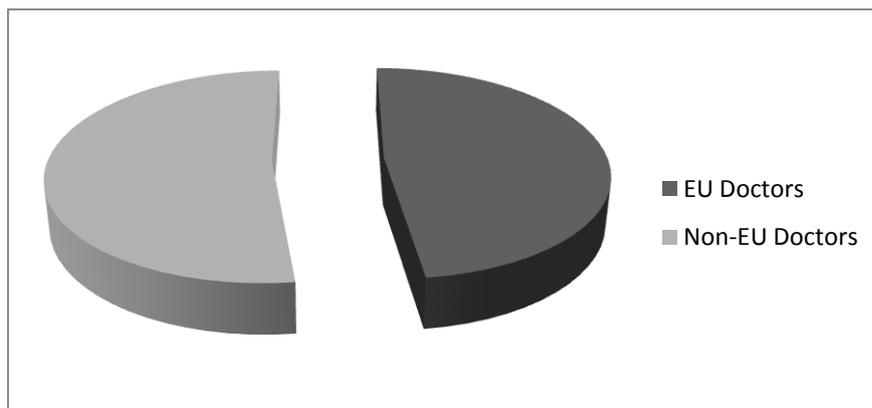
The Health Service Executive (HSE), already under immense financial pressure, is running short of Non-Consultant Hospital Doctor (Shannon, 2010). The number of applications for Non-Consultant Hospital Doctor (NCHD) posts has been on a consistent decline in the past few years. Today, most Irish hospitals are no longer able to recruit sufficient NCHD’s to staff key service areas particularly in Accident and Emergency (A&E) units. According to the Irish Nurses and Midwives Organisation (INMO), 75,000 people were left waiting on trolleys and chairs at A&E units across the country in 2010 (INMO, 2011). While the emergency units have been hit hardest by this acute NCHD shortage, vacancies and gaps exist in many other medical and surgical specialties. The Royal College of Surgeons in Ireland (RCSI) have also reported a consistent decline in the number of surgical trainees (please see figure 1 below).

Figure 1.0: Increasing Number of Vacant Basic Surgical Training (BST) Posts



Although the HSE management is working very hard to address some of these challenges, figures from the 2011 reports are yet to show significant improvements at the time of this publication. Retention of existing junior doctors (NCHD's) has also been an issue. Ireland is hugely dependent on foreign doctors. Figure 2 below illustrates that excess of fifty percent (50%) of NCHD's are from Non European Economic Area (EEA) countries and most of these doctors no longer find Ireland attractive as a place to live and work. This is due to a variety of reason.

Figure 2.0: Ireland's Dependence on Non-EEA Doctors



The European Working Time Directive (EWTD) is a compulsory legislation aimed at improving patient safety by reducing the working week for NCHDs from an average of up to 70 hours a week to 48 hours a week. Ireland, being a member of the European Union (EU) is bound by this legislation. The net result is the loss of tens of thousands of doctor-patient hours a year. This in turn, translates to reduced income for NCHD's and increased costs for

hospital management, who now rely on expensive cost of locums to ensure sustained service. At the same time, changes in local immigration laws mean that non-EEA doctors are now required to renew their residence permits based on the duration of their work contract. In most cases where the duration of contract is six months, these doctors and their dependents will be required to renew their residence permit every six months (Shannon, 2010). This process takes time and costs average of two hundred and fifty Euros (€250) per person. Exacerbated by lack of training opportunities, most doctors are now emigrating to other countries particularly United Kingdom, United States of America, Canada, Australia and New Zealand thus creating a huge gap in mid-level service provision.

1.5 Emerging Role for Non-Physician Clinicians

PricewaterhouseCoopers (2005) identified strategic resource deployment as a key sustainable feature of global health systems. The current model of NCHD deployment in Ireland where most junior doctors rotate from one hospital to another every six months poses some challenges. Working in a one clinical setting or environment for a reasonable length of time helps doctors to become familiar with the institutional culture and understand patient needs better. Also, the need to specialise places a burden on trainees to learn new skills and may shift their focus away from patients (Stille et al., 2005). Clinicians with broad-based general knowledge and skill set, who know the patients very well and are familiar with the clinical setting and work environment, add immense value to the clinical workforce. Suggestions from workforce planning literature indicate that the key requirement is to have sufficient number of staff with the right skills, knowledge, training and flexibility to meet the needs of a specific clinical environment (Buchan et al., 2000). These clinicians do not necessarily have to be doctors. Physician Assistants (PAs) have proved to be very effective in delivering solutions where the shortage of junior doctors has created a gap in mid-level service provision (Roy et al., 2008). Physician Assistants (PAs) are non-physician clinicians who are academically qualified and trained to provide medical and surgical services to patients in a range of settings under supervision of doctors. The success of this model in different parts of the developed world particularly in the United States, Canada, Australia and United Kingdom has been widely documented in literature particularly in surgery (Buch et al., 2008, Pezzi et al., 2009), emergency medicine (Doan et al., 2011, Hooker et al., 2011) and general practice (Drennan et al., 2011b).

The challenges facing the Irish health service today is not unique to Ireland. There is therefore need for Ireland to consider solutions that have worked well for other countries that were in similar situations in the past.

1.6 Change Project Overview and Rationale

Effective change management is a key attribute of successful organisations in the 21st century (Kotter, 1996) and in healthcare establishments, majority of stakeholders including policy makers, management and staff seems to accept the need for change (Grol et al., 2002). The subject of change has thus become a very important subject today. This project is about managing change and has been carried out as part of the requirements for the award of a Master of Science degree in Healthcare Management by the Institute of Leadership, Royal College of Surgeons in Ireland (RCSI).

This project presents a potential solution to the challenge of NCHD shortage facing the Irish health system today. It is thus timely and of significant strategic importance to the State. Several change management theories were considered but the HSE Change Model was chosen for the delivery of this change project. This change management methodology was developed locally within the system and was chosen for use in this project because it has been tried and tested in other change projects within the Irish health system.

1.7 Summary

This dissertation is divided into five chapters with subsections within each chapter. The introductory chapter has helped set the stage and highlighted the background and rationale behind the project. Chapter two, entitled Literature Review, will present evidence to support the change that is being implemented. The concept of the use of Physician Assistants is clearly explained in this chapter including the origin, education, training, practice and regulation. Chapter three will describe the application of change management theory (HSE Change Model) to the practice of change management while the outcomes and evaluation will be presented in Chapter four. In Chapter five, the author will present a robust discussion on the change project and will reflect on the project highlights, challenges, successes and implications for management. This concluding chapter also documents lessons learned and makes recommendation for future improvements.

Chapter 2: Literature Review

2.1 Introduction

The goal of Chapter two is to explore a wide range of literature evidence in support of this change project. Building on the background information and rationale for change presented in the previous chapter, this chapter will introduce the concept of the Physician Assistant by exploring the history of the profession, education, regulation, legislation and scope of practice. Literature relating to similar change projects in Scotland and South Australia will also be reviewed and research outputs in support this concept will be explored. Finally, this chapter will present the distinctions between Physician Assistants and Nurse Practitioners, a question the author identified as a frequently asked question during the course of this project.

2.2 Physician Assistants

Physician Assistants are not the only non-physician clinicians or practitioners within the medical profession (Laurant et al., 2009). Other categories of non-physician clinicians exist including Medical Assistants, Surgical Assistants, Clinical Associates, Advanced Nurse Practitioners etc. The two most established categories are the Physician Assistants and the Advanced Nurse Practitioners. This chapter will focus on Physician Assistants and will explore the background of the profession, education, policy, practice, geographical spread and impact. As evidence to support the change project, relevant literature and research outputs relating to the above will also be reviewed. In order to give the reader additional insight, a section of this chapter will draw comparison between the Physician Assistants and the Advanced Nurse Practitioners. Considering the success of this workforce innovation in other health systems particularly in the UK, the author argues in the final section of this chapter, that this change project will offer long term benefits for the Irish health system as research evidence suggests.

The Competence and Curriculum Framework for PAs in the UK defined a Physician Assistant as;

‘a new healthcare professional who, while not a doctor, works to the medical model, with the attitudes, skills and knowledge base to deliver holistic care and treatment within the general medical and/or general practice team under defined levels of supervision’ (NHS, 2006 p.3).

A Physician Assistant can formulate and document a detailed differential diagnosis, having taken a history and completed a physical examination; develop a comprehensive patient management plan in light of the individual characteristics, background and circumstances of the patient; maintain and deliver the clinical management of the patient on behalf of the supervising physician while the patient travels through a complete episode of care; perform diagnostic and therapeutic procedures and prescribe medications (subject to the necessary legislation); and request and interpret diagnostic studies and undertake patient education, counselling and health promotion.

2.2.1 History

The concept of the PA was first introduced in the United States of America in the 1960's as a strategy to deal with the shortage of primary care physicians (Hooker et al., 2010). In October 1967, three graduates of the Duke University PA program started a career in a new profession with no official government recognition. Following more than four decades of struggle, challenges and growth, the PA profession is now fully recognised and forms an integral part of the medical workforce in the USA, Canada, Australia, United Kingdom, Netherlands, South Africa etc. The PA profession has continued to grow at exceptionally fast pace largely due to the looming shortage of doctors and healthcare workers in most parts of the world. In early 2010, the PA profession recorded excess of 90,000 U.S. graduates with 86% of them still active in the workforce and excess of 300 working in other countries. The United States has 145 PA programs while a total of 13 programs are outside of the US and more are being developed. In 2005, the U.S. Bureau of Labour Statistics recorded the PA profession as the third fastest growing profession with a projected increase of 49% between 2002 and 2012 (Hooker et al., 2010). Today, research evidence suggests that these projections were accurate and may have been surpassed (Oswanski et al., 2004, Roy et al., 2008).

Significant change or transformation of this nature always occurs as a result of one or more sociological events or catalysts (Kotter, 1996). Several events were serendipitous to the rapid growth and expansion of the PA profession. Medical specialisation has become an attractive phenomenon for doctors since the late 1960's. On graduation from medical college, most doctors continue on to postgraduate training in any specialty of their choice. This trend has become the norm thus creating a gap in service delivery. This gap can only be effectively filled by staff grade clinicians who are basically interested in providing care and functioning at the mid-level clinical cadre with little interest in specialist training but with the motivation,

flexibility and generalist approach needed at the front line of medical intervention. For most PA's the choice of becoming a PA is conscious mature decision. PA training is provided according to the medical model and as such PA's became the most logical profession that could effectively fill this emerging gap. In as much some resistance to the profession continues to exist, PA's were largely accepted because of the value to bring to the healthcare system. The influence of the military on the PA profession is also worth noting. Towards the end of the war in Southeast Asia in the late 1960s, American soldiers who were also trained medical personnel operating in combat areas developed significant skills particularly in trauma management (Hooker et al., 2010). At the end of the war, they were unable to contribute to the health system in America due the lack of formal recognition for their skills and training. The PA profession created a platform for these soldiers to practice medicine under a structured and regulated system. The military have continued to train and use PAs in American and other parts of the world and some PA programs are dedicated to training military personnel only. Increase in the demand for healthcare service was also a strong catalyst. The world has recorded significant increase in the demand for health services since the last decade. This increase in demand triggered an increase in the skill mix and variety of resources required in order to provide equitable care across a broad spectrum of the patient population. The use of non-physician clinicians thus became inevitable.

In 1971, the PA profession was officially recognised by the American Medical Association (AMA) and necessary regulatory frameworks were put in place. Whereas health systems are different from county to country, there are major similarities. Other health systems began to follow the footsteps of America due the same kind of challenges that gave birth to the PA profession in America. Today, the spread of the PA profession has continued in every continent in the world with prospects of further growth and expansion in the near future.

2.2.2 Education & Regulation

Generally speaking, PA education is said to incorporate an academic curriculum that is very similar to that of undergraduate medical programmes except that the PA curriculum is abbreviated without long vacations. PA training programmes are generally full-time with a total duration of two to three years or approximately 27 months (Hooker et al., 2008). The structure of most training programmes is such that the first 12 months are the pre-clinical years and may involve simulations while the rest of the training involves clinical rotations in

various medical specialties. In early 2010, the total number of PA programs in the US is 145 and run from a variety of institutions or colleges most of which have already established medical schools (Hooker et al., 2010).

As a pre-requisite for entry into a PA school, most programs require candidates to have a primary degree in the basic, biomedical or life sciences with good foundation in anatomy, physiology, biochemistry and microbiology. Prior healthcare experience is also an added advantage (Farmer et al., 2009). On graduation, most PAs are awarded a Postgraduate Diploma or a Masters Degree. In order to practice as a PA in America, it is required that individuals be graduates of an educational programme accredited by the US Accreditation Review Commission for Physician Assistants (ARC-PA) and pass the PA National Certifying Examination administered by National Council on Certification of Physician Assistants (NCCPA). In order to maintain the rights to clinical practice, PAs are required to have at least 100 Continuing Medical Education (CME) hours biannually and recertify every six years by taking the NCCPA re-certification examination (Legler et al., 2007). The standards in the US are very similar to the standards in Canada and Australia.

In the United Kingdom, PA education is still at its early stages and there are only a handful of PA programs in England and Scotland. According to the UK competence and curriculum framework, the theoretical content of the PA education curriculum is similar to that of undergraduate medicine but the level may be different (NHS, 2006). In addition, a minimum of 1, 600 hours of clinical experience in core medical specialties is compulsory and exposure to general surgery, community health, general hospital medicine, mental health, emergency medicine, obstetrics and gynaecology and paediatrics is highly recommended. University of Birmingham and University of Wolverhampton currently run the two most established PA programmes in England. In both institutions, minimum entry requirements include 2:2 (although 2:1 is preferred) at Honours level in life or biomedical sciences with some health service experience. The UK and Ireland Board for Physician Assistant Education (UKIBPAE) is currently working towards a single national assessment for all programmes as a pre-requisite for registration in the voluntary register. Discussions and negotiations are also on-going in the area of legislation and regulation and new programmes are being planned in Aberdeen and Ireland.

2.2.3 Scope of Practice

An aspect of the definition of the Physician Assistant given in section 2.1 above is worth noting. Whereas the PA has the skills, training and experience to deal with everyday health care needs in a variety of clinical settings and specialty practice environments, he/she is a physician extender and not an independent practitioner (CAPA, 2009). PAs work under the direction of supervising physicians within the client/patient-centered health care team.

Most PAs, on entry into clinical practice are equipped with the skills and knowledge to effectively provide safe care to patients in a variety of clinical settings. To a very large extent, the Physician Assistants scope of practice is determined by the delegatory decisions made by the supervising physician (CAPA, 2009). This allows for flexible and customized team function. The physician has the ability to observe the PA's competency and performance and to ensure that the PA executes tasks and procedures in the manner preferred by the supervising physician. The physician is also in the best position to assess the acuity of patient problems seen in a particular setting. Within each type of medical setting, from general practice to surgical facilities, the supervising physician is able to plan for PA use in a manner that is consistent with the PA's abilities, the physician's delegatory style and the patients' needs (AAPA, 2010).

2.3 Similar Projects and Research Evidence

The basis for the design and implementation of this change project is largely underpinned by the success of similar projects completed in Scotland and South Australia. Although the change model currently being used in Ireland is different, these projects are similar in most ways. The two main reports from these projects, Evaluation of Physician Assistants in South Australian Hospitals (HMA, 2010) and Evaluation of Physician Assistants to NHS Scotland (Farmer et al., 2009) are thus worth reviewing. A selection of journal publications and research outputs in support of this change will also be reviewed.

In November 2006, a two-year pilot project was commissioned by the workforce directorate of the National Health Service (NHS) Scottish Executive in response to workforce gaps in the health system. Fifteen USA-educated PAs were recruited to work in Scotland for 24 months in order to evaluate the impact of introducing PA's into the health service. These PAs were placed in the following clinical settings: primary care, out of hours clinic, emergency

medicine, intermediate care, orthopaedics and acute receiving units. Evaluation method used involved mixed data collection including monthly feedback forms, individual and group interviews, work activity data collection, work shadowing and scope of practice recording. According to the report, longitudinal study was mostly adopted and nVivo was used for qualitative data management while Microsoft Excel and SPSS statistical analysis software were used for quantitative data analysis (Farmer et al., 2009). During the life span of this pilot project, only two minor patient safety issues were recorded. In one of the instances, a PA advised a patient to change her drug regime without prior consultation with the supervising physician while the second instance was a mix up in patient records. According to the Scottish report, the safety records and the patient satisfaction ratings of the PAs were significantly high (Farmer et al., 2009). The scope of practice extended with time although when interviewed, the PAs pointed out that their scope of practice in Scotland was much more restrictive in comparison to their scope of practice in the US. The lack of prescription rights for PAs in the UK was also thought to be a hindrance with negative impact on their level of effectiveness and efficiency. The report also pointed out that the PAs provided continuity of care during peak periods and were seen to possess key distinguishing features that could potentially add significant value to the health system. They worked in roles mostly similar to that of a mid-level generalist doctor and supervision arrangements varied from close to formal/distant relationships. Overall, key stakeholders were generally pleased with PAs and the value they add to the health system. Most sceptics were also converted when they had close interaction with PAs. Nurses were among the stakeholders that offered the highest level of resistance but most of them were impressed with the PAs once they started working with them and understood the role better. Cost efficiencies were also noted to have been achieved during this pilot project. Like any project of this nature, there were issues documented as table 2.3 below illustrates.

Table 2.3 – Issues identified during the Scottish PA Project.

In out of Hours (three PAs worked in out of Hours: one left after a month)

- PAs need to be able to prescribe to be most productive
- Reported to operate like a less experienced or supporting GP
- Culturally attuned compared with international locums
- Useful addition if team can operate with GP and a PA (previously had two GPs)
- Nurse and paramedic practitioners could do the same job, but with specific training and experience requires
- May be less directly productive as emphasise element of patient education, although this may benefit in the longer-term
- No quantitative evidence of over-referral

In Emergency Medication (four PAs worked in emergency medicine)

- Reported to be capable of working like a doctor in training
- Provide continuity for trainee doctors and others
- Perceived to help meet waiting time targets
- Better if they have emergency medicine experience
- Comparable productivity to other staff
- Perceived as an educational resource
- Medical supervision difficult in large, busy departments

In primary care (five PAs worked in primary care)

- Reported capable of working at the level of a GP in training
- In one setting was deployed like a practice nurse
- Initially, tended to see less complex patients
- Some supervisors and team members thought PAs were useful; others would rather have GPs
- Being unable to prescribe was a hindrance

In intermediate care (two PAs worked in intermediate care)

- PAs carved out a distinctive and valued new role
- Developed as ‘physician extenders’
- Reported capable of working at level of staff grade doctor
- Provide continuity in the setting for trainee doctors
- Confident, flexible and autonomous
- Specialist nurses would like to have trained as PAs
- Perceived to have a positive impact on patient throughout

In orthopaedics (one PA worked in orthopaedics)

- Reported to work as ‘physician extender’
- Exceeded consultant expectations
- Reported working almost to level of specialist trainee doctor
- An education resource for junior staff
- Perceived to have enhanced consultant productivity

The issues listed above notwithstanding, the findings of the pilot project suggest that the PA profession was found to be a feasible addition to the health service workforce as a means of dealing with the shortage of junior doctors in Scotland. Findings indicate that PAs function at

the same level with doctors and bring complementary skills and attitudes to multi-disciplinary healthcare teams. They were also found to be similar to Nurse Practitioners in some ways but present key positive distinguishing characteristics. The results also showed that the PA's practice is safe and PAs enjoyed high satisfaction ratings from patients, consultants and other key stakeholders while providing continuity of care in a flexible and cost effective manner. Finally, trusting relationship between a PA and the supervising physician was identified as being key success criteria whereas the inability of PA's to prescribe was a major hindrance.

The South Australian Department of Health (SA Health) conducted a study similar to the Scottish as a proactive means of dealing with potential shortage of doctors in South Australia. The study commenced in October 2008 in three selected metropolitan hospitals in South Australia to evaluate the addition of Physician Assistants into the local healthcare workforce (HMA, 2010). The overall aim of this project was to generate sufficient evidence to inform health policy and management decisions on adopting the US-style PA model in Australia. Results from this study showed that the four USA-trained PAs that took part in the pilot project made significant and measurable contributions to the clinical settings where they were deployed. They also made major contributions to the system particularly by helping to improve efficiencies in health service delivery. Patient waiting lists and waiting times significantly decreased while throughput increased during this pilot project (HMA, 2010). During this pilot project, there was no negative impact on junior doctor training opportunities and in some cases, the presence of the PAs enhanced these opportunities. Safety and quality of care remained uncompromised and PAs were well-accepted by patients and other healthcare professionals particularly following adequate education. In a nutshell, the PA model was accepted as a feasible option to address some of the manpower and service delivery gaps in South Australia.

A range of recent research outputs published in several high-profile international medical, surgical and healthcare management journals have also shown consistency in the potential contributions of PAs to a health system. Drennan et al (2011a) concluded that general practitioners in England viewed PAs as a positive addition to multi-disciplinary teams particularly in ensuring that patient's demands were met within a practice's finances. They also identified the need to develop stronger governance and regulatory frameworks within the UK. In a systematic review of the role of PAs in emergency medicine, Doan et al (2011) concluded that PAs are reliable in assessing medical complaints and performing basic medical/surgical procedures. They also concluded that PAs are well accepted by staff and

patients. White et al (2010) outlined the process through which PAs were successfully integrated into the infectious disease department at the M. D. Anderson Cancer Centre in Houston Texas while Singh et al (2011) described successful implementation of the PA model as an alternative to the traditional physician model in inpatient care. In the last three years, the number of research outputs has increased and the results have been fairly consistent in favour of the PA model.

2.4 Physician Assistants and Advanced Nurse Practitioners

There are similarities between the Physician Assistants and Advanced Nurse Practitioners (ANPs). As a result of this, some people within the medical profession will argue that these models are mutually exclusive. In other words, since we already have ANPs in Ireland, we don't really need PAs. This is not true. PAs and ANPs are different and co-exist seamlessly and effectively in other health systems (Friese et al., 2010). Some of the major differences between these two models have summarised in Table 2.3 below.

Table 2.4 - Comparison of Physician Assistants and Nurse Practitioners

Category	Physician Assistant	Nurse Practitioner
Definition	Health care professionals licensed to practice medical care with physician supervision.	Registered nurses with advanced education and training in a clinical specialty who can perform delegated medical acts with physician supervision.
Philosophy/Model	Medical/physician model, disease centred, with emphasis on the biological/pathologic aspects of health, assessment, diagnosis, treatment. Practice model is a team approach relationship with physicians.	Medical/Nursing model, Biopsychosocial centred, with emphasis on disease adaptation, health promotion, wellness, and prevention. Practice model is a collaborative relationship with physicians.
Education	Affiliated with Medical schools. Many have entry-level bachelor's degree. Previous health care experience may be required; Program curriculum is advanced science. All PAs are	Affiliated with Nursing schools. BSN is prerequisite; curriculum is bio- psychosocial based, based upon behavioural, natural, and humanistic sciences. NPs choose a specialty training track in adult,

	trained as generalists- a primary care model and some receive post-graduate specialty training. Procedure and skill oriented with emphasis on diagnosis, treatment, surgical skills, and patient education.	acute care, paediatric, women's health or gerontology. Emphasis on patient education, diagnosis, treatment and prevention. Generally not trained for surgical setting.
Scope of Practice	The supervising physician has relatively broad discretion in delegating medical tasks within his/her scope of practice to the PA. Written guidelines are required for prescriptions.	Nursing care is provided as an independent function; however, protocols and written or verbal orders are required for delegated medical acts including prescriptions - such acts require general MD supervision.

2.5 Summary

The literature and research evidence presented in this chapter is only a small fraction of a wide range of literature in support of this change project. The Scottish and Australian projects have been used as benchmarks for the Irish project thus creating an opportunity to draw from lessons learned to ensure success. Although, these projects used different change management theories, change management theories are generally inter-related and address similar underlying contexts (Kritsonis, 2005). The next chapter will discuss the methods adopted in this change project and the implementation process.

Chapter 3: Methods

3.1 Introduction

Having explored relevant literature in the preceding chapter, chapter three will introduce the theory of change management and the process of change as it relates to this project. The HSE Change Model, an approach adopted in this project will be discussed in detail. Each of the stages of the HSE Change Model; Initiation, Planning, Implementation and Mainstreaming will be discussed and the activities that took place as part of each phase will be described.

3.2 Change Process

In the past few years, change has become an ever present feature of most global health systems (HSE, 2008) and the Irish health system is no different. The pace of change has also never been greater than in the twenty-first century (Balogun and Hailey, 2004). These changes are necessary to ensure the delivery of the standards of care patients expect and staff wants to provide (Cameron et al., 2001). Change also presents enormous opportunities for corporate and individual learning (Davidson and De Marco, 1999). Altman and Iles (1998) suggested that change is value adding as it adds competitive advantage to an organisation. However, change is not easy (Kotter, 1996). It impacts on every aspect of our culture and thus need to be effectively managed to ensure successful outcomes (HSE, 2006). Moran and Brighman (2001 p.111) defined change management as;

‘the process of continually renewing an organisation’s direction, structure, and capabilities to serve the ever-changing needs of external and internal customers’.

It can be deduced therefore that change is not linear. It is a complex set of continuous and interrelated components that can influence each other (HSE, 2008). It is a continuous process that needs to be followed systematically to ensure success. Kotter (1996) emphasised the sequential nature of the components of the process of change and highlighted the fact that transformation efforts take time and needs to be managed tightly and patiently to achieve desired outcomes. As a result of these consistent discoveries of the nature of change, several change management theories have emerged over the years. It is worthy to note that these theories, although different, have underlying similarities and correlation (Kritsonis, 2005).

3.2.1 Change Management Theories

Lewin was a researcher and prolific theorist whose pioneer work in the areas of interpersonal, group, intergroup and community relationships gave birth to the planned model of change. According to Bamford and Forrester (2003), the structured approach to change management was introduced by Kurt Lewin. He founded the Research Centre for Group Dynamics in 1945 (HSE, 2008). Lewin suggested that for any change management efforts to succeed, old behaviour or ways of doing things must be given up entirely and replaced with a new behaviour or ways of doing things. His three stage model of change (Lewin, 1951) became one of the most popular theories or models of change. The three stages are; Unfreeze (Readiness for change), Change (Implementation) and Refreeze (Making it stick). Please see table 3.2.1 below.

Table 3.2.1 – Lewin’s Three-stage Change Process

Unfreeze	Change	Refreeze
Create the need and urgency for change by altering the state of equilibrium.	Move from old behaviours to new behaviours.	Make the change stick by establishing the new pattern of behaviour as the norm.

Lewin believes that systems are held in equilibrium by equal and opposing forces. The driving forces create the pressure required for change to take place while the restraining forces impede change efforts. If the forces are of equal magnitude, the system will remain in a state of equilibrium making it difficult for organisational change to take place. When the driving forces outweigh the restraining forces, change efforts will most likely succeed and vice versa. This is rationale for using the force-field analysis as a tool for assessing readiness for change. Although Lewin’s Change Theory is accepted as a general model or framework for change, it is very broad and does not give clear guidance on steps to be taken in the real practice of organisational change. Several authors have thus presented different variations of the above model in an attempt to make it easy to understand and more practical. However, according to Kristonis (2005), some of these variations ended up becoming more complex and less practical. Examples of these variations include the seven-phase model of planned change (Lippitt et al., 1958) and the subsequent eight-phase model (Huse, 1980).

In recent years, the planned model of change has come under criticism by several authors and researchers. According to Dunphy and Stace (1993), organisations are faced with different kinds of change management issues and as such, methodologies ought to be designed to fit

the specific situation, as opposed to the one-size-fits-all approach. Pool and Van De Ven (2004) argued that there are different kinds of change and drew distinction between episodic (one-off and time dependent) change and continuous change (occurring over a prolonged period of time). According to McAuliffe (2000), most earlier models of change are deficient in the sense that they treat change as a linear process without taking into account the inter-dependent nature of the factors that influence change. He also argued that in the healthcare industry where the pace of change is rapid, the planned models of change will not be effective. The planned models of change are seen to be more effective in stable organisations and favourable to a top-down approach to change. Emergent models of change on the other hand favour a systems approach, and are now seen to be more practical. In recent years, Young's meta model of change (Young, 2009) has gained acceptance globally especially in the academic community and is considered to be practitioner-friendly while Kotter's eight step change model (Kotter, 1996) appear to be the most ground-breaking model of change every published. The Kotter's model will be discussed briefly in the next section.

3.2.2 Kotter's Eight Step Change Model

John Kotter, a Harvard Business School Professor, is widely known and regarded as the world's foremost authority on leadership and change (Stanleigh, 2008). In an attempt to investigate why transformation efforts fail, Kotter (1996) outlined eight steps to transforming an organisation. The inferences drawn from these eight steps were used to explain why transformation efforts fail. Kotter's eight steps are illustrated in table 3.2.2 below.

Table 3.2.2 – Kotter’s Eight-Step Change Model (HBR, 2011 p.138)

Step 1	<p>Establish a sense of urgency</p> <ul style="list-style-type: none"> • Examine market and competitive realities • Identifying and discussing crises, potential crises, or major opportunities.
Step 2	<p>Forming a powerful guiding coalition</p> <ul style="list-style-type: none"> • Assembling a group with enough power to lead the change effort • Encouraging the group to work together as a team
Step 3	<p>Creating a Vision</p> <ul style="list-style-type: none"> • Creating a vision to help direct the change effort • Developing strategies for achieving that vision
Step 4	<p>Communicating the Vision</p> <ul style="list-style-type: none"> • Using every vehicle possible to communicate the new vision and strategies. • Teaching new behaviours by the example of the guiding coalition.
Step 5	<p>Empowering others to act on the vision</p> <ul style="list-style-type: none"> • Get rid of obstacles to change. • Changing systems or structures that seriously undermine the vision • Encourage risk taking and non-traditional ideas, activities and actions.
Step 6	<p>Planning for and creating short-term wins</p> <ul style="list-style-type: none"> • Planning for visible performance improvements. • Creating those improvements. • Recognising and rewarding employees involved in the improvements.
Step 7	<p>Consolidating improvements and producing still more change</p> <ul style="list-style-type: none"> • Using increased credibility to change systems, structures and policies that don’t fit the vision. • Hiring, promoting and developing employees who can implement the vision. • Reinvigorating the process with new projects, themes and change agents.
Step 8	<p>Institutionalising new approaches</p> <ul style="list-style-type: none"> • Articulating the connections between the new behaviours and corporate success. • Developing the means to ensure leadership development and succession.

According to Kotter, the high failure rate of change efforts is as a result of managers not realising that all of the steps listed above are essential and instrumental to success. Skipping any of the steps will result to negative consequences. Whereas these eight steps appear to be linear, there are interdependencies across the eight stages. Activities like communication,

stakeholder engagement, creating and sustaining the vision etc are examples of activities that are cross-linked across various steps or stages. Notwithstanding the wide acceptance of the Kotter's change model, the author has chosen the HSE Change Model for the purposes of this change project. It is worthy to note that the HSE model and the Kotter's model have many similarities and the choice of the HSE model is primarily due to the wide acceptance of the HSE model within the Irish health service. This method was designed with the local culture and circumstances in mind and has been used in various successful change efforts.

The HSE Change Model, the individual phases, steps, activities/inputs, tools, techniques for change and outputs will be the focus of the next section.

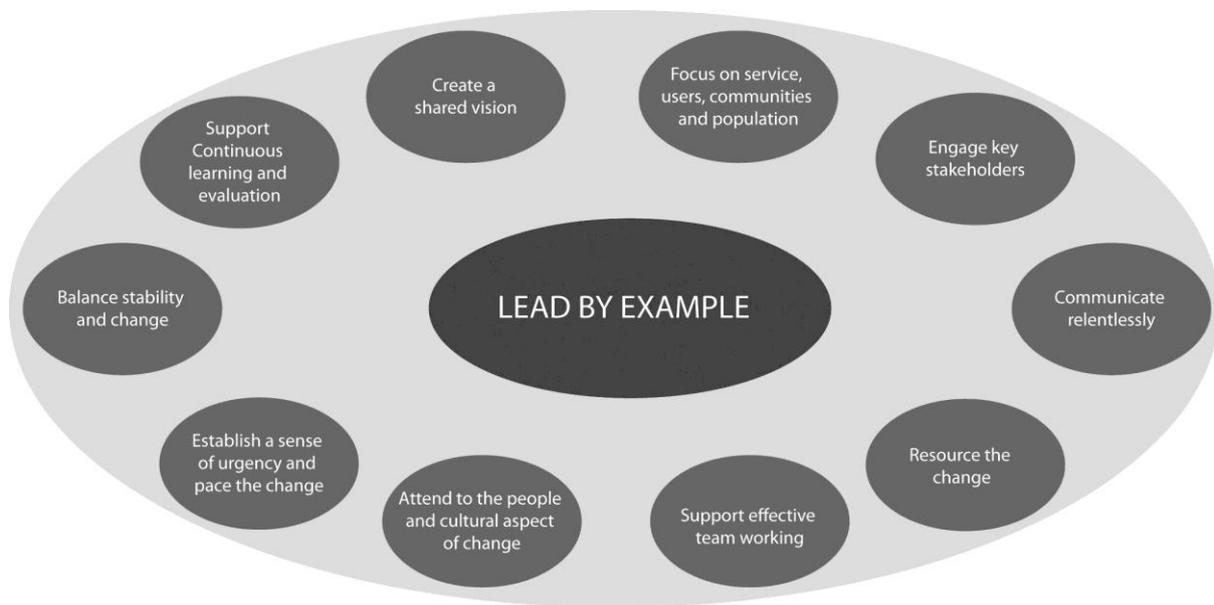
3.3 The HSE Change Model

The HSE Change model is the brainchild of the Organisational Development and Design Unit of the HSE Human Resources Directorate and was created out an amalgamation of major change management and project management frameworks. The model was further refined in consultation with the Organisational Development and Design Unit and formally approved in April, 2008. This change model represents the journey of change or transformation that enables people to move from a current state to a new desired state in line with a shared vision (HSE, 2008).

The HSE Change model is made up of four stages; Initiation, Planning, Implementation and Mainstreaming. In practice, these four stages are approached as a continuous and homogenous process and not just a linear process. There are interdependencies and bi-directional links between the four stages as illustrated in the diagrammatic representation of the HSE Change Model. Please see Appendix A.

Underpinning all of these stages are activities that are necessary to support the change project. These activities illustrated in Figure 3.0 below have been identified as being critical in ensuring the success of change efforts (HSE, 2008). During the life of this project, the author has endeavoured to incorporate these activities and ideas in a coherent fashion throughout the different stages of the project.

Figure 3.0 – Activities Necessary to Support Change (HSE, 2008)



The Roadmap for change (Appendix B) represents a summary of steps taken and activities that took place at the different stages of this change project. An attempt was also made to document the tools and techniques used and key outputs as applicable.

3.3.1 Initiation

The purpose of the initiation phase is to adequately prepare and create the readiness for change. At this stage, key stakeholders are identified, the purpose and mandate for change is determined, the organisation’s readiness for change is assessed, resource requirements for change is identified and agreed. Basically, all components necessary to ensure the success of the change project are reviewed at this stage. Whereas all stages of the change project are equally important, lack of attention to details in this first preparatory phase always leads to challenges and may result to overall failure of the project.

A key driver for change in relation to the clinical workforce in Ireland is the acute shortage of junior doctors. It was thus necessary at the early stages of this project to attempt to ascertain the causes of this shortage. Through engagement with the right stakeholders, one-to-one meetings and brainstorming sessions, the author was able to identify some of the causes of this shortage. These findings were presented using a tool called Cause-and-Effect Diagram or

Fish Bone Diagram (please see Appendix C). This tool is also referred to by some authors as Ishikawa Diagram taken from its Japanese origin (Protzman et al., 2011). It was necessary to create a vision for change at the early stages of this project and to share/communicate this vision relentlessly. In order to do this effectively, an understanding of the forces for and against change was necessary. The author took advantage of a tool called Force Field Analysis (please see Appendix D). The findings from the use of this tool clearly indicated that the forces in favour of change were stronger than the forces opposing change. Identifying the key stakeholders, their power and influence was also critical. The author used a change management tool called Stakeholder Analysis to evaluate the different stakeholders. The finding of this analysis is presented in Appendix E and was instrumental to successfully identifying the right people to engage in the change process (please see Appendix E). Amongst other powerful stakeholders, it is worthy to note that the author identified a particular group of stakeholders (Nurses) as being powerful and having a significant level of influence. During this initiation phase, the author spent time to attend to the people and cultural aspects of change through a series of consultations, and by ensuring that the vision for change is widely shared and the sensitivities arising from same has been addressed as much as possible. A key output of this phase is the initial business case.

Appendix B illustrates the steps, inputs, tools and outputs of the initiation phase of this project.

3.3.2 Planning

Specific and in-depth details about the change are examined at the planning phase of the HSE Change Model. All necessary support needed to ensure the success of the project is sought at this stage. This phase of the project is time consuming but rightly so because it is important to invest time in planning to ensure that obstacles and resistance to change is reduced as much as possible.

Three key steps were taken as part of this stage of the project; Building Commitment, Determining the detail of change and Developing an implementation plan (please see Appendix B for details). Key stakeholders identified in phase 1 were fully engaged during this phase. Several focused formal sessions and informal meetings took place in order to build requirement commitment and increase the readiness for change. Also, during this phase, the author arranged a trip with key stakeholders to Birmingham, UK to see how mid level healthcare practitioners (PAs) were adding value in the emergency unit of a major acute

hospital in the region. The team also met with experienced practitioners involved in PA education, training and practice in the University of Birmingham. Formal presentations took place and small group discussions created the opportunity for the more experienced practitioners in the UK to share their lessons and successes in the use of this workforce model. Similar meetings took place in the United States of America. These meetings helped in determining the details of the change being planned for in Ireland. It also helped in strengthening the vision for change. Following this national and international stakeholder engagement, the final aspect of this stage involved putting together a detailed project implementation plans. Further details of the inputs and outputs of the stage is shown in Appendix B.

3.3.3 Implementation

The implementation phase focuses on the actual implementation of the project plans developed in phase two of the change model. This phase is make up of this single step; implementing the change.

Whereas the project plans seemed good enough and appears to meet all requirements for the delivery of the change, it became obvious once the actual implementation started that the reality of the change management practice is different from the theory (Grol et al., 2002). Managing the changes and risks that arise during this implementation phase is very vital to successful outcomes.

Delays arising from resistance to change and slow process within the service management structures resulted to delays in the implantation phase of this project. The implementation of this project is thus still on-going at the time of this publication. However, the strategy for change is fully accepted and signed off.

3.3.4 Mainstreaming

Several change management theories suggest that quick wins are important and it is vital to celebrate successes as they emerge (Kotter, 1996). It is however important to ensure that successes are sustainable. It is important to focus energy in making the new ways stick (HSE, 2006). Failure to do this may result in people quickly going back to the old ways of doing things. This is the bases for this final phase of the HSE change model. There are two key steps in this phase; Making it ‘the way we do our business and Evaluation & Learning (please

see Appendix B). The importance of evaluation and learning cannot be overemphasised. Protzman et al (2011) argued that this process of evaluation and learning helps to ensure optimal quality of service delivery in healthcare.

3.4 Summary

This chapter has briefly explored change management theories and the process of change with particular emphasis on the HSE Change Model. The application of a theory of change to the practice of change management has been demonstrated in this chapter. The sequence of activities illustrated in Appendix B shows the systematic approach adopted during this project. Adherence to a tried and tested approach is relevant to the overall success of change projects.

An evaluation of the change will be discussed in the next chapter.

Chapter 4: Evaluation

4.1 Introduction

This chapter provides an overview of the planned framework and methodology for evaluating this change project. The Scottish and the South Australian projects have been used as benchmarks for this initial evaluation.

4.2 Evaluation Tools

It is worthy to mention that the overall goal of this project is to introduce PAs into the Irish healthcare system. The strategy adopted for achieving this objective is by setting up a pilot project. As part of this pilot project, USA-trained PA's will be introduced in various clinical settings in the identified pilot sites within Irish healthcare system for a defined period of time (two years). In order to evaluate the performance and impact of introducing this mid-level workforce, four six-monthly evaluation points were identified. It is planned that both quantitative and qualitative data will be collected at these evaluation points. As a result of the delays in implementation, these evaluations are yet to take place. However, the acceptance of the implementation strategy amidst all the rigours of the people aspect of change is a mark of significant success when measured against the benchmarks.

The primary data collection methods for qualitative data will be staff and stakeholder interviews conducted at the agreed evaluation points.

4.3 Change Outcomes

A summary of the expected outcomes of this change has been documented in Appendix F. It is hoped that on successful completion of the implementation phase of this project, the mid-level workforce will be better strengthened to deliver a more efficient and effective service to the patient population.

4.5 Summary

A major limitation of this project is the inability to fully deliver the planned changes during the agreed timelines. It is thus difficult to fully evaluate this project at the time of this publication. Full project evaluation will be carried out at the end of this project and will be published in subsequent version of this publication.

Chapter 5: Discussion & Conclusion

5.1 Introduction

In this final and concluding chapter, the author will discuss the strengths and limitations of this change project and the implications for management. A brief reflection on the project and key learning will also be shared.

5.2 Strengths and Limitations of the Project

A key strength of this project is that it addresses a current issue that is affecting the delivery of health service in this country. It is thus a timely and relevant change needed to ensure improved delivery of healthcare services. The reconfiguration of the health workforce is an issue that is currently being addressed in both the developed and the developing nations. Enovation in this area is needed now more than ever before as global health systems are going through the greatest change ever in history. This project also draws on real and practical experience from other health systems in the world. The change been sought is backed by real experience of other similar health systems as well as several research findings and studies.

This project is however an ambitious project. The initial timelines were not accurate measured and well thought out. The theory of change (HSE change model) was religiously followed but adequate proactive measures were not taken to deal with the potential risk of resistance to change and slow pace of change within the culture. A major limitation of this project therefore is the delay in the implementation phase. This resulted in changes in agreed timelines.

5.3 Implications of the Change for Management

This change is being undertaken concurrently with other change initiatives within the health system. It is thus vital that all changes taking place be guided by a wider strategic context in order to achieve a unified and more effective change.

The project impact assessment table in Appendix F illustrates the implications of this change effort for management. Generally speaking, the proposed workforce reconfiguration will still be consultant led and will be constituted of the same set and hierarchy of medical and surgical professionals. However, the new grade of clinicians being introduced will act as s

support group along this chain of hierarchy. An implication of this for management will be to clearly understand and manage the new dynamic, particularly the relationship between the PA, the supervising physician and other health professionals in the team.

5.4 Reflections on the Project

Having taken time to reflect on the overall project, I think that the change was too big to be undertaken within the specified time period. Change takes time. My approach to similar projects in future will be to attempt to break up the entire change effort into sizable chunks and take them one after the other. Alternatively, I will allocate a much longer project time for the project and spend more time in phases one and two.

On careful analysis of the events that took place during this project, I have been able to extrapolate some rules which I will describe as ‘The Immutable Rules of Change’. In other words, these rules seem to be consistent and rarely change in change management. The rules are; Change efforts are harder than they seem; Change takes time, patience is important; Resistance to change is real – be prepared and get as many people as you can on your side during the project initiation phase; If momentum is lost, motivation will diminish and failure kicks in; Do not underestimate the power of good communication and finally, Keep the vision always alive.

5.5 Conclusion

In the preceding chapters, the author has tried to present concisely the work undertaken as part of the requirements for the award of a Master of Science in Healthcare Management. This work however, is being undertaken not just as an academic exercise. It is a real change effort of vital significance to the national health system. It is still on-going and the author hopes to publish a follow-up report to this publication. The author also wishes to encourage other academics and health practitioners to join forces in research and in exploring innovative ways of enhancing the overall performance of the Irish health system, particularly with respect to workforce.

Change management theories are generic in nature. The actual methodology or techniques for change may vary from culture to culture and from organisation to organisation. Whereas several literatures on change management have emerged in the past few years, there is still need to continue to explore this important subject in order to achieve better and improved understanding.

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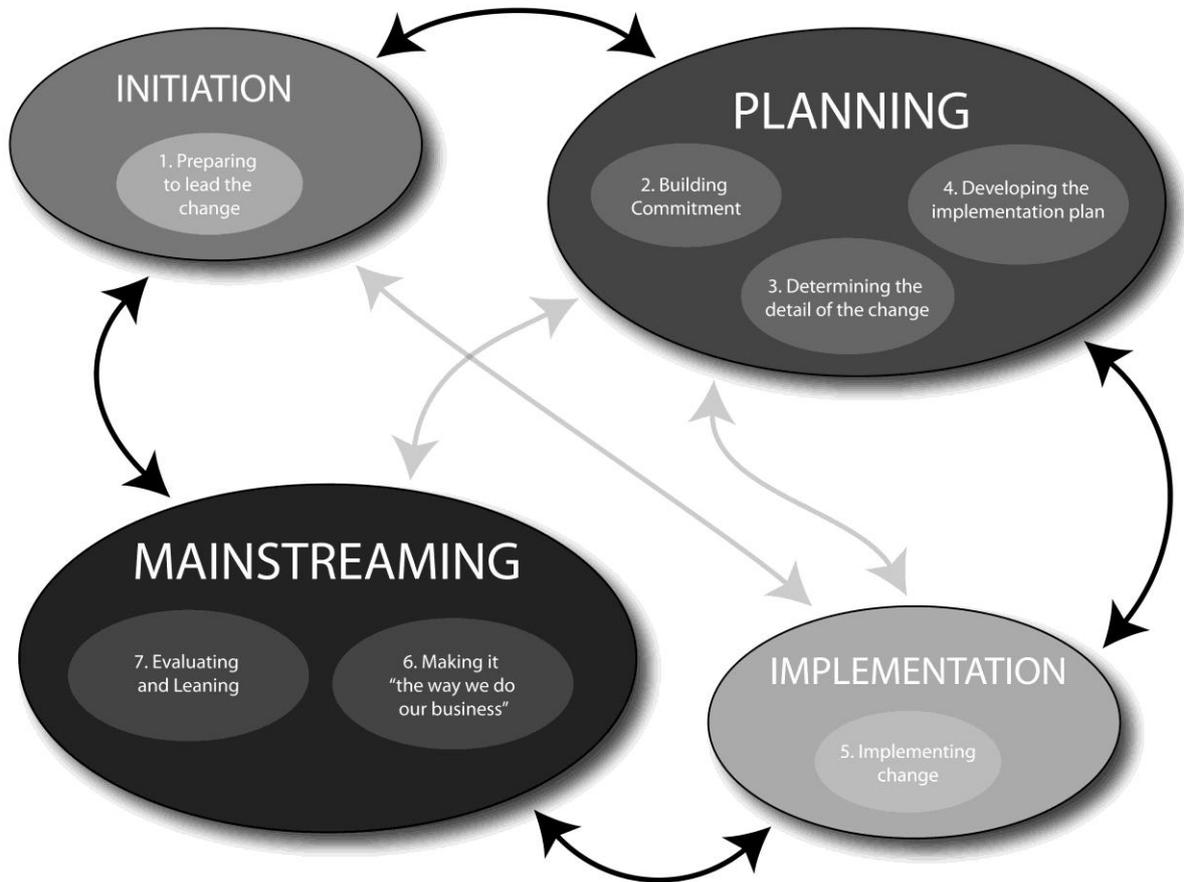
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Appendix A: HSE Change Model



Appendix B: Roadmap for Change

HSE Change Model Phase 1 Activities Map

Step	Activities/Inputs	Tools/ Techniques	Outputs
1.0 Preparing to lead change.	1.1 Identify what is driving the change and degree of urgency 1.2 Identify stakeholders and influencers 1.3 Assess readiness and capacity for change 1.4 Attend to organisational politics 1.5 Identify leverage points and opportunities for change 1.6 Perform initial assessment of the impact of the change 1.7 Outline initial objectives and outcomes 1.8 Agree resource requirements 1.9 Outline initial business case for change	Root Cause Analysis Stakeholder Analysis Swot Analysis Force Field Analysis Stakeholder Engagement Reduce The Intensity Of The Restraining Forces	Initial Business Case

HSE Change Model Phase 2 Activities Map

Step	Activities/Inputs	Tools/ Techniques	Outputs
<p>Step 2: Building Commitment</p> <p>Step 3: Determining The Detail Of Change</p> <p>Step 4: Developing The Implementation Plan</p>	<p>2.1 Build a shared vision</p> <p>2.2 Communicate the vision and business case for change</p> <p>2.3 Increase readiness and capacity for change</p> <p>2.4 Demonstrate that change is underway</p> <p>3.1 Assess the current situation against the future vision for change</p> <p>3.2 Feedback this analysis to key stakeholders</p> <p>3.3 Describe what needs to change</p> <p>4.1 Design the detail of the future state</p> <p>4.2 Assess the impact of the detailed design.</p> <p>4.3 Outline an agree the plan for implementation</p> <p>4.4 Complete detailed implementation /Project Plan</p> <p><i>Building alliance/support in RCSI (Meeting with SMT & Council deliberation) Meetings with all Manpower Managers Meetings with HSE HR/Director of Quality/Training & Development Team Meetings with selected hospital consultants Meeting with DOH Meeting with CEO's of private hospitals in the greater Dublin Region. Meeting with a selection of NCHD's Trip to Birmingham with key stakeholders Trip to USA Engage US Trained PAs with Irish links Constant communication</i></p>		<p>Completed HSE Change Project Templates</p> <p>Project Implementation Plan</p> <p>Gant Chart</p>

HSE Change Model Phase 3 Activities Map

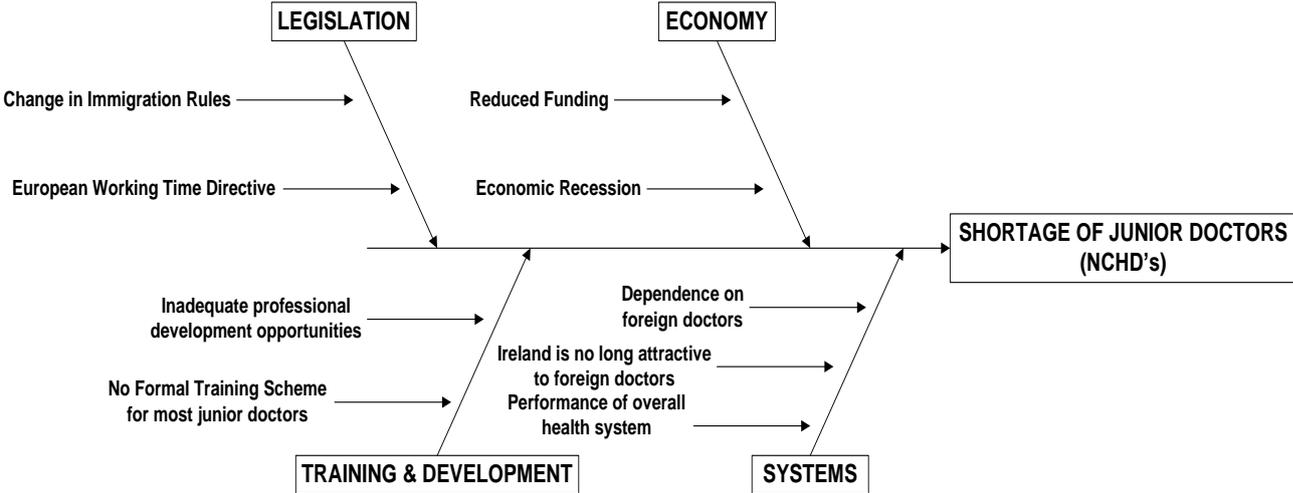
Step	Activities/Inputs	Tools/ Techniques	Outputs
Step 5: Implementing The Change	5.1 Implement the change 5.2 Sustain momentum		Detailed Project Reports

HSE Change Model Phase 4 Activities Map

Step	Activities/Inputs	Tools/ Techniques	Outputs
<p>Step 6: Making It ‘The Way We Do Our Business’</p> <p>Step 7: Evaluating And Learning</p>	<p>6.1 Acknowledge success and achievement</p> <p>6.2 Support integration of the change</p> <p>6.3 Ensure decision-making process supports change</p> <p>7.1 Building a system to refine and continuously improve</p> <p>7.2 Learn from the change process and establish best practice for change</p> <p>7.3 Review the temporary change support structures, systems and roles.</p>		

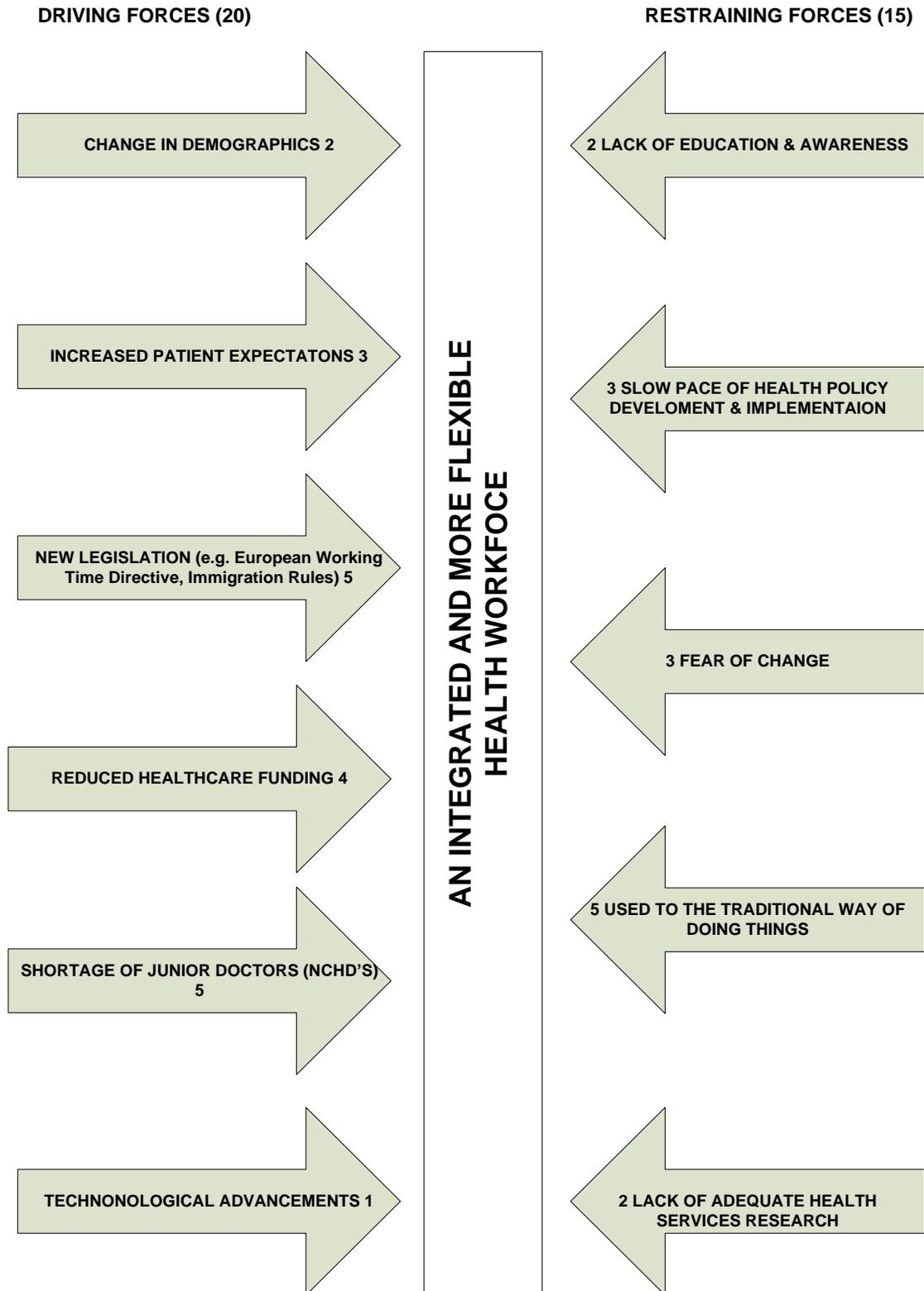
Appendix C: Cause and Effect Diagram (Fish Bone Diagram)

ROOT CAUSE ANALYSIS

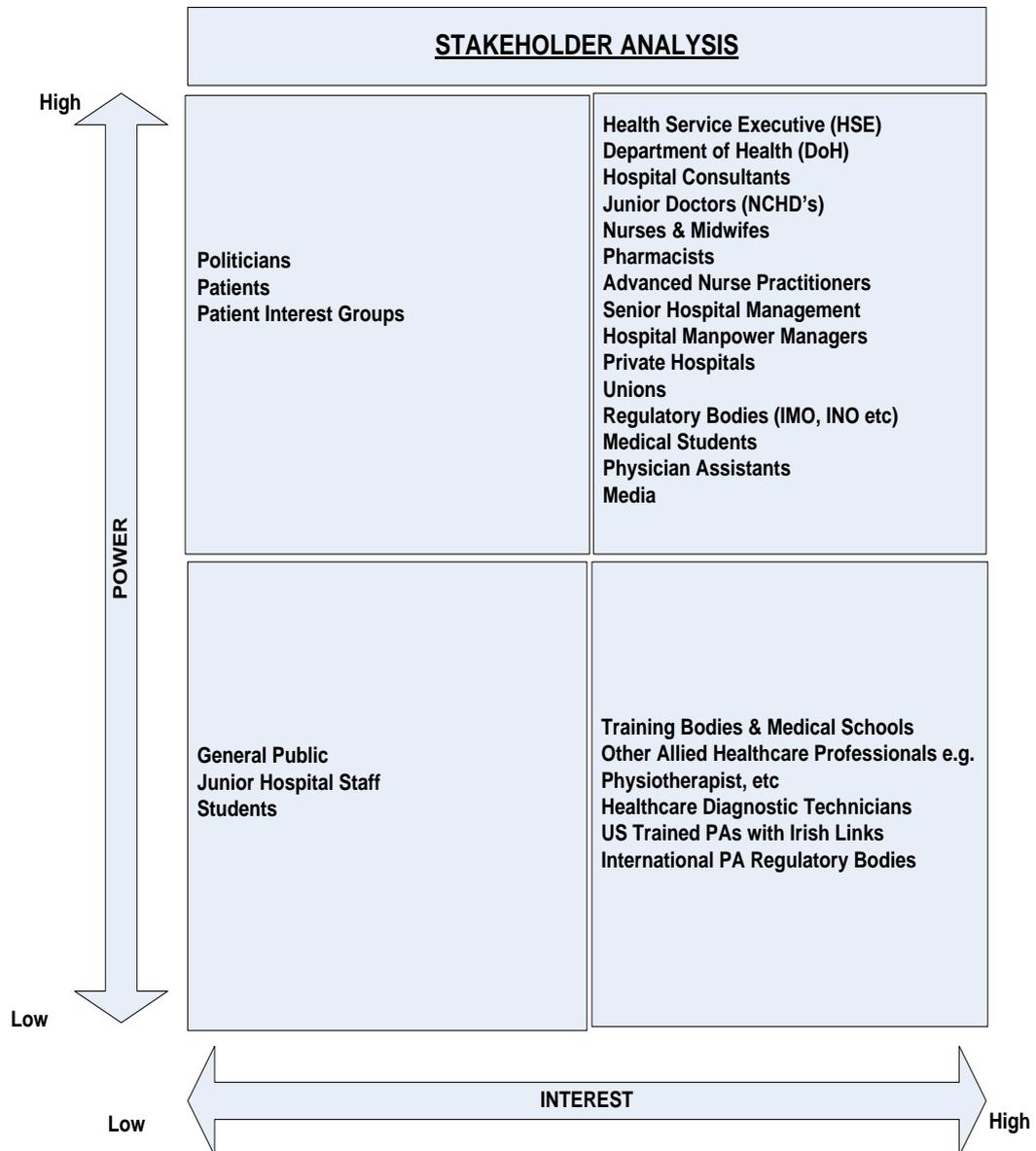


Appendix D: Force Field Analysis

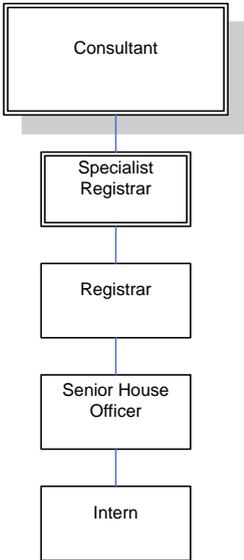
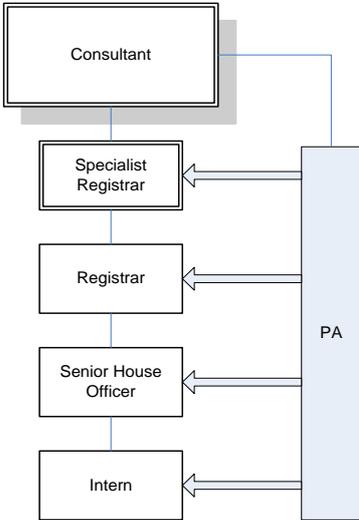
FORCE FIELD ANALYSIS



Appendix E: Stakeholder Analysis



Appendix F: Project Impact Assessment

CURRENT STATE	FUTURE STATE
<p>Behavioural:</p> <ul style="list-style-type: none"> • HSE/Hospital Management are under pressure. • Existing Staff are dealing with increased work load. • Patients are feeling frustrated due to inability to access care timely. 	<p>Behavioural:</p> <ul style="list-style-type: none"> • Reduced pressure for HSE and Hospital Management. • Reduced workload for medical workforce. • Improved patient satisfaction.
<p>Structural:</p> 	<p>Structural:</p> 
<p>Personal:</p> <ul style="list-style-type: none"> • External observer • Involved in overall service reconfiguration. • Influencing change 	<p>Personal:</p> <ul style="list-style-type: none"> • Actively involved in change management. • Ensure stability of process and governance framework. • Document lessons learned
<p>Cultural:</p> <ul style="list-style-type: none"> • No recognition of the PA role. • Lack of understanding of the new concept. • Resistance to change 	<p>Cultural:</p> <ul style="list-style-type: none"> • Adequate recognition of the role within the health system. • Recognition of role and fit within the medical workforce. • New reality will be embedded in the system.

Appendix G: A timeline of the PA Profession

A Timeline Of The Profession	
1650	Feldshers, originally from Germany military medical assistants, are introduced into Russian armies by Peter the Great in the 17 th century.
1778	US congress provides for a number of hospital mates to assist physicians in the provision of patient care modelled after the ‘loblolly boys’ of the British Royal Navy.
1803	Officiers de santé are introduced in France by René Fourcroy to help alleviate health personnel shortages in the military and civilian sectors. They were abolished in 1892.
1891	The first company for ‘medic’ instruction is established at Fort Riley, Kansa.
1898	The practicante is introduced in Puerto Rico (circa). The role phased out in 1931.
1930	First ‘physician assistant’ (PA) in the United States (urology) at Cleveland Clinic is described in the literature.
1940	Community health aides are introduced in Alaska to improve the village health status of Eskimos and other Native Americans.
1959	U.S. Surgeon General identifies shortage of medically trained personnel.
1961	Charles Hudson, in an editorial in the <i>Journal of the American Medical Association</i> , calls for a ‘midlevel’ provider from the ranks of former military corpsmen. WHO begins introducing and promoting healthcare workers in developing countries (e.g. médecin africain, dresser, assistant medical officer, and rural health technicians)
1962	Dr. Henry McIntosh, cardiologist at Duke University, trains local firemen in emergency procedures for the community; in exchange, off-duty firemen staff the cardiac catheterization laboratory. Former Navy hospital corpsmen are hired for similar roles and are classified as <i>Physician’s assistants</i> by Duke’s payroll department, which is considered the first formally recognised use of the name.
1965	First PA call enters Duke University. White House conference on health discusses the use of former military corpsmen/medics as <i>assistant medical officers</i> .
1966	Barefoot doctors in China arise in response to Chairman Mao’s purge of the elite and intellectual. This action sent many physicians into the fields to work, leaving peasants without medical personnel. The child health association program begins at the University of Colorado, which serves as the origin of the nurse practitioner (NP) profession and PA specialty. Allied Health Professionals Personnel Act (Public Law 751) promotes the development of programs to train new types of primary care providers.
1967	First PA class graduates from Duke University.
1968	American Academy of Physician Assistants (AAPA) was established. Health Manpower Act (Public Law 90-490) funds the training of a variety of healthcare providers. <i>Physician Assistants</i> , Volume 1, the first journal for PAs was published. First conference on PA education was held at Duke University. This event precedes the Association of Physician Assistant Programs (APAP).
1969	First class graduates from the University of Colorado’s Child Health Associate PA program.

1970	<p>Kaiser Permanente becomes the first health maintenance organisation (HMO) to employ a PA.</p> <p>First graduates from the Medex Northwest program at the University of Washington.</p> <p>American Registry of Physician's Assistant is founded by Robert Howard, MD, at Duke University.</p>
1971	<p>American Medical Association (AMA) recognises the PA profession and begins work on national certification and codification of its practice characteristics.</p> <p>Comprehensive Health Manpower Training Act (Public Law 92-157) contracts for PA education and development. Congress includes \$4 million for establishing new PA educational programs in 1972 (Health manpower Educational initiative Awards).</p> <p>First class graduates from the university of Washington Medex Northwest program.</p> <p>Essential of an Accredited Educational program for the Assistant to the primary care physician, the minimum standards for PA programme accreditation are adopted by AMA.</p>
1972	<p>The physician's Assistant: Today and Tomorrow, by Alfred Mitchell Sadler, Blair L. Sadler, and Ann A. Bliss, is published; the first book written about the PA profession.</p> <p>The Association of physician Assistant programs (APAP) is established.</p> <p>Alderson-Broadus College's first 4-year program graduates its first class.</p> <p>"The essentials" accreditation standards for PA programs are adopted, and the joint Review Committee on Education programs for the physician Assistant (JRC-PA) is formed to evaluate compliance with the standards.</p> <p>Federal support for PA education is enacted by the Health Resource Administration.</p> <p>The Medex Group is established at the University of Hawaii by Richard Smith.</p> <p>International PA-type programs in the pacific, Asia, Africa, and South America begin development.</p>
1973	<p>First AAPA Annual conference is held at Sheppard Air force Base, Texas, with 275 attendees.</p> <p>AAPA and APAP establish a joint national office in Washington, DC.</p> <p>National Commission on Certification of physician Assistants (NCCPA) is established.</p> <p>National Board of Medical Examiners administers the first certifying examinations for primary care PA's.</p> <p>First postgraduate program for PAs is started at Montefiore Hospital by Richard Rosen, MD</p>
1974	<p>AAPA becomes an official organization of the JRC-PA. the committee reviews PA and surgeons assistant programs and makes accreditation recommendations to the committee on Allied Health Education and Accreditation.</p> <p>The American college of surgeons becomes a sponsoring organization of the JRC-PA.</p> <p>From 1974- 1977, 150 PAs are recruited to work on the Alaska pipeline-the largest scale employment of PA in the private sector.</p>
1975	<p><i>The physician Assistant: A National and local Analysis, by Ann Suter Ford, is published.</i></p>
1976	<p>Federal support of PA education continues under grants from the Health Professions Educational Assistance Act (public law 94-484).</p>

1977	<p><i>The New Health Professionals: Nurse practitioners and Physician's Assistants</i>, by Ann Bliss and Eva Cohen, is published.</p> <p><i>The physician's Assistants: A Baccalaureate Curriculum</i>, by Hu Myers, is published.</p> <p>AAPA Education and Research Foundation (later renamed the physician Assistant Foundation) is incorporate to recruit public and private contributions for student financial assistance and to support research on the PA profession.</p> <p>Rural Health Clinic Services Act (public Law Medicare reimbursement of PAs as the official AAPA publication).</p>
1978	<p><i>The physician's Assistant: Innovation in the Medical Division of Labour</i>, by Eugene Schneller, is published.</p> <p>AAPA House of Delegates becomes the policy making legislative body of the academy.</p> <p>U.S Air force begins appointing PAs as commissioned officers.</p>
1979	Graduate Medical Education National Advisory Council estimates a surplus of physicians and nonphysician providers in the near future.
1980	<p>The AAPA political action committee is established to support candidates for federal office who support the PA profession.</p> <p>Formation of the Veteran's Caucus of the AAPA.</p>
1981	<i>Staffing primary care in 1990: physician Replacement and cost savings</i> , by Jane Cassels Record, documents that PAs in HMO settings provide 79% of the care of a primary care physician, at 50% of the cost.
1982	<i>Physician Assistants: Their Contribution to Health Care</i> , by Henry Perry and Bena Breitner, is published.
1984	<i>First Annual Report on physician Assistants Educational Programs in the United States</i> , by Alternatives in Health Care Delivery: <i>Emerging Roles of Physician Assistants</i> , by Reginal D. Carter, is published.
1985	<p>AAPA's first Burroughs Welcome Health Policy Fellowship for PAs is created.</p> <p>Membership of the AAPA surpasses the 10,000 mark. Membership categories are expanded to include physicians, affiliates, and sustaining members.</p> <p>University of Colorado PA program awards a master's degree to their graduates, the first master's for PA education.</p>
1986	AAPA succeeds in legislative drive for coverage of PA services in hospitals and nursing homes and for coverage of assisting in surgery under Medicare part B (omnibus Budget Reconciliation Act [public law 99-210]).
1987	<p>National PA Day, October 6, is established, coinciding with the anniversary of the first graduating class of PAs from the Duke University PA program 20 years earlier.</p> <p>The AAPA national headquarters in Alexandria, Virginia, is dedicated.</p> <p>AAPA publishes the <i>journal of the America Academy of physician Assistants</i> (JAAPA). The editor selected is the first PA hired as AAPA professional staff.</p> <p>Additional Medicare coverage of PA services (in rural underserved areas) is approved by congress.</p>
1991	<p>Us Navy PAs are commissioned.</p> <p>AAPA assumes administrative responsibility of the Accreditation Review Committee on Education for the physician Assistant (ARC-PA) (formerly the JRC-PA)</p> <p>Clinician Reviews debuts, the first clinical journal to target PAs and NPs. The publication is created, owned, and managed by PAs.</p>
1992	U.S. Army and Coast Guard PAs are commissioned.

	The Canadian National Forces inaugurates a Canadian PA.
1993	A total of 24, 600 PAs are active practice in 50 states, territories, and the District of Columbia.
1995	Physician Assistants in the Health Workforce, 1994(report of the Advisory Group on physician Assistants and work force), which develops the current definition of the PA, is published.
1996	The AMA grants observer status to the AAPA in the AMA House of Delegates
1997	Passage of the Balanced Budget Act of 1997 (public Law 105-33) changes level of reimbursement of PA services under Medicare.
1998	Mississippi becomes the last state to pass PA enabling legislation. The APAP research institute is founded.
1999	<i>Perspectives on physician Assistant Education</i> becomes a peer-reviewed indexed journal. Manitoba creates legislation for the introduction of PAs.
2000	The APAP determines that the master's degree is the appropriate degree for PA education The ARC-PA becomes the independent accrediting agency for PA prescribing legislation. NCCPA converts the physician Assistant National Certification (PANCE) and the physician Assistant National Recertification Examination to computer-based administration.
2001	A record 4,267 PAs sit for the PANCE (91.5% pass rate).
2002	The 35th anniversary of the first graduation of PAs is chronicled in a special edition of <i>JAAPA</i> . The AAPA estimates that there are approximately 45,000 clinically active PAs in American medicine. The APA celebrated its 30 th anniversary. The number of accredited PA programme is 134.
2003	PAs are introduced in England. The centres for Medicare and Medicaid services (CMS) expands the ability of PAs to have an ownership interest in a practice under the Medicare program. A PA program at Base Borden in Ontario becomes the first accredited PA program in Canada. The Netherlands starts three PA programs.
2004	The number of clinically practicing PAs in the United States reaches 50, 121. Two PAs, Karen Bass of California and Mark Hollo of North Carolina, become the first PAs to be elected to state legislatures. PA organizations draft shared definition of PA competencies. The participating organizations are the AAPA, APAP, ARC-PA, and NCCPA. The 33 rd annual PA conference in Las Vegas, Nevada, boasts the largest attendance to date with a total attendance more than 10, 500.
2005	The Association of Physician Assistant Programs (APAP) changes its name to the Physician Assistant Education Association (PAEA) and relocates to offices separate from the AAPA in Alexandria, Virginia. The Netherlands graduates its first class of PAs. University of Herefordshire, England inaugurates first PA program in the United Kingdom. Eugene Stead, MD, a founder of the PA profession, dies at the age of 96.
2006	Rear Admiral Mike Milner becomes the first PA flag officer. ARC-PA issues the third edition of accreditation standards.

	<p>The state of Ohio passes legislation allowing PAs to prescribe, meaning 49 states, the District of Columbia, and Guam allow PAs to prescribe.</p> <p>Scotland introduces 12 PAs as a pilot program.</p>
2007	<p>The United States celebrates the 40th anniversary of the U.S. PA movement. An estimated 65,000 U.S. PAs are clinically active.</p> <p>The PAEA celebrates its 35th anniversary.</p> <p>The society for the preservation of physician Assistant History, inc. becomes a supporting organization of the AAPA.</p> <p>HealthForceOntario, an initiative by the Ontario Ministry of Health, begins a pilot program introducing PAs in the province.</p> <p>Indiana passes legislation allowing PAs to prescribe. All 50 states, the National Human Genome Research institute, and other genomics experts to define how PAs could introduce genomics in patient care.</p>
2008	<p>Manitoba begins the first civilian Canadian PA program.</p> <p>ARC-PA award initial accreditation to the first two postgraduate PA programs- the University of Texas M. D. Anderson Cancer centre PA postgraduate program in Oncology (Houston), Surgical Residency for PAs (Baltimore).</p> <p>The Bureau of Labour Statistics identifies the PA profession as one of 30 occupations expected to grow fast over the next decade.</p> <p>Number of PAs in active practice in the United States Exceeds 70, 000.</p> <p>William Leinweber is appointed the sixth Executive Director of the AAPA.</p>
2009	<p>The number of the U.S. PA graduates is approximately 5,640.</p> <p>The AAPA and the PAEA hold a summit Meeting on the PA clinical doctorate, and declare their opposition to entry-level doctorate degree for PA education.</p> <p>Australia begins the first PA program at the University of Queensland.</p> <p>The number of PA programs in the world totals 160:145 in the United States, 1 in Australia, 4 in England, 3 in Canada, 4 in the Netherlands and 3 South Africa.</p> <p>The NCCPA announces that it will offer specialty certification examinations in five clinical specialties by 2011.</p>
2010	<p>The estimated number of clinically active PAs: United States, 75,000; Australia, 15; Canada, 100; Great Britain, 80; the Netherlands, 200.</p>
Source	(Hooker et al., 2010)

Appendix H: Physician Assistants Movement (Hooker et al., 2010)

PHYSICIAN ASSISTANT MOVEMENT, 2010		
Country	Number of Clinically Active PA's	Number of PA Programs
Australia	20	2
Canada	150	3
Netherlands	200	4
United Kingdom	75	4
United States	73,500	145
South Africa	Unknown	2
New Zealand	Unknown	Unknown
Total (Estimated)	>73,945	160
<i>Note: The figures may have changed at the time of this publication</i>		

‘Great ability develops and reveals itself increasingly with every new assignment.’

Baltasar Gracian