

## Improving the clinic journey of Respiratory Outpatient's utilising an audit study

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# Improving the clinic journey of Respiratory Outpatient's utilising an audit study

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## **Abstract**

Often as healthcare providers, we fail to step back and look at how we communicate with patients. Multiple governmental and organisational reports worldwide cite the strong correlation between poor communication and poor healthcare experiences. The foundations of healthcare are built on communication, yet its vital role in healthcare is often overlooked in terms of its significance to patient-centred care. The overall aim of this project was to improve the clinical journey of Respiratory outpatient's. This was achieved by implementing an easy to read Respiratory appointment letter which contains both, the patient's Pulmonary Function Test appointment, and their outpatient appointment on one single page. A literature review was conducted which enabled the writer to apply international best practice and guidelines on patient written communication templates. The HSE change model was utilised which enabled the writer to structure the change process in a systematic and methodical manner. Evaluation of the change entailed quantitative data collection and analysis to ascertain whether the objectives initially set out were achieved. Evaluation was utilised to assess the impact of implementing such an intervention which demonstrated an improvement in the patient's clinical journey post implementation.

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## **1.0 Introduction**

As established in various international reports, clear communication is central to the provision of safe reliable and quality healthcare. Every healthcare interaction depends on effective communication, from making an appointment, registering for a visit, to describing symptoms and understanding healthcare instructions and information. In healthcare, we often fail to realise that the patients we serve may not have a medical background and hence the style and wording utilised in written appointment instructions and communication should be regularly reviewed.

A plethora of evidence worldwide highlights the correlation between ineffective communication and healthcare experiences and outcomes. Healthcare organisations thus have a responsibility to use patient-centred strategies to reach populations that may not receive or understand verbal and written health information that is often presented in English using complex medical jargon. International guidelines for designing written communication templates are available for healthcare organisations to apply, yet adoption of such best practice is not always standard in the majority of healthcare organisations.

The proposal contained in this dissertation which is spread over five chapters relates to improving Respiratory outpatient's clinical journey by changing the content and design of information and instructions communicated to such patients on their appointment letter. Currently, Respiratory patients who require a Pulmonary Function Test (PFT) and an outpatient (OP) consultation on the same day are sent each appointment on separate letters (Appendix 1 & 2). Patients when they receive the two separate letters often perceive both appointments as being very separate in

nature which causes confusion amongst patients each week at the clinic. The writer proposes to introduce a newly designed appointment letter which will convey both the PFT and OP Respiratory appointment on one single page. This will ensure clear, unambiguous appointment instructions are given to the patient, so patients perceive both appointments as correlated rather than separate and distinct. The writer will then analyse the subsequent effect the newly implemented appointment letter has on the patient's clinical journey in terms of reduced movement of the patient from a process mapping perspective, reduced waiting time in both the PFT Lab and the Outpatient's Department (OPD) hence resulting in a reduction in overall patient turnaround time (TAT), thus creating a smooth flow of patients through the system. In this chapter, the writer outlines the organisational context and rationale for carrying out the organisational development (OD) project. The associated aims and objectives are defined, and the writer's role in the project will be explained.

## **1.1 Organisational Context**

The organisation whereby the OD change is taking place is an inner city Voluntary Hospital, which serves on average 3,200 Respiratory patients in the OPD annually. When a patient is referred to the Respiratory OP Clinic for assessment, the referral letter is first registered on the Inpatient Management System (IPMS) software by an administrator in the Central Appointments Department. The referral is then sent to the Respiratory Consultant for triage whereby the Consultant determines the next course of action for the patient in question. In the vast majority of cases, the Consultant will triage the referral as urgent or routine for an OPD consultation and

PFT. The Consultant's secretary then sends the triaged referral back to the Central Appointments Department.

Once the referral is received back in the Central Appointments Department, the administrator will book the Respiratory patient for a PFT on the IPMS application (for example; on the 20<sup>th</sup> November 2015 @ 9.15 am). To print this appointment letter, the administrator must select the PFT appointment letter from a drop down list of appointment letter templates. Once the administrator selects the PFT appointment template, the PFT appointment letter is sent to a centralised office printer.

The PFT appointment letter currently sent to the patient is overly complex, containing unnecessary tables of information irrelevant to the patient. The most relevant information, the patient's appointment date, time and location of the PFT Department are all located at the very bottom of the appointment sheet (Appendix 1).

Once the administrator has printed the PFT appointment offer letter, he/she will then proceed to book the same patient in for their OP appointment with the Respiratory Consultant. The administrator books the OP consultation on the same day as the PFT but at a later time (for example; 20<sup>th</sup> November 2015 @ 10 am). The administrator proceeds to print out the standard OP consultation appointment letter which details the OP consultation date, time and Consultants name along with information regarding the cancellation of appointments (Appendix 2).

When the administrator has printed both the PFT and OP consultation appointment letters, he/she must leave their desk, go to the centralised office printer immediately

to ensure both letters are kept together and posted to the patient in one envelope. The movement of the administrator to and from the centralised printer is because multiple users are making various OP appointments simultaneously. The constant printing to one location can result in the PFT appointment letter and the OP appointment letter to become separated. Once the administrator has the two separate appointment letters printed both are folded together, put into an envelope and sent to the patient.

### ***Consequences on Respiratory patient's clinical journey***

The application of two different overly-detailed appointment letters sent to Respiratory patients tends to result in a high proportion of patients turning up to the OPD first, without their PFT complete. From experience of working in the OPD, when the patient registers at the front desk for their OP consultation, the clerk will ask the patient if they had a PFT done. Of the patients attending the clinic who require a PFT pre-consultation, approximately three in ten of such patients arrive in the OPD without their PFT complete. From experience, most patients never look at the second appointment sheet (the PFT appointment letter) and few honest patients will say they just didn't understand the PFT letter. For these patients, this essentially means the patient has missed their PFT appointment slot, however, as the test is required for the OP consultation, the patient is sent to the PFT Lab to complete the test.

Due to the organisation being an inner city Voluntary Hospital with little room for expansion, departments which complement each other are often located in different buildings. This results in patients having to walk long distances to get from one

department to another. Travelling from the OPD to the PFT Lab involves the patient leaving the OPD, walking outside up to the top of the street, crossing a main road, entering the main hospital building and then taking the lift to the second floor to the PFT Lab (Appendix 3).

The patient then takes a seat in the PFT waiting room until called by the PFT Technician. Once the patient has completed their PFT, the Technician will give the patient an instant print out of their result. The patient must then walk back to the OPD, re-queue and notify the clerk at the registration desk that they are back. The clerk will ask the patient to hand over the PFT result so it can be filed in the patient's chart.

The unnecessary movement of such patients between the OPD, PFT Lab and back to the OPD again is a direct result of the design and complex layout of information displayed on the patient's PFT appointment letter which difficult to understand and follow. Hence, this results in patients arriving in the wrong place at the wrong time thus creating a bottleneck, variation in waiting times and extra non-value added activities/steps to be endured in the patient's journey (Appendix 4).

## **1.2 Rationale for selecting the project**

It is widely known that a major inefficiency in healthcare operations is due to poor management of resources. Healthcare Providers (HCP's) often fail to recognise that the patient's we communicate with may not have a medical background, have limited English or have difficulty in reading information. Hence adjusting the communication

strategy to ensure patients fully understand what is required of them (where to go, what to do, etc.) is imperative.

Each week from mere observation numerous patients arrive in the OPD without their PFT complete. It was determined that something must be wrong in the communication process if it is directly observable in patient's behaviour whereby they arrive at the OPD first without their PFT complete. As a result, such patients have missed their PFT slot, but as the test is required the patient has to walk from the OPD to the PFT Lab and back again, hence incurring extra non-value added activity. When one relates to non-value added activity such is often defined as process steps that the customer/patient is not willing to pay for. In terms of healthcare settings, non-valued added activities are waiting, queuing, walking/motion of patients, transportation and rework all of which can tarnish a patient's perception of healthcare service and quality. For such patients who have mistakenly misunderstood the information contained in the two appointment letters enduring additional non-value added steps (walking, re-queuing) in their clinical journey can lead to longer waiting times and turnaround times (TAT) for such patients (compare process map appendix 4 and appendix 5).

As one can see from appendix 3, the walk from the OPD to the PFT Lab and back again is quite substantial. Furthermore, it is necessary to consider that many Respiratory patients have chronic conditions such as Chronic Obstructive Pulmonary Disease (COPD) and hence have difficulty in walking from one department to another. This often results in the need to call on porters or healthcare assistants to wheelchair a patient from the OPD to the PFT Lab and back again to the OPD.

The writer also applied Kurt Lewin's Force Field Analysis tool which further identified the rationale and how the forces promoting change outweigh those against change, thus suggesting the urgency and need for reform in this area (Appendix 6).

### **1.3 Aim and Objectives**

#### **1.3.1 Aim**

The aim of this OD project is to improve the clinical journey for Respiratory OP's by designing and implementing a simplified Respiratory OP appointment letter by January 2016.

#### **1.3.2 Objectives**

1. By March 2016, 100% of patients attending the Respiratory clinic who require a PFT will arrive in the OPD with their PFT complete.
2. By March 2016, waiting time in the PFT Lab which is a functional bottleneck will be reduced by approximately 15 minutes.
3. By March 2016, the number of non-value added activities/steps in the Respiratory patient's OP clinical journey will be reduced by two.
4. By March 2016, there will be a decrease in the average TAT for Respiratory patients attending the clinic by approximately 20 minutes.



#### **1.4 Role of the student in the process**

The role of the student is central to the entire change process as the student will act as the main lead and oversee the change process by; initiating, planning, implementing and mainstreaming the change. The student will work as an auditor by observing which patients diverge from what is required of them to do on their appointment letter. The student will observe, record and analyse the arrival and waiting times of such patients attending the Respiratory clinic who require a PFT and OP consultation. The main function of the student is to conduct an observational audit, measure current performance, make improvements, remeasure and sustain improvements.

The student will act as the main communication link ensuring all stakeholders are included in the initiating and planning stage and are aware of occurrences at every stage of the change process. Effective two-way communication ensures the student who is implementing the change has all the relevant stakeholders' perspectives on the OD initiative. Thus establishing from the outset a rapport with all relevant stakeholders will be fundamental for the student to avoid any resistance that may upset the outcome. Identifying a change champion as noted by Chrusciel (2008) encourages a sense of change ownership amongst staff and increases the probability of project sustainability.

The writer anticipates that any change can be met by resistance and could make or break and impact immensely on any project implementation as noted by Bovey and Hede (2001). However on the other hand, as noted by Ford, Ford and D'Amelio (2008) any resistance should be embraced as resistance to change can be positive

as it can lead to open discussion and conversation and should be viewed as progress. The writer acknowledges that although management in a change initiative is important, Gill 2003 states leadership which is the ability to communicate and bring people along with you by empowering and supporting staff makes the difference in delivering change successfully. The student thus acknowledges that utilising and relying on one's referent power with the belief and desire to do what needs to be changed, is more likely to achieve individuals' commitment to the change project. Likewise, the student notes that successful change is not only due to a good change agent but also comes from all staff involved directly and indirectly in the change process.

## **1.5 Summary and Conclusion**

In this chapter, the organisational context and rationale for change outlined details the need for appropriate action to be taken to tackle the existing situation. The generation of the OD project aim provides the writer with a clear purpose and direction while the generation of objectives ensures the writer achieves project milestones as the OD initiative progresses.

The following chapter, chapter two, will detail the main themes connected to the literature review which were extracted from selected articles. The review themes will provide a critique of the literature and further substantiate the motivation for change.

## **2.0 Literature Review**

### **2.1 Introduction**

Prior to commencing the OD project the writer needed to conduct a literature review to gain an in-depth understanding of the topic area. A refined search strategy will yield the pertinent background to the existing literature, highlight current thinking and underpin the reasons for change going forward.

### **2.2 Research strategy**

With access to a wide range of research databases, the writer yielded a lot of worthy publications from Emerald, NCBI Pub-Med (U.S. National Library of Medicine National Institutes of Health), MEDLINE (Pub Med) and Web of Science databases. Institutional and organisational web pages containing noteworthy research documents were also reviewed, such as publications available from the Institute of Medicine (IOM), the Joint Commission International (JCI) and the National Health Service (NHS) for Innovation and Improvement (a source of evidence-based research and policy analysis for improving healthcare in the U.K). The application of Google Scholar was also devised which produced some significant publications relevant to this subject matter. Similarly, publications from government agencies and reports pertaining to healthcare communication were also analysed.

The search terms used were, "Healthcare communication", "Healthcare provider and patient relationship", "communication barriers", "unclear communication on health outcomes", "healthcare communication technologies" and "healthcare

communication innovations". Articles selected are dated between 1996 and 2015. The writer felt it necessary to look this far back in order to gain a better understanding and background of the studies. Thirty-five of the articles were particularly helpful from these searches. The literature originated from Australia, Canada, Great Britain, Ireland, the Netherlands, New Zealand and the United States. The literature highlighted three themes of which are discussed in the next section of this paper.

### **2.3 Patient Communication Barriers and Outcomes**

There is a growing body of literature that recognises the importance of communication between HCP's and the patient. The publication of, "To Err Is Human: Building a Safer Health System" (Kohn, Corrigan & Donaldson, 2000) and, "Crossing the Quality Chasm" (IOM, 2001) stress that good communication is critical to ensuring safe and reliable care. Communication itself as defined by the Oxford English Dictionary is, "The imparting or exchanging of information by speaking, writing, or using some other medium" ("Communication", 1989). Effective communication extends this concept in that the transmitted content is received, understood and acted upon by someone in the way it was intended. Hence, the importance of clear, unambiguous communication between HCP's and the patient is often an area which is overlooked in terms of its significance to ensuring safe outcomes and quality patient-centred care.

Jakštienė, Susnienė and Narbutas (2008) claim that research by psychologists has proven that the perception of information when communicated to individuals

(whether verbal or written), the way such is filtered and processed upon by humans is determined by a multitude of aspects. Such aspects include an individual's culture, ethnicity, age, literacy level and socioeconomic background, all of which can act as potential barriers in the communication process between HCP's and the patient.

According to Schyve (2007), low health literacy levels, cultural barriers, and language or limited English proficiency (LEP) have been coined as the three main threatening factors to effective healthcare communication. In examining health literacy as a factor, Selden, Zorn, Ratzan and Parker (2000) define health literacy as, "The degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions and actions" (p. ix). A key point in this definition is the behavioural component associated with health literacy which influences healthcare experiences and outcomes. This aspect will be further discussed in-depth in the latter of this section.

The most recent research in relation to health literacy statistics was conducted in Europe. Sørensen et al., (2015) analysed health literacy across eight E.U. countries of which Ireland was included in the study. The study results for Ireland indicated that 10.3% of the population had inadequate health literacy, 29.7% had problematic health literacy, 38.7 % had sufficient, and 21.3% had excellent health literacy. Such statistics highlight that limited health literacy represents an important challenge for health policies and practices across Europe and therefore is an important factor to consider when developing public health strategies and communicating with patients.

The second key barrier in the HCP-patient communication relationship as cited by Schyve (2007) is that of cultural differences. To define culture we rely primarily on Leininger's definition which was originally grounded in the transcultural nursing field upon which others concerned with the importance of culture in healthcare practice continue to build (Maier-Lorentz, 2008; Racher & Annis, 2007). According to Leininger (2002), "Culture refers to the learned, shared and transmitted knowledge of values, beliefs, and lifeways of a particular group that are generally transmitted inter-generationally and influence thinking, decisions, and actions in patterned or particular ways" (p. 47). Singleton and Krause (2009) claim that cultural influences on patient health beliefs and behaviours can be found in patients' perceptions of preferences, understanding, reasoning and communication norms. For example, the written date of a healthcare appointment in the United States of 09/02/2016 means the appointment will take place on the 2<sup>nd</sup> of September 2016. This written date interpreted by a British or Irish national would be the 9<sup>th</sup> February 2016.

The third component which may impede effective HCP-patient communication is language differences or LEP. With the ease in movement of individuals across national boundaries, countries worldwide (including Ireland) are becoming increasingly heterogeneous and monolingual markets are rare (Holmqvist, 2009). Hence, healthcare organisations need provisions in place to anticipate this growing trend.

In its entirety for effective communication to occur it must be comprehended by both participants. It is usually bi-directional between participants and enables both participants to clarify the intended message. In the absence of comprehension,

effective communication does not occur thus the provision of healthcare ends or proceeds only with errors, poor quality, poor patient experiences and risks to patient safety (Schyve, 2007). This leads to the notion which is analysed and studied in-depth regarding the relationship between communication breakdowns (due to culture, language differences or health literacy reasons) and healthcare outcomes.

Despite Schyve (2007) citing health literacy, cultural differences, and language as three separate, distinct threatening factors to effective communication, one could argue that the author overlooks the fact that cultural and language differences are in fact intertwined and contribute to health literacy levels. This point is further substantiated by Shaw, Huebner, Armin, Orzech and Vivian (2009) who contest factors such as culture, language, and health literacy should not be viewed in isolation as three separate, distinct factors. The authors articulate that essentially one's culture and language determine and influence an individual's health literacy level which consequently results in a patient's ability to understand and act as required. Likewise in assessing healthcare communication Parker, Ratzan and Lurie (2003) highlight health literacy (which is determined by culture and language proficiency) is the main communication barrier in the HCP-patient communication process and the need for researchers to analyse the correlation between health literacy and healthcare outcomes/patient experiences.

In assessing the relationship between health literacy and healthcare outcomes the writer encountered an abundance of literature detailing research in this area. A plethora of international evidence highlights the linear correlation between health literacy and a health consumer's ability to function within healthcare settings, as well

as the ability to understand prescriptions, written health information and chronic disease management (Adams et al., 2009; Gazmararian, Williams, Peel & Baker, 2003; Schillinger et al., 2002). Baker et al. (2004) noted that patients with low literacy levels often did not attend (DNA) their OP appointments post discharge. The findings showed such patients with low literacy levels failed to understand their discharge plan and appointment letters communicated for OP follow up. Similarly, Gazmararian et al., (2003) assessed over 635 patients who were supposedly self-managing their chronic illness. Patients aged 65 and over underwent a short test of functional health literacy in which demographic information was also collected during the in-person survey. Knowledge of disease was assessed by questions based on key elements in educational materials during a telephone survey. Overall, 24% of patients had inadequate, and 12% had marginal health literacy skills. Further investigation of the 24% cohort of patients with inadequate health literacy highlighted that a significant proportion of these individuals had more hospital admissions, and OP follow up's for their illness management than their counterparts who were identified as having sufficient health literacy.

On the other hand, Paasche-Orlow and Wolf (2007) articulate that such studies which report findings on the direct correlation between low literacy and poor health outcomes should be approached with caution. Paasche-Orlow and Wolf (2007) deem it should be recognised that limited health literacy is strongly associated with other socioeconomic indicators, including educational attainment, psychological makeup, race/ethnicity, and age. Such associations make it difficult to discern the independent effect of health literacy from the complex relationships known between these latent and evolving traits that are also interrelated themselves. Hence the



limitations of reports suggesting the straight correlation between health literacy and poor health outcomes are based on a direct cause and effect schema.

Paasche-Orlow and Wolf (2007) articulate the need for a more systematic approach in identifying the degree to which each factor; language, culture, age, literacy levels interact with each other and contribute to/determine healthcare outcomes and experiences. The writer of this dissertation would, however, argue that as Paasche-Orlow and Wolf (2007) fail to address how such an approach could be researched and evaluated, by omitting such an explanation thus reduces the credibility of how one could determine the exact percentage each component attributes to healthcare experiences/outcomes.

On reviewing the literature, the writer feels that internationally healthcare organisations face an enormous challenge to ensure patients with cultural differences, LEP, and low health literacy levels have the opportunity to receive and understand the health information they need or presented to them. Given the diversity of patients, HCP's, medical encounters and healthcare settings, as well as the complexity of the messages that need to be conveyed, successful communication between HCP's and the patient is not easily achieved. This means that healthcare systems and healthcare staff who work in them need to develop a better understanding of factors that influence successful patient-provider communication so one can prevent or ameliorate communication breakdowns.

The next theme examines the call by international organisations for healthcare institutions to assess and redesign appropriately their healthcare communication

templates to cater for potential patient communication barriers in the HCP-patient relationship.

## **2.4 International Guidance on designing healthcare communication**

In its report, “Health Literacy: A Prescription to End Confusion”, the IOM highlight that there is a major mismatch between the health information people receive and what they understand. This report conducted by Kindig, Panzer and Nielsen-Bohlman (2004) on behalf of the IOM, constitute that the lack of understanding is not primarily the fault of patients receiving the information; nor is it solely the result of poor or limited literacy skills. Kindig et al., (2004) articulate that, “Even highly skilled individuals may find healthcare systems too complicated to understand, especially when these individuals are made more vulnerable by poor health” (p. 168). Two major reasons as established by the report as to why health information is difficult to use and understand are; (1) the complexity of information presentation and (2) the application of unfamiliar scientific medical jargon.

Rudd, Colton and Schacht (2000) articulate how studies in the U.S. in relation to the assessment of health materials indicate that the reading level of most written health communication materials (appointment letters, medical instructions) exceed the reading ability of the people for whom they were designed. In a later paper, Rudd (2007) called for written health communication and materials to be designed in plain English, but also to have the needs of the end-user in mind. With an increasing focus on patient-centred care Rudd (2007) states, “Materials designed from the perspective of the user, based on clear understandings of the purpose the materials

serve and the tasks the patient needs to undertake, could lessen the burden on the user” (p. 17).

Mayer and Villaire (2009) contend that designing a written communication template in healthcare requires consideration to be given to several elements, with defining your audience and limiting objectives as the most crucial aspects to get correct. In defining your audience, the authors argue that HCPs need to strongly assess and consider their patient’s diverse age, ethical, cultural, socioeconomic and literacy backgrounds. For HCPs, to keep the process of defining your audience simple, the Joint Commission International (2007) recommends that universal precautions should be incorporated in communicating with patients. In terms of health literacy the Joint Commission International (2007) states that HCPs need to, “Assume each patient has a low level of health literacy” and to, “Err on the side of caution in making clear communications and plain language standard practice in all patient encounters” (p. 7).

The second element Mayer and Villaire (2009) determine as an integral part of written patient communication is the limitation of objectives – essentially preventing information overload. It is well known from a human nature perspective for individuals to lose concentration when communication messages are exhaustive in nature with information. Scientists for Microsoft conducted research and published a white paper detailing the effects of growing technology use on an individual’s concentration level during the communication process. Scientists surveyed over 2,000 Canadian’s and studied brain activity using electroencephalograms. The results indicated the deterioration of the human attention span from 12 seconds in

the year 2000 to just 8 seconds in 2015 (Microsoft, 2015). This result affirms to advertisers or organisations alike who depend on communication as the means of connecting with their specific target audience that is getting the communication message across in less than 8 seconds is vital, otherwise, you will lose the receivers attention. Such research can prove useful to healthcare organisations whereby communication forms a large component of the HCP-patient relationship. Mayer and Villaire (2009) propose that any HCP-patient written communication or correspondence should focus on the most important activity the patient needs to perform, rather than provide details about the nature and cause of a particular condition. In other words, focus on the 'need to do' rather than on the 'nice to know'.

Nevertheless, the strategy and call for keeping communication language simple in healthcare has not escaped criticism. Buetow and Elwyn (2006) argue that within the power and resource constraints under which patients operate to different degrees, HCP's cannot amend all processes to cater for each patient's diverse needs. The authors draw on Hart's taxonomy of four senses of moral responsibility: role responsibility; capacity responsibility; causal responsibility; and liability responsibility to argue this point. Each sense is shown to contribute to an overall theoretical judgment in which the authors determine that patients are responsible for their own interaction with the healthcare system as co-producers of care. The authors also contend that simplifying patient communication as suggested by Mayer and Villaire (2009), the Joint Commission International (2007) and Rudd (2007), by applying plain and simple language is undermining the patient's capacity to understand, and is disrespectful to the patient's humanity.

The writer would contest this argument proposed by Buetow and Elwyn (2006) as with increasing international focus on patient-centred care, it is the duty of HCP's to always have patient's abilities and limitations in mind and appropriately adjust care systems to best suit vulnerable patients. The writer feels that the main weakness of this paper is the failure by Buetow and Elwyn (2006) to acknowledge the soft humanistic side of healthcare. The writer believes that Buetow and Elwyn (2006) take an incompatibilist hard view in relation to amending healthcare communication which doesn't reflect the ethos of healthcare which is based on values of understanding, compassion and care. As recommended by Mayeaux et al., (1996) for healthcare communication to be patient friendly and effective, psychological and literacy levels of all patients need to be considered by HCP's. Thus, patient education and communication materials should include short and simple information, be written in simple language, and focus on the desired behaviour of the patient.

## **2.5 Electronic Communication Technologies – A Challenge for Healthcare**

Communication methods have evolved significantly over the past century. From the written letter to the emerging use of the landline telephone to the eruption of mobile phones, one cannot deny that technology gadgets are some of the most significant communication transformations in our society. Today modern technology tools are the primary means of communication for both personal and professional information exchange. According to Emanuel et al., (2008), interactive messaging through mobile phone technology takes up to 30% of people's time. Albeit the vast improvement and ubiquitous use of electronic communication technologies in the past decade, the traditional use of postal letters is still widely used by HCP's in

notifying patients of appointments. With the broad consensus that electronic communication technologies have the potential to improve efficiency in healthcare service delivery, multiple research studies articulate the many advantages associated with the adoption of such electronic communication technologies for HCP-patient communication purposes.

Murdock, Rodgers, Lindsay and Tham (2002) in their analysis of DNA rates found high non-attendance was due to patient forgetfulness. The authors contend that such was directly traceable to patients receiving OP notification letters weeks or even months in advance of their appointment date. In their study Murdock et al., (2002) examined 736 patients booked for Gastroenterology OP appointments of which 14% DNA. Analysis of the 14% cohort found the mean age to be 49 years old and 6 patients whom DNA were urgent newly referred Gastroenterology patients. Questionnaires were distributed to the 14% cohort of patients whom DNA to investigate the reason behind the patient's non-attendance. Analysis of the results highlighted 30% of such patients stated forgetfulness as their reason for non-attendance, 26% had no reason for non-attendance, 10% were due to clerical errors in appointment bookings, 8% of patients felt better, 3% were fearful of attendance, 23% had other reasons such as, transferred to another Consultant, family bereavement, employer refused to give time off work, etc.,.

Likewise, Mault, McDonough, Currie and Burhan (2012) examined reasons for non-attendance at an Asthma OP clinic which had an average DNA rate of 32.6%. Analysis of non-attendance similarly highlighted forgetfulness as the number one reason stated by patients. The second most cited reason accounting for 20% of DNA

patients was the claim that the patient never received their appointment letter in the post. With DNA rates a major area of concern, costing the U.K. NHS approximately £790 million each year (Atun, Sittampalam and Mohan, 2005), one would have to question the effectiveness of utilising the communication medium of sending OP letters which have been linked to patient forgetfulness resulting in high non-attendance.

Although Murdock et al., (2002) and Mault et al., (2012) report high DNA rates are directly attributable to forgetfulness one could argue that the research methodology utilised isn't statistically sound. For Murdock et al., (2002) 24% of patients who were distributed questionnaires returned their questionnaires but did not give a reason as to why they DNA, thus the overall reliability of their reported findings could be questioned. Likewise, Mault et al., (2012) research method is equally questionable. Both research methodologies utilised the distribution of self-reporting questionnaires to patients who DNA. Some patients might be apprehensive to truthfully state forgetfulness as their reason for non-attendance as such may be perceived by some patients as an embarrassment. Therefore, the true proportion of 'forgetfulness' as the main reason for non-attendance may, in fact, be under-represented in these studies.

Multiple researchers have called for the adoption of electronic communication systems such as the Short Message Service (SMS) which is cost-effective in comparison to traditional communication mediums such as postal letters. Advocates of adopting electronic communication mediums in healthcare settings claim the adoption of SMS technology will address the issue of patient forgetfulness and

patients stating they did not receive their appointment letter. The body of research into SMS technology in healthcare settings is an ever growing subject matter and area of interest. Multiple studies have been conducted internationally to assess the use of SMS as a medium of communication for OP notification which has been highly effective in increasing OP attendance rates (Battistotti, Quaglini, & Cuoco, 2005; Downer, Meara, Da Costa & Sethuraman, 2006; Milne, Horne & Torsney, 2006).

Geraghty, Glynn, Amin and Kinsella (2008) piloted the application of SMS technology for OP appointments to assess if the average DNA rate would reduce. Prior to the introduction of the SMS system whereby patients were only sent appointment letters, the mean DNA rate was 33.6 % at the Ear, Nose and Throat (ENT) OP clinic. Like the vast majority of studies, analysis of why DNA rates occurred highlighted forgetfulness as the main factor. Following the introduction of the SMS system, the mean DNA rate reduced to 22%, a decrease of 11.6%. The paper highlighted that the sole use of appointment letters by post is a means of notifying patients, but it does not account for human factors such as forgetfulness, thus questioning the true impact and effectiveness of using appointment letters on their own for healthcare communication purposes. The authors suggest that appointment letters combined with SMS technology ensure patient forgetfulness is overcome.

Despite the positive reports on how SMS reduces DNA rates, the application of electronic technology has various limitations. A major limitation is that of patients changing their mobile phone number or alternatively a clerical officer mistyping a



patient's mobile phone number incorrectly onto the automated SMS appointment reminder system. Therefore, one can argue on many levels the potential operational flaws and limitations in the application of SMS technology for OP appointment notification purposes.

While many service industries have realised the benefits and adopted electronic technology communication systems to improve service quality with their customers, the adoption of such communication technology is still not commonplace in healthcare settings (Coiera, 2006). One question that needs to be asked is, why so does healthcare fail to adopt such electronic communication systems like SMS technology which have proven successful in other service industries. One such answer may lie in the management literature of Kostova and Roth (2002).

Kostova and Roth (2002) articulate that it has been widely accepted in management literature that any replication of one practice in another organisation which has different organisation environmental characteristics is condemned to failure unless adjusted to the specific conditions of the adopting organisation. Various elements of the institutional environment are often industry and even organisation specific and consequently, comprise barriers to replication. Although many service industries where customer relationships are built on communication are adopting electronic communication systems like SMS technology, many argue that the healthcare industry has unique characteristics that differentiate it from other such service industries. The most articulated concern regarding the implementation of advancing electronic communication systems is that of privacy and data protection concerns which are prominent and unique characteristics to the healthcare sector.

Brooks (2012) states privacy considerations are a major hold back for HCP's in implementing SMS technology. As a result HCP's tend to remain with the traditional tried and tested means of communication which is sending patient's appointment letters via post. A major concern articulated by multiple HCP's is the risk associated with telecommunication providers who enable HCP-patient SMS transmission. The concern of HCP's is that such messages sent by HCP's may remain unencrypted on virtual servers which may be intercepted and read by anyone. According to Pelletier (2015) Chief Operating Officer of the JCI, the minimal uptake of such electronic communication technology in healthcare is due to the issue of where to draw the boundary in the application of such technology in the HCP-patient communication process. Although HCP's acknowledge that SMS can be a quick and effective way to communicate, their application and misuse in situations beyond appointment reminders are of concern to HCP's. Thus, Pelletier (2015) contends that the omission of their application in healthcare settings ensure the blurred lines of SMS appropriate application and their misuse are eliminated therefore ensuring the risks associated with engaging in such technology is eradicated.

On one hand electronic communication technologies and their adoption in healthcare settings are definitely a challenge for HCP's due to the sensitive nature of healthcare and data protection issues. On the other hand, one cannot deny that the use of electronic communication mediums in healthcare are seriously underutilised in aiding healthcare processes but are also underutilised in the HCP-patient relationship. England, Stewart and Walker (2000) state that the slow adoption of electronic communication methods in healthcare can be explained by healthcare's

organisational culture and structure. The authors contend increased formalisation and prescribed processes in healthcare act as a barrier to the adoption of new technology applications and innovations in healthcare settings. Hence, the more formal and rigid an organisation is its practices, the less innovation and change occurs.

In view of both perspectives regarding the adoption of electronic communication systems like SMS technology in the HCP-patient relationship, much literature exists to substantiate both for and against their application in healthcare settings. Despite multiple international studies conducted worldwide highlighting the positive correlation between SMS technology and reduced DNA rates, healthcare still remains stagnant in its old practices and refuses to embrace electronic communication technology going forward. The writer anticipates that the use of postal letters as a method of HCP-patient communication will still remain the dominant medium of communication in healthcare settings. As noted by England et al., (2000) if healthcare wants to progress and adopt new innovations, the entire healthcare culture, and organisation structure will need to be addressed and reformed first.

## **2.6 Implications for the project**

Often as healthcare staff, we fail to consider that the people we serve do not come from a medical background. Conducting the literature review improved one's knowledge on the subject of patient communication and supported the necessity for implementing this OD change initiative. The literature analysed provided a

comprehensive overview of the HCP-patient communication process addressing issues such as communication barriers and how such may potentially impede a patient's interaction with the healthcare system.

With vast evidence that communication barriers are strongly correlated to poor patient experiences and outcomes, international healthcare and patient advocate organisations have called on HCP's to adopt plain language in communicating with patients. Such measures are to ensure the message is understood and hence likely to minimise the possibility of poor patient experiences/outcomes in healthcare settings. The adoption of such international guidelines will be applied to the redesign of the Respiratory OP appointment letter for this OD change project.

Similarly, the literature identified the emergence of electronic communication technologies and the associated strengths and weaknesses associated with adopting such new communication technology in healthcare settings. Albeit much literature highlighting the potential role of electronic communication like SMS technology, critics articulate that electronic communication is uncommon in healthcare settings due to patient data and privacy policies which are held with great importance in healthcare settings. Such stagnation and failure to embrace electronic communication methods are thus the reason why appointment letters still remain the dominant means of communication between HCP's and the patient to date.

## **2.7 Summary and Conclusion**

In summary, the findings from the literature promote greater awareness of the themes discussed above. The literature review also helped to form the change process by providing the writer with the essential information and evidence-based research to introduce such a change within their organisation. The following chapter will discuss the methodology which was utilised for implementing the OD change and will detail the change process based on the Health Service Executive (HSE) model of change.

## **3.0 Organisational Change Process**

### **3.1 Introduction**

This chapter provides an informative discussion around organisational change and the various change models one can utilise and deploy to structure and elicit change. In this chapter, the writer will substantiate the reason behind choosing the HSE change model (2008), as well as detailing how such an OD model was used to structure and implement change within the writer's healthcare organisation.

### **3.2 Organisational Change**

Organisational change occurs when an organisation makes a transition from its current state to some future desired state. Change is an inevitable component in all organisations, however, it is usually feared because it is a disturbance to the status

quo and perceived as a threat to an individual's vested interests and the established way of doing things (Kotter & Schlesinger, 2008).

In the private sector organisational change is usually undertaken in response to changing external factors such as the actions of competitors which force an organisation to adapt from its current state to some future desired state in order to remain competitive. In the case of healthcare whereby the HSE essentially is a monopoly, with little competition for free healthcare, external factors hence have little influence in creating a sense of urgency for reform within the service. As a result change in healthcare is often unpredictable, it tends to be reactive, discontinuous, ad-hoc and often triggered by a situation of organisational crisis (Burnes, 2004; Luecke, 2003; Nelson, 2003).

Prior to commencing any OD or change, it is imperative to devise a plan and adhere to a structured method or developed change model to reach required targets. Young (2009) report a failure rate of around 70% of all change programs initiated. Further to this, the limited success of such change efforts may be due to the absence of a change model (Leeman, Baernholdt & Sandelowski, 2007). Cohen, Tallia, Crabtree and Young (2005) argue how even the best change efforts require a model to structure, guide and integrate the change into practice. According to Sirkin, Keenan and Jackson (2005) soft factors such as culture, leadership, and motivation are the key to success and hence any good OD model should incorporate such elements.

### **3.3 General Change Models**

Literature yields various change models from which to apply for OD implementation. Any one model can be selected based on multiple variables such as the nature and purpose of change or simply an individual's preference. Evident from the literature on change models is, regardless of the model chosen, for change to be successful it is imperative that a clear vision is articulated from the outset. Essentially there are two categories of OD change models available; linear and cyclical.

Linear change models are those such as Kurt Lewin's change model and Kotter's 8 step model.

In 1947, Kurt Lewin created the original change model which was based on the concept that successful change should follow three steps: unfreezing the current state, transition to a new state, and refreezing the newly established state to make it permanent (Bozak, 2003). In unfreezing the status quo, Lewin applies Force Field Analysis, which enables one to identify and enhance drivers of change and on the contrary identify and dilute resistors to elicit the change. Overall Lewin's change model is theoretically correct in regards to executing change, however, it has its limitations. In general terms, it is considered a very broad model which considers change occurring in only three stages. Many would critique Lewin's model as it is linear in nature meaning it does not incorporate the constant dynamic and chaotic nature associated with change.

Many change management models developed since 1947 and in more recent years have in fact been devised building upon Lewin's model. One such other linear model is Kotter's 8 step model. This model commences with firstly creating a sense of

urgency, building a guiding team, creating the vision for change, communication with stakeholders, empowering staff, creating short- term wins, staying persistent and making the change permanent. Kotter emphasises that excluding any of these steps only creates the illusion of speed but ultimately never produces the desired outcome (Kotter, 1995).

One major drawback however associated with Kotter's model is that it assumes there is one best fit or one way of doing things, thus incorporating a sense of 'Taylorism' or 'Scientific Management'. Many critique the model as it fails to acknowledge the soft approach, which is the human relations side to change.

Kotter's model itself is advantageous over Lewin's change model as it provides a more comprehensive structure for executing change. However the downfall of both models is that they are linear - they are one directional. The major disadvantage of this is that such models do not facilitate flexibility which is necessary for the chaotic back and forth nature of the change process, but also fails to incorporate building on the previous improvement (Brisson-Banks, 2010).

In contrast, cyclical change models are based on W. Deming's PDSA model – that is Plan, Study, Do, Act phases to change. The PDSA model provides a good cyclical foundation for Continuous Quality Improvement (CQI) as it facilitates change by continuously doing different things to improve quality. The major pitfall with the PDSA model is that it does not deal with the human side of change such as staff motivation and resistance. Likewise, the leadership approach, culture and



communication methods between management and staff are overlooked in this model.

Similar to the PDSA model is the more recently developed Senior and Swailes (2010) change model which is cyclical, again allowing CQI and thus has a provision instilled to facilitate the chaotic nature of change by enabling the back and forth process between steps. However, the major advantage of the Senior and Swailes (2010) model over the traditional PDSA model is that it incorporates a step of gaining commitment to the vision which deals with the human side of change.

With a bewildering panoply of organisational change models to choose from, determining which one to follow can be difficult. Burke (1994) suggests that in choosing a change model it should be well understood, fit the organisation's nature and has to be practical with wide-range to allow collecting all needed information. Andrews, Cameron and Harris (2008) claim that each change model has its pros and cons, however, no one framework is 'best' in all situations. The authors contend that it is not so much the actual model or theory that is important, but more the approach that is taken is relevant to the organisational circumstances. Andrews et al., (2008) contend that the best change approach appears to use and adapt aspects of various models to suit the culture of the organisation and the context of the change. Keeping this statement in mind whilst researching the various change models, the writer deemed the HSE change model (2008) most applicable for structuring their OD change initiative.

The HSE change model itself was developed within the Irish healthcare context by the HSE Management Team and was adapted from: Kolb and Frohman (1970), Huse (1980), Neumann (1989), Kotter (1995), Ackerman Anderson and Anderson (2001), McAuliffe and Vaerenbergh (2006), Project Management Institute (2004) and approved by the Health Service National Partnership Forum in 2008. As this model incorporated aspects of various models and was designed within the context of the Irish healthcare system, the author considered this change model most appropriate for this particular OD initiative.

This next section of this chapter will detail the application of HSE change model to this OD initiative, which is structured over four phases. The phases included in the HSE model are; initiation, planning, implementation and mainstreaming (Figure 1).

### 3.4 The HSE Change Model (2008)

Figure 1.



(Taken from *Improving Our Services, A User's Guide to Managing Change in the HSE*, 2008)

#### 3.4.1 Initiation Stage

##### ***Preparing to lead the change***

The initiation stage is the first stage which enabled the writer to prepare for and lead the change process. The initiation stage involved the writer assessing the current situation by examining the urgency for change, the drivers, and resistors of the change project, analysis of the stakeholders and the organisation's culture in which the change would occur. To analyse the fore-mentioned aspects the writer prepared and applied various analytical tools, namely a SWOT Analysis, an Organisational Cultural Analysis, a Force Field Analysis and a Stakeholder Analysis. The application of such tools enabled the writer to gain a greater understanding of the vision and

scope of the change to be implemented from the outset.

A SWOT Analysis is a structured strategic management planning tool used in the examination of strengths, weaknesses, opportunities and threats involved in any change project, thus creating full awareness of the present situation. The application of the SWOT Analysis (Appendix 7) enabled the writer to identify areas for action and to strategically deploy and utilise the strengths associated with the change project which included strong line management support and encouragement.

Similarly, JCI guidelines on appointment letter communication and design, identified during the literature review, was noted as a strength during the SWOT Analysis. Not alone did such international guidelines further substantiate the value of the project but also leveraged stakeholder buy-in and commitment in the planning stage.

When eliciting change within any organisation, it is imperative to analyse the environment within which the change occurs. Therefore, the writer felt that understanding the organisational culture was essential in the initiation stage. As noted in much of the management literature, no matter how good a change initiative is or planned, Drucker contends, “Culture eats strategy for breakfast”. Understanding culture can be a powerful animal that counteracts and resists attempts to change, the writer thus deemed it necessary to identify the culture of the OPD and how best to implement the change within the culture identified. The writer applied the Goffee and Jones (1998) Organisational Cultural Analysis framework (Appendix 8) which highlighted the OPD as a ‘networked culture’ indicating it is high on the people involved in the job (sociability) yet low on getting the job done at hand (solidarity). As one can see from the sociability/solidarity matrix in appendix 9, the organisation is

quite close to the 'communal culture' quadrant, which, in the writer's opinion is the ideal culture state. The author anticipates that the implementation of the single appointment letter template may not be too difficult to achieve as the current culture is quite close to the 'communal culture' thus indicating that the departmental stakeholders may adapt well to the change proposed.

After the OPD culture had been established, it was necessary to identify all relevant individuals or groups involved in the change process which the writer classified by applying a Stakeholder Analysis (Appendix 10). The preparation of the Stakeholder Analysis enabled the writer to categorise individuals or groups that were likely to be affected by the OD change by sorting them according to their power and interest. Such highlighted for the writer which individuals could potentially impact the OD implementation and hence heightened the writer's awareness of how each individual should be included, approached and managed during the OD process.

Lastly, the writer conducted a Force Field Analysis (Appendix 6) which outlined the key drivers both for and against the OD change initiative. As noted by Schein (1996), once change agents can understand why people are resisting change, then successful change is achieved by either strengthening the driving forces or weakening the restraining forces. While the key drivers deemed more significant than those against change, one could not discredit such resisting factors. The greatest resisting force as identified by the writer was, 'fear of the unknown', which could have the potential to result in an unfavourable effect and restrain the OD implementation. Therefore, the writer understood the importance of deploying personal expert and referent power as well as influencing strategies such as rational

persuasion in order to dilute such concerns and gain commitment from staff to the change initiative.

### **3.4.2 Planning Stage**

The purpose of the planning stage is to bring stakeholders together to communicate the specific feature for change, encourage participation, interaction and gain buy-in from individuals. This stage comprises of three steps: building commitment, determining the details for the change and developing the implementation plan (HSE, 2008).

#### ***Building Commitment***

The aim of building commitment is to create a shared sense of vision for change by building momentum for the change to take place. A key component is networking and communication with stakeholders to articulate and convey what is anticipated to change. The writer deemed it applicable during this phase to deploy the, “What’s in it for me?” (W.I.I.F.M) factor to influence each different group of stakeholders and thus, gain commitment to the future change. The building of commitment is akin to the “Planning for audit” stage in the HSE audit cycle (Appendix 11) which entails involvement and communication with stakeholders, establishing the audit topic and planning the delivery of the observational audit.

On reviewing the completed Stakeholder Analysis, the writer determined that it would be wise to firstly meet with those individuals identified with high power and high interest, the Respiratory Consultants. The reason for this strategic decision was that

if these individuals did not agree to the proposed change initiative, then one would then have to revert back to the drawing board.

The writer arranged a meeting with both Respiratory Consultants, however due to timetable clashes and constraints it was impossible to meet both Consultants together at the one time. The writer met with the first Respiratory Consultant (Consultant A) on the 7<sup>th</sup> October 2015 and with the second Respiratory Consultant (Consultant B) on the 9<sup>th</sup> October 2015. The objective of the meetings was to present and communicate the case and vision for change but also address and reassure any concerns or questions on the Consultants part in relation to the change initiative articulated.

Prior to meeting with the Consultants, the writer had prepared a rough draft of the new one-page appointment template that would be introduced for Respiratory patients requiring both a PFT and OPD appointment on the same day. The writer also brought the current appointment templates in use (Appendix 1 & 2) to enable the Consultants to visually see what the writer anticipated changing. Although a rough draft of the newly anticipated single page appointment letter was presented to both Consultants, the writer sought their advice on the information content which from their perspective as clinicians was important to have on the newly designed Respiratory appointment letter.

Consultant A expressed how numerous patients attend his OP clinic totally unaware of medications or inhalers they are currently taking. He articulated how he would often have to contact the patient's GP at clinic, which he expressed is time-

consuming. Consultant A suggested that on the new appointment letter the sentence, "Please bring a list of all medication and dosage with you", be put in bold print so it stands out and hence might remind patients to adhere to such instructions. The writer assured the Consultant that his suggestion would be included in the new appointment letter design and that the writer would touch base and revert back in due course with a draft of the final template prior to implementation.

The writer felt that by including the Consultants (who were identified by Stakeholder Analysis as high power and high interest) in the design and development of the project, she would gain their expertise but also commitment and buy-in. Overall both Consultants appeared extremely positive and supportive of the change at the meetings. The writer noted that as both Consultants are very much engaged in continuous professional development (CPD) and supportive of research and education, this additionally stood in the writers favour in gaining commitment and buy-in from both Consultants.

The next step for the writer was communicating the initiative to the PFT Lab Technicians, the OPD Clerical Supervisor, OPD CNM, OPD nursing and clerical staff and the care assistant/porter. This was an imperative communication process as Kotter (1997) emphasises the importance of communicating the vision for change in order to get buy-in from all of those involved otherwise the change will not succeed. The writer arranged a meeting with both PFT Technicians with the purpose of communicating the change initiative but also to receive feedback regarding the Technicians concerns and perspectives on the change process. The author had anticipated that the PFT Technicians would be supportive of the OD initiative as both



Technicians had previously articulated their concerns to management about Respiratory patients turning up late, thus creating a backlog in the PFT waiting room which is limited in space. As anticipated both Technicians were extremely supportive of the change with one Technician stating, “Something should have been done long ago in relation to this issue”.

As the discussion flowed, one PFT Technician brought up a separate issue in relation to the overbooking of PFT slots which was being done by the staff in the Central Appointments Department. The Technician stated that such overbooking further contributed to backlogs in the PFT Lab on the day of clinic. The Technician asked if the writer could also address this issue with the staff working in the Central Appointments Department. Despite this being a separate internal issue outside of the writers remit, one felt compelled to act on the PFT Technician's request as reciprocation may benefit the ease and implementation of the writers OD initiative going forward (See Reflective learning). The writer assured the PFT Technicians that she would meet with the Administration Manager regarding their concern relating to the overbooking of PFT's slots by the Central Appointments Department staff and that the writer would inform the Technician's via email on the outcome of that meeting. Albeit coming away from the meeting with another task at hand, the writer's OD initiative was positively received and supported by the Technicians who articulated they were glad to engage in the change initiative.

A formal meeting with the OPD Clerical Supervisor, OPD CNM, OPD clerical staff, OPD nursing staff and care assistant was similarly arranged to communicate and articulate the vision for change. The writer deemed the SWOT Analysis highly

valuable as it outlined the strengths of the OD for the OPD stakeholders and hence created a framework for the meeting. As noted by Bovey and Hede (2001) when eliciting change, in order for a leader to win the support of others they must appeal to the psychological. The authors state that when confronted with change it is simply a fact that personal context is the filter humans use to evaluate the environment and the anticipated change. With this in mind, the writer deemed it applicable to deploy the W.I.I.F.M factor to each group of OPD staff as a way to validate the change journey and gain commitment.

The writer thus outlined the benefits to the patient, but also the benefit to working practices for all involved. The writer highlighted that the implementation of the new single page appointment letter would eliminate the need for nursing staff to be monitoring which patient they sent over to the PFT Lab and when that patient would arrive back in the OPD. Similarly, the benefit for the OPD clerical staff was outlined in that such staff would no longer have to print off two separate appointment letters from the IPMS thus reducing the movement of clerical staff from their desk to the centralised office printer.

Throughout the meeting, the writer utilised the SWOT Analysis as it highlighted the benefits associated with the change initiative and hence enabled the writer to deploy rational persuasion as an influencing tactic to gain commitment from the group. The writer on articulating the reasons for change gained positive support from all OPD staff with the OPD Clerical Supervisor articulating that she was happy for me to lead the change and show staff the ropes once the new appointment template was up on the IPMS system.

### ***Determining the detail of change***

A vital component in the planning stage is assessment of the current situation against the future desired state, feedback the analysis to stakeholders and finally describe exactly what needs to change. This stage is akin to that of, "Measuring Performance" in the healthcare audit cycle. Understanding the current situation involved the writer conducting an observational audit of patients attending the Respiratory clinic by recording the exact number of patients who would arrive first in the OPD without their PFT complete despite the patient having both appointment letters with them. Such was to assess patient's compliance with their appointment letter instructions by directly observing how many patients would arrive in the OPD first instead of getting their PFT done first.

Jimmerson, Weber and Sobek (2005) articulate care processes in large healthcare organisations simply evolve over time and are seldom a result of conscious planning and action. Kerridge (2011) states that this can often result in complex patient pathways that lack logic; when asked why something happens, the answer can frequently be, "Because that's how it's always been done" rather than "Because this is the best way" (p. 12). With this in mind prior to commencing the observational audit exercise the writer drew up a process map for such patient's clinical journey (Appendix 4). The purpose of process mapping the patient's journey is to enable one to detect bottlenecks in the system but also wastage in clinical pathways that can result in identifying solutions. The activity of process mapping outlined for the writer the series of sequential steps Respiratory patient's encounter, however, it also acted

as a basis for the time recording of patients at each step pre-intervention (Appendix 12).

The writer who had previously communicated and consulted with the relevant stakeholders in the building commitment stage conducted an observational audit in order to ascertain data on the current process so the exact detail of change could be established. The writer sat in the OPD Respiratory clinic on the 21<sup>st</sup> and 22<sup>nd</sup> October 2015 to observe how many scheduled patients arrived first in the OPD without their PFT complete. The analysis highlighted that on average 27% of patients attending the clinic arrived in the OPD first without their PFT complete (Table 1), resulting in such patients to endure an additional 2 non-value added steps in their clinical journey. In theory, the observational audit highlighted that this 27% cohort of patients were non-compliant with the instructions on their two appointment letters. As outlined in the literature review such is not the fault of the patient but is due to lengthy complex appointment letters utilising medical jargon which can be difficult to for any patient to understand.

The writer thus observed this 27% cohort of patient's clinic journey by measuring and recording the average time spent in each step of these patient's pathway. According to the NHS Modernisation Agency Report on 10 High Impact Changes for Service Improvement and Delivery, the application of process mapping with time monitoring studies build up a representation of the time and resources required by a patient during their process of care (NHS, 2004). While process mapping aims to provide a visual understanding of the patient's process, time monitoring aims to directly and continuously observe tasks in order to quantify activities and the time taken to do

them so areas for improvement can be established. Once the raw data under the current situation was collected and analysed, the writer was able to convey the collected data as information back to the stakeholders.

To further substantiate the value of the change project and enhance buy-in, the writer called a meeting of all stakeholders on the 12<sup>th</sup> November 2015 to articulate the findings of the clinic observational audit exercise conducted in October 2015. The writer presented the process map which further enabled stakeholders to understand the true patient's pathway as each step is described visually, thus making it easier to highlight problems such as bottlenecks, unnecessary movement of patients and other waste occurring. The display of the observation data sheet and such numeric information was more tangible enabling greater understanding among the stakeholders regarding the urgency for change. Such numeric results acted as social proof a further influencing strategy noted as one of Cialdini's six principles of social influence to gain commitment to the change (Cialdini & Goldstein, 2004). One staff member reiterated by stating, "*We knew this was a problem with patients turning up without PFT's complete, but we never knew the exact extent as nobody had ever before actually numerically measured the extent of the issue*". At the meeting, the writer asked the stakeholders present on their perspective regarding the layout and content of the new Respiratory letter. The writer spoke with the group about JCI guidelines and how such recommendations like the adoption of plain and simple English is considered international best practice. We discussed various ideas, but the main consensus was that the appointment message needs to be condensed to a single page, and the terminology utilised needs to be patient focused so they can understand where to go and what is required of them.

The anticipated resistance from the OPD clerical staff didn't occur, however, the writer notes that as this project removes/reduces unnecessary steps in the work processes of clerical staff it was unlikely resistance to the change would be incurred. The writer notes that despite the absence of resistance amongst clerical staff to the change project, one must be cognisant that the vast proportion of change projects receive resistance. Therefore, the writer deems it necessary for change agents to be aware of various strategies to utilise if facing resistance to any organisational development change project.

Agreeing that a single page letter containing both appointments was to be introduced the writer understood the need to assess the ICT infrastructure to determine how the new appointment letter template would sit on the IPMS software platform. At this point, it was essential to have the expertise of the head ICT administrator whose knowledge of the IPMS structure and its limitations were crucial to the new appointment letter design. The writer arranged a meeting on the 17<sup>th</sup> November 2015 with the ICT administrator to design the layout and content of the new Respiratory appointment template that would best fit with the IPMS software. As previously agreed by the group the adoption of plain simple language which is strongly advised by JCI guidelines in patient letter communications was implemented in the new appointment template. For example, the word, "Pulmonary Function Test" was changed to "Breathing Test" which would be more understandable to every patient. The writer also noted the importance of preventing information overload, an important factor in healthcare appointment template design also highlighted during the literature review.

Albeit the change agent having a template design on paper the limitations of the IPMS software could not facilitate the writer's exact design they were hoping for. The ICT head administrator explained that the IPMS software could only print two appointments on one page, by displaying both appointments in a box format. Despite this limitation, the ICT administrator suggested that below the box containing both appointments was the use of "Step 1" and "Step 2" for patients which would relate to their appointments displayed in the box format (Appendix 15).

### ***Developing the implementation plan***

The final step was to ensure all stakeholders were happy with the new single page appointment letter that would be implemented. As agreed with the Consultants at the initiation stage the writer emailed the new appointment template to both Consultants on the 2<sup>nd</sup> December 2015 to get their feedback and approval for implementation. The writer received a response from Consultant B the following day stating his support and that he was happy to make the change. Ten days passed and the writer had not yet heard any feedback from Consultant A. At this point the writer felt that resistance to the change was emerging despite Consultant A expressing his support to the writer at their initial meeting back on the 7<sup>th</sup> October 2015. As noted by Ford and Ford (2009) those who say nothing can resist as fiercely as those who shout the loudest, silence never means consent and thus, can be more difficult to manage than open resistance. Two weeks passed, and the writer eventually received an email reply from Consultant A. The email didn't state explicitly whether he was happy or unhappy with the newly designed appointment letter. Given the unambiguous response, the writer emailed both Consultants stating that the new appointment letter

would be implemented on the 8<sup>th</sup> January 2016 and if they had any reservations in the meantime regarding implementation they could contact me directly (See Reflective learning).

The writer organised a meeting on the 18<sup>th</sup> December 2015 with the OPD CNM and OPD Clerical Supervisor to ascertain their feedback and opinion of the new appointment letter design. Prior to this meeting the writer was particularly anxious that the OPD Clerical Supervisor may, in fact, push out the implementation date as the writer was very aware that December was a particularly stressful month for the OPD Clerical Supervisor due to the Special Delivery Unit (SDU) mandating extra OPD clinics to reduce excessive waiting list times (See Reflective learning). Much to the writers surprise the meeting ran very smoothly, and it was agreed with the OPD Clerical Supervisor and OPD CNM that the date for implementation was to be the 8<sup>th</sup> January 2016. It was agreed by the writer and the OPD Clerical Supervisor that the old templates would be taken off the IPMS application so staff wouldn't subconsciously use or revert back to utilising the old appointment letters. It was also agreed with the OPD Clerical Supervisor that the writer would show the staff on the 7<sup>th</sup> January 2016 where to access and print off the new Respiratory appointment template on the IPMS. To aid clerical staff on how to access the new OPD Respiratory appointment letter, the writer also developed and wrote a Standard Operating Procedure (SOP) which could be later referred to by staff if any difficulties arose.

The writer arranged a coffee morning with cakes and biscuits on the 21<sup>st</sup> December 2015 for the OPD staff which was to act as a venue for displaying the new



appointment template to be implemented but also to announce that implementation would be the 8<sup>th</sup> January 2016. Despite this being an informal setting it was a means for the writer to further achieve buy-in from clerical staff to the change project. This group collaboration over coffee encouraged additional engagement and assisted in persuading the group towards the same goal. The writer noted that one was utilising the power tactic of ingratiation as noted by Falbe and Yukl (1992) over informal coffee meetings with the OPD clerical staff in order to gain commitment and further buy-in at this point.

### **3.4.3 Implementation – Implementing change**

The purpose of the implementation stage is to focus on applying and putting the agreed plan into practice, as well as monitoring the change to ensure it is meeting its intended function. According to Nielsen and Randall (2009), even change initiatives that deem promising have been unsuccessful as a result of poor implementation, to avoid such pitfalls managers should be available to assist in change and create a supportive environment.

With this in mind, the day before the implementation (7<sup>th</sup> January 2016) the writer went to the OPD to show and assist clerical staff in accessing and printing off the new one page Respiratory appointment letter on the IPMS system.

As agreed the newly designed appointment letter was put up and made accessible to all OPD clerical staff by the head ICT administrator on the 8<sup>th</sup> January 2016. The head ICT administrator removed the old templates which had been agreed by the

writer and the OPD Clerical Supervisor as to prevent staff from unconsciously reverting back to old habits. On the day of implementation, the writer sat with one of the OPD clerical staff members who was issuing Respiratory patients appointments off the waiting list on the IPMS application. The purpose of the writer being present in the OPD on the 7<sup>th</sup> and 8<sup>th</sup> January 2016 was to support staff with any issues or difficulties they may have encountered in getting used to the new process. This action was further substantiated by Nielson and Randell (2009) who articulate that managers should thus be available to assist in the change and create a supportive environment; otherwise, implementation may be unsuccessful.

During the writers continuous interaction with the OPD staff, it became apparent to the writer that one particular OPD clerical staff member was particularly interested in the OD process. The writer decided to ask this staff member to act as the advocate for the OPD and communicate to the writer any issues or unanticipated problems that may arise going forward associated with this change initiative. The reason the writer entrusted one staff member to articulate any issues during implementation was, as noted by Gill (2003) that an over-emphasis on management and an absence of letting others take a bit of leadership may lead to poor co-operation of staff and lead to the failure of the change initiative. With this in mind, the writer deemed at this point it necessary to let the OPD clerical staff work away as the change agent didn't want the OPD staff to feel micro-managed.

Albeit the new appointment template being implemented for use on the 8<sup>th</sup> January 2016, the first clinic of patients to receive this new appointment template were patients attending the clinic on the 3<sup>rd</sup> March 2016. This is due to the HSE mandated

practice for the Central Appointments Department to date patients from the waiting list 6-8 weeks in advance of their OP clinic date. All patients booked into Respiratory clinics including and following the 3<sup>rd</sup> of March 2016 would receive the new appointment template. Hence, the writer would re-audit on this date to assess the impact of the OD change.

### ***Sustaining Momentum***

At this point, the first phase of implementation was complete with review meetings to take place the first week of April. The purpose of this meeting was to feedback data collected and analysed which would demonstrate the impact of the change project to stakeholders. As the 3<sup>rd</sup> and 4<sup>th</sup> of March were essentially 6-8 weeks away for re-evaluation of the intervention, the writer acknowledged it was vital to maintain a connection and enthusiasm amongst stakeholders. During the period between January and March 2016, the writer met with the PFT Technicians and updated the Consultants that the new appointment letter was implemented and that re-evaluation would take place in which the information collected would be relayed back to all stakeholders. Similarly, the writer called over to the OPD clerical staff every few weeks to touch base, assess and receive feedback from the staff on the implementation of the new appointment template. As noted by the HSE (2008) ensuring communication is consistent with those involved is imperative to supporting momentum. Thus, the change agent understood the importance of communicating and engaging regularly with those concerned as this enables feedback to be acknowledged and increases the likelihood of embedding change into everyday activity (HSE, 2008).

### **3.4.4 Mainstreaming**

The purpose of the mainstreaming stage is to focus in on the success of the change effort so that it can be embedded into the everyday culture. This stage also enables one to determine if the aim of the change was met and to maintain the new methods of practice by engaging in incessant evaluation and continuously searching for improvement.

The writer conducted evaluation for the implemented change on the 3<sup>rd</sup> and 4<sup>th</sup> of March 2016 by using the same techniques of patient audit observation and time recordings as conducted in the planning phase. At these two clinics, the results showed a massive improvement with 100% of patients arriving in the OPD with their PFT complete. Likewise, a reduction in patient TAT of 24 minutes was also observed. These results, which will be discussed further in chapter four, were relayed back to all stakeholders to highlight the impact of their efforts and the OD change on Respiratory patient's clinical journey.

#### ***Making it the way we do our business***

As noted by Weick (2005) the celebrating of, "small wins" for performance is imperative, not only for the success of the change project but also for staff morale. With this in mind, the writer held a coffee and cake morning to thank the OPD staff for their engagement and to congratulate them on their participation and effort towards the OD change. The writer felt that showing appreciation to staff is vital as it builds a sense of community and trust which may enable and assist in gaining buy-in and commitment to future projects.

### ***Evaluating and Learning***

Evaluation is a formal method of identifying learnings and is deemed valuable in reviewing the change process and determining aspects that require further development or variation (HSE, 2008).

The writer acknowledged that continuous communication, consultation, and feedback through numerous meetings were crucial in ensuring stakeholder buy-in and commitment to the change project thus making the implementation process possible. The sharing of ideas and communicating back the results and outcomes of the OD change process has urged other departments to re-assess their appointment notification letters sent to their patients. Currently, the Urology team are redesigning the information on appointment sheets sent to patients as a vast proportion of patients attending the Urology OP clinic attend without having their PSA done prior to their visit. The current Urology appointment letter doesn't detail or remind patients of the need to get a PSA test done approximately 10 days prior to their Urology OP appointment. The Urology team are currently redesigning the Urology OP appointment letter to include this reminder information to see if an increase in patients attending with their PSA complete will be observed. Not only has this particular OD change resulted in an improvement in Respiratory patient's clinical journey, but it has also encouraged other departments to follow similar improvement initiatives which are simple but have a big impact.

### **3.5 Conclusion**

The aim of the OD project was to improve Respiratory patient's clinical journey which was achieved against the objectives initially set out.

The HSE change model (2008) was utilised, as this, in the writer's opinion provides a structured and comprehensive framework for implementing change in a healthcare setting. The benefits of the HSE change model (2008) is that such a model enables one to apply analytical tools such as a SWOT Analysis, an Organisational Cultural Analysis, Stakeholder Analysis and Force Field Analysis. Such tools enable one to create an awareness and urgency for change among stakeholders as well as providing a framework from which the change agent can utilise in obtaining buy-in and commitment from various stakeholders in healthcare settings.

The HSE change model (2008) also guided the writer as the change agent through the various stages as well as providing flexibility by enabling the, "to and forth" chaotic nature of organisational change which is prevalent in healthcare settings. The next chapter will discuss evaluation and its crucial role in the OD change process and highlights the impact of the change implemented.

## **4.0 Evaluation**

### **4.1 Introduction**

In general terms evaluation is a method of measuring the extent to which an intervention achieves its stated objectives (Lazenbatt, 2002, p. 71). From a

healthcare perspective, the WHO European Working Group on Health Promotion Evaluation (1998) contend evaluation is the systematic examination and assessment of the features of an initiative and its effects in order to produce information that can be used by those who have an interest in its improvement or effectiveness.

According to Øvretveit (1998), the purpose of evaluation is to encourage managers to establish the value of a change intervention through the collection and analysis of data, thus identifying areas for review and further development.

This chapter will discuss the vital importance of evaluation and its role in healthcare change initiatives but with particular relevance to this OD change initiative.

## **4.2 Significance of Evaluation in Healthcare**

All too often healthcare interventions and improvements are implemented, assuming what is done is going to improve the efficiency and effectiveness of the service. Such an assumption means the effectiveness of an intervention is not actually measured and hence as W.Deming is claimed to have stated, “*That which cannot be measured, cannot be improved*”.

Evaluation of healthcare initiatives needs to form an integral component of the overall change process in order to determine if any improvement is being achieved. All researched OD models from the PDSA iterative cycle (Deming, 1986) to the HSE change model (2008) contain evaluation as a vital component. In this context, the author applied the HSE change model to guide this OD initiative, whereby evaluation was conducted in the ‘mainstreaming’ stage. The purpose of evaluation is that it provides concrete evidence and data-driven results which can act as ‘social proof’ as

an influencer and gain buy-in from stakeholders involved. In terms of this project, its strategic goal is to improve the clinic journey of Respiratory outpatient's utilising an audit study.

#### **4.3 Methods and Measures**

The writer conducted an observational audit to establish patient's compliance with their appointment letter instructions for patients requiring a PFT prior to their OP appointment. The reason the writer decided to utilise audit as an evaluation design as noted by Øvretveit and Gustafson (2003) is that, "It is a low-cost method of evaluation" and "Looks at the extent to which healthcare staff or patients may diverge from what they should do". (p. 760). From general observation from working in the department, many Respiratory patients week on week arrive first at the OPD without their PFT complete despite the patient also having their PFT appointment letter with them. Weekly this results in variation in waiting times for patients as some patients are in the wrong location at the wrong time and thus can cause a backlog in the PFT Lab.

In this project, observing the patient's journey was done along with measuring and recording the average time spent at each step of the pathway. On conducting such an observation study, the writer was able to identify actions and steps which do not add value to patient's journey as well as highlighting the bottleneck in the process. Data collection and evaluation of same was conducted before starting the change and was repeated again after implementation to compare the results to ensure achieving the required aim and objectives (Øvretveit, 2002).



As the data collected was primarily the recording of time length spent at each stage in the clinic journey; thus, the data type collected was quantitative in nature.

Quantitative evaluation according to Aliaga and Gunderson (2000) is the explaining of a phenomenon by collecting numerical data that is analysed using mathematical methods with particular relevance to statistics. A key component of quantitative evaluation is ensuring its 'validity' and 'reliability'. Such terms refer to the credibility, dependability, and transferability of the results (Marshall & Rossman, 2010).

Increasing the trustworthiness of the data collected and analysed can be done by various statistical tests of which the writer will apply an independent t-test in the latter part of this chapter to cater for and ensure data reliability.

The writer is conscious that much of the literature on evaluation methods strongly cite the adoption of a mixed method, entailing the use of both qualitative and quantitative. Thus, the writer has noted the use of just quantitative evaluation analysis as a limitation which is further discussed in chapter five.

#### **4.4 Aim**

The aim of this evaluation is to measure the extent to which the intervention involved improved the clinic journey of Respiratory outpatients was achieved by the stated objectives (Lazenbatt 2002). Thus for each objective outlined for this project, evaluation was conducted utilising different quantitative tools and techniques.

#### **4.4.1 Objectives, Measurement and Results**

**Objective 1:** To ensure 100% of patients attending the Respiratory clinic who require PFT's arrive in the OPD with their PFT complete.

Two Respiratory clinics pre-intervention were observed at the end of October 2015. Clinic 1 observed on the 21<sup>st</sup> October 2015 had 32 patients booked requiring both a PFT and OP consultation on the day of clinic. Observation of these 32 patients found 7 patients arrived first at the OPD without their PFT complete despite each of these 7 patients having their OP and PFT appointment letters with them on check-in at the OPD registration desk. Such 7 patients represented 22% of the 32 patients.

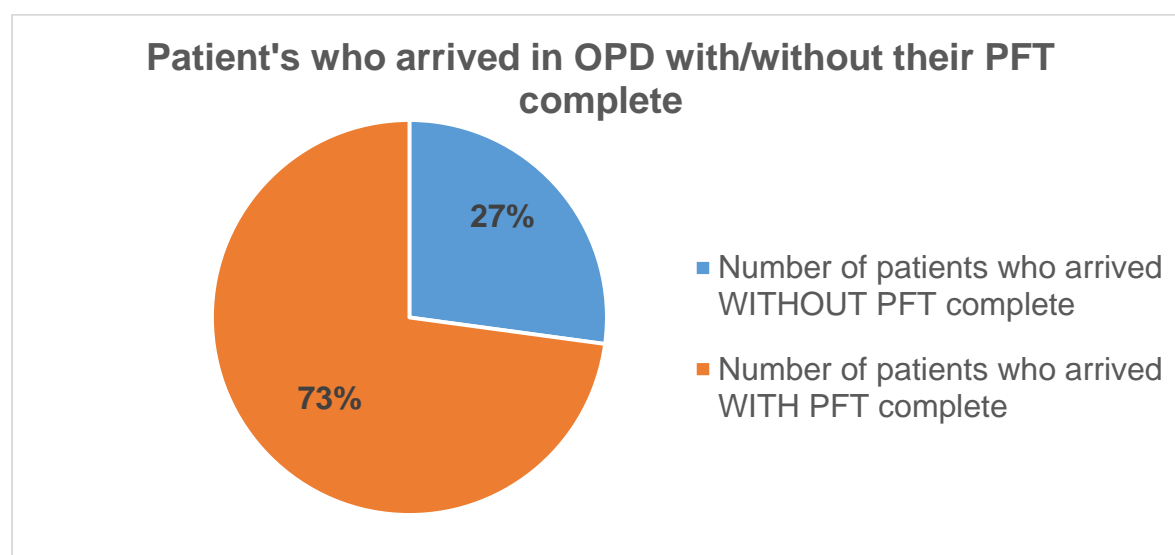
The second clinic (clinic 2) observed pre-intervention was conducted on the 22<sup>nd</sup> October 2015. This clinic had 38 patients booked requiring both a PFT and OP consultation on the same day. Observation of these 38 patients found 12 patients, representing 32%, arrived in the OPD first without their PFT complete.

In total over the two Respiratory clinics under observation pre-intervention, 70 patients in total required a PFT prior to the OP consultation on the day of clinic. Out of these 70 patients, 19 patients arrived first in the OPD without their PFT complete, representing 27% of the total patients (Table 1 & Figure 2).

**Table 1. Pre-intervention data - Patients who arrived without PFT complete**

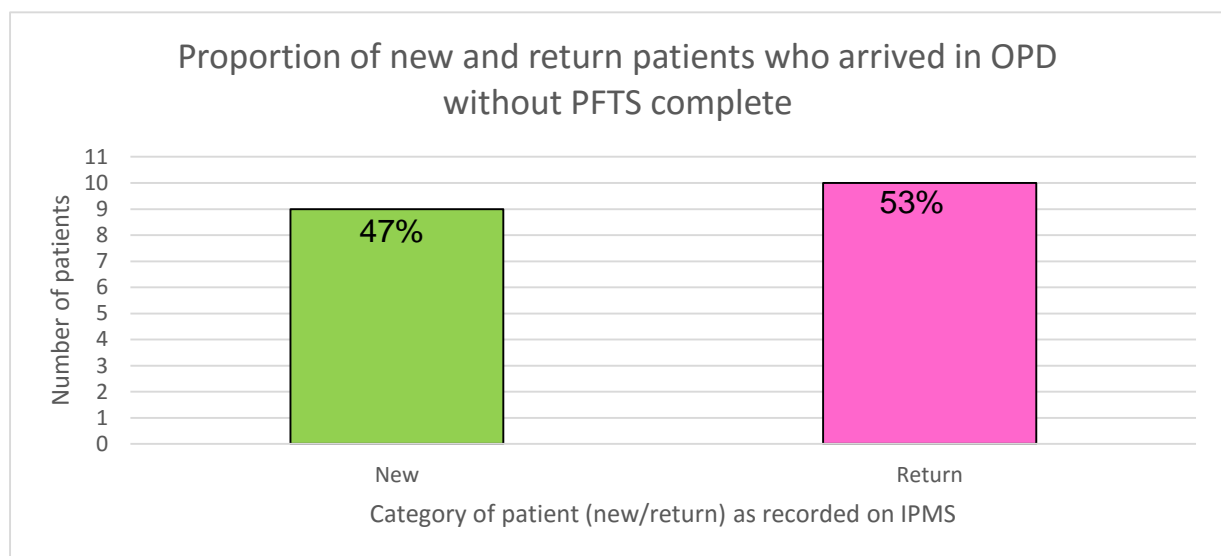
	NEW Patients	RETURN Patients	Total number of patients who arrived <b>WITHOUT PFT</b> complete	Total number of patients who arrived <b>WITH PFT</b> complete	Total number of patients requiring PFTS	% of patients who arrived in OPD <b>WITHOUT PFT</b> complete
Clinic 1	5	2	7	25	32	22%
Clinic 2	4	8	12	26	38	32%
Total	9	10	19	51	70	27%

**Figure 2. Proportion of patients without PFT complete (Pre-intervention data)**



The 27% cohort representing 19 patients, were shadowed and their time spent at each stage of the clinical journey was recorded on a data sheet (Appendix 12). Further analysis of these 19 patients identified that 9 patients were 'new' (first-time visit patients) representing 47% of the cohort analysed. Thus, the remaining 10 patients were recorded on the IPMS as return patients representing 53% of the analysed cohort (Figure 3).

**Figure 3. New to Return patient ratio (pre-intervention)**



As it was unusual to have such a high ratio of return patients arriving in OPD first without their PFT complete the writer deemed such required further analysis. On further investigation into the 10 'return' patients as recorded on the IPMS, 4 of these patients were in fact 'new' to the OP and PFT process. These 4 patients were seen by the Consultant as inpatients and were now being followed up in the OPD. These 4 patients albeit being recorded as 'return' on the IPMS, in fact, could be stated as new as they had never been through the PFT and OP Respiratory clinical journey process.

With the new single page letter containing both the PFT and OP consultation appointment implemented on the 8<sup>th</sup> January, post-intervention data collection commenced on the 3<sup>rd</sup> and 4<sup>th</sup> March 2016. Clinic 1 post-intervention observed on the 3<sup>rd</sup> March 2016 had 36 patients booked requiring both a PFT and OP consultation on the same day. Each of these 36 patients would have received the

single one-page letter containing both appointments (PFT and OP consultation) (Appendix 15). Observation of these 36 patients found all 36 patients attended their PFT appointment first and then proceeded to the OPD for their OP consultation.

The second clinic (clinic 2) observed post-intervention was conducted on the 4<sup>th</sup> March 2016. This clinic (clinic 2) had 34 patients requiring both PFT's and an OP consultation on the same day as clinic. All 34 patients observed from clinic 2 arrived in the PFT Lab first and then proceeded to the OPD for their OP consultation (Table 2).

**Table 2. Post-intervention - Patients who arrived without PFT complete**

	NEW Patients WITHOUT PFT COMPLETE	RETURN Patients WITHOUT PFT COMPLETE	Total number of patients who arrived <b>WITHOUT PFT</b> complete	Total number of patients who arrived <b>WITH PFT</b> complete	Total number of patients requiring PFTS	% of patients who arrived in OPD <b>WITH PFT</b> complete
Clinic 1	<b>0</b>	<b>0</b>	<b>0</b>	36	<b>36</b>	<b>100%</b>
Clinic 2	<b>0</b>	<b>0</b>	<b>0</b>	34	<b>34</b>	<b>100%</b>
Total	<b>0</b>	<b>0</b>	<b>0</b>	70	<b>70</b>	<b>100%</b>

Analysis of both Respiratory clinics post-intervention showed 100% of patients who required both a PFT and OP consultation on the day of clinic arrived first in the PFT for their diagnostic test and then proceeded to the OPD for their consultation.

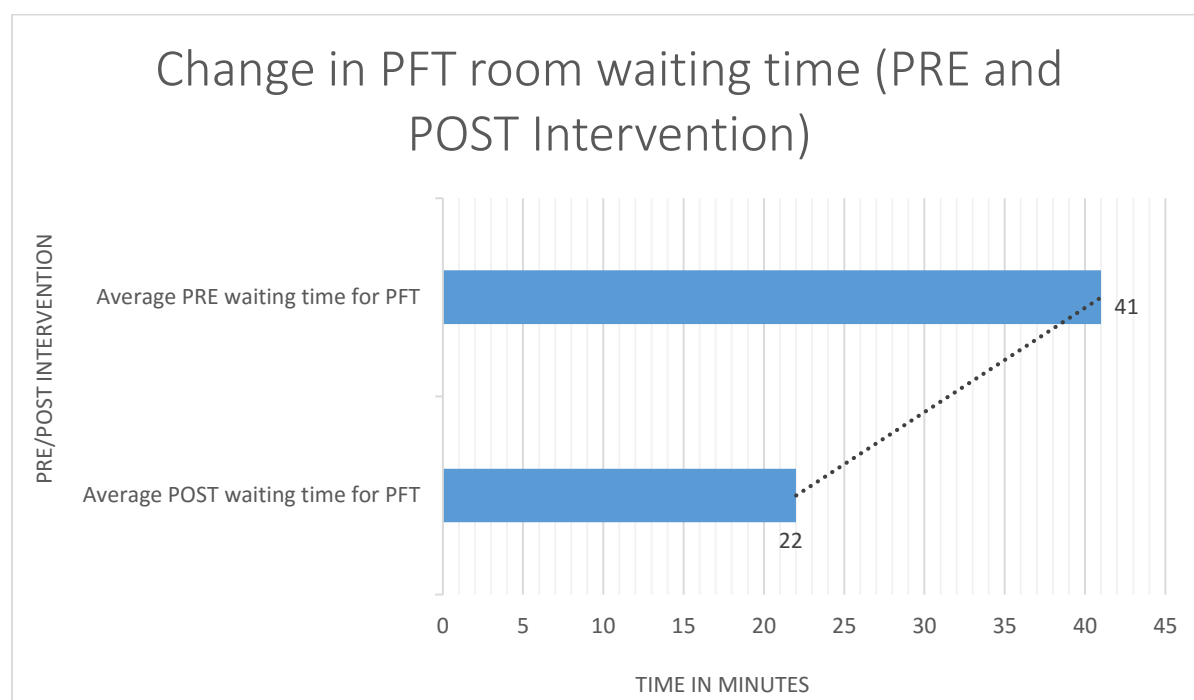
**Objective 2:** Reduce the waiting time at the PFT Lab which is a functional bottleneck by approximately 15 minutes.

As identified in process mapping the PFT Lab was highlighted as a functional bottleneck. Analysis of the time spent waiting by the 19 patients pre-intervention showed an average waiting time for such patients of 41 minutes in the PFT Lab. The variation in waiting time between the 19 patients ranged from the shortest wait of 23 minutes to the longest wait of 70 minutes for one patient.

As seen by objective 1, post-intervention 100% of patients attending the clinic on the 3<sup>rd</sup> and 4<sup>th</sup> of March 2016 attended for their PFT first and then proceeded to the OPD for their consultation. To compare like with like, as 19 patients was the sample size pre-intervention, 19 patients were observed at random for post-intervention analysis.

Analysis pre and post-intervention displayed a reduction in the average PFT waiting time from 41 minutes pre-intervention down to 22 minutes post-intervention (Figure 4). This represents a reduction of 19 minutes on average, therefore representing a 46% reduction.

**Figure 4. Average PFT waiting time (Pre & Post-intervention)**



Variation in the shortest wait time reduced by 48% from 23 minutes observed pre-intervention to a reduced wait of 12 minutes post-intervention. Variation in the longest wait time observed reduced by 36% post-intervention, from 70 minutes pre-intervention to 45 minutes post-intervention (Table 3).

**Table 3. PFT waiting times pre and post-intervention**

Waiting time (minutes)	2015 (pre-intervention)	2016 (post-intervention)	% change
Average wait time in PFT	41 minutes	22 minutes	46% reduction
Shortest wait time in PFT	23 minutes	12 minutes	48% reduction
Longest wait time in PFT	70 minutes	45 minutes	36% reduction

**Objective 3:** To remove two non-value added steps in the patient's clinical journey.

From a process mapping perspective, one can visually see that the patient's pre-intervention clinical journey contains 2 additional non-value added steps of walking from the OPD to the PFT lab and re-queuing again in OPD after their PFT is complete in order to hand the clerk on the registration desk the PFT result to file in the chart. From the current process map (appendix 4) one can visually total 7 non-value added steps in comparison with the redesigned process map (appendix 5) one can visually total 5 non-value added steps.

If we total the average times spent at each non-value added step and view it as a proportion of the total TAT we can obtain a numeric value to highlight the pre-intervention and post-intervention change in non-value added activity as a percentage of patient TAT (Table 4 & 5).



**Table 4. Non-value added time as % of total TAT (Pre-intervention)**

Pre-Intervention (Data extracted from data audit observation sheet- appendix 12)

Non-value added activities (Pre-intervention)	Average time in minutes
Time queuing	6 mins
Walk to PFT Lab	4 mins
Wait in PFT Lab	41 mins
Walk back to OPD	4 mins
Re-queue in OPD and notify clerk one is back from PFT	3 mins
Wait to be called for Obs.	10 mins
Wait to be called by Consultant	39 mins
Total average wait time	107 mins
TAT	142 mins
Wait time/Non-value added activities as % of TAT	75%

**Table 5. Non-value added time as % of total TAT (Post-intervention)**

Post Intervention (Data extracted from data audit observation sheet- appendix 13)

Non-value added activities (post-intervention)	Average time in minutes
Wait in PFT Lab	22 mins
Walk to OPD	4 mins
Queue to Register in OPD	4 mins
Wait to be called for Obs.	10 mins
Wait to be called by Consultant	42 mins
Total average wait time	82 mins
TAT	118 mins
Wait time/non-value added activities as a % of TAT	69%

Post-intervention resulted in the elimination of 2 non-value added steps which from the patient's perspective are viewed as non-value adding to their clinical experience. Elimination of the movement and re-queuing of the patient was achieved through redesign and rewording the content on the appointment letter, thus ensuring all patients are aware of what department to be at and at what time. From Table 4 one can see that the proportion of non-value added activity pre-intervention represented 75% of the patient's average TAT. In comparison post-intervention, the proportion of non-value added activities represented 69% of the patient's average TAT.

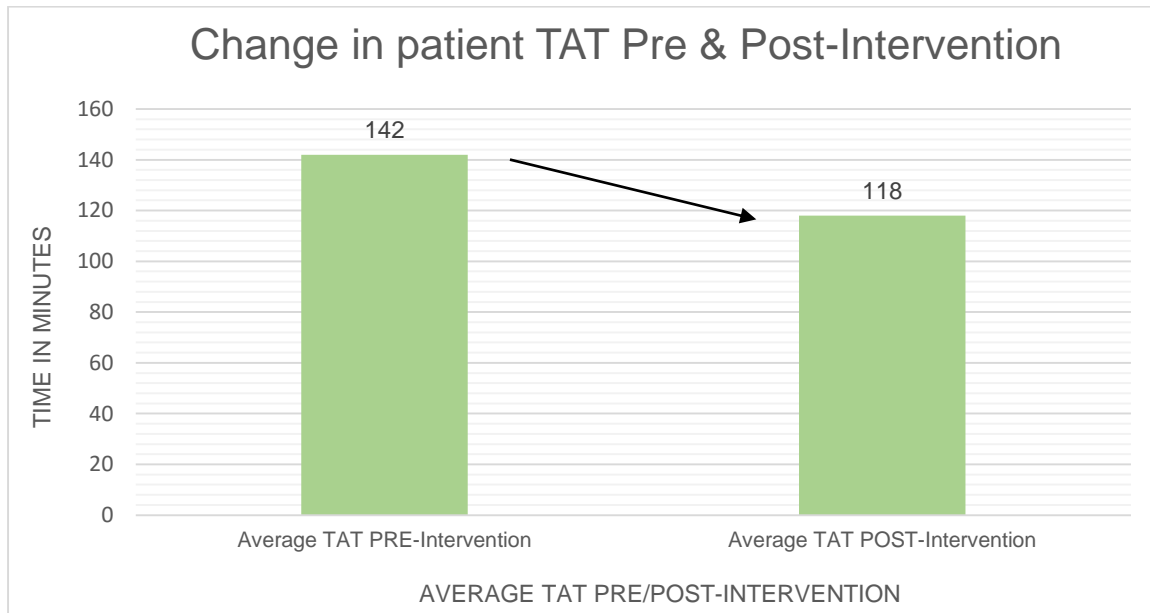
**Objective 4:** To reduce patient TAT by approximately 20 minutes.

Implementing clear communication on the Respiratory appointment letter resulted in patients attending the right department at the right time, thus enabling the achievement of objective 1 which led to a staggered flow of patients through the clinic. This similarly resulted in the achievement of reducing waiting time in the PFT waiting room (objective 2). Likewise, such resulted in the attainment of removing 2 non-value added steps in the patient's clinical journey (objective 3). These combined results all fed into reducing patient TAT post-intervention.

Nineteen patients over two clinics post-intervention were randomly selected in which their times at each stage of their clinical journey was recorded (appendix 13). This was to ensure the sample size pre-intervention was equal to that post-intervention.

As we can see the average TAT pre-intervention is 142 minutes and that observed post-intervention was 118 minutes.

**Figure 5. Average patient TAT (Pre & Post-intervention)**



Applying descriptive statistics one can claim that there was an observed average TAT reduction of 24 minutes, thus representing a 17% reduction in overall patient TAT. Looking at the pre and post-intervention average results we can see the difference, but we cannot be sure if it is a reliable difference.

An integral component of evaluation relates to validity and reliability of the data collected and analysed. According to Cohen, Manion and Morrison (2013) state, "Validity refers to the appropriateness and accuracy of the data collated" (p.179). On the other hand, the authors articulate that reliability refers to the idea if the change project were conducted in another setting would the results be similar or different? Thus, reliability is a measure of consistency over time and over similar samples (Cohen et al., 2013, p. 200).

As data reliability is a vital component in evaluation, the writer deemed it imperative to determine how one can say for sure that the observed reduction in the average TAT was not due to chance of the sample size selected that led to this result. To ensure reliability, the writer decided to conduct an independent t-test to test for reliability.

A t-test is a statistic that checks if two averages are reliably different from each other. The t-test is an inferential statistic, that is, it allows one to make inferences about the population beyond our data (the sample that we are testing). The t-test will tell us how likely this difference observed is likely to be reliable? Or whether it is just due to chance?

An independent samples t-test was used to check the effectiveness of the (intervention) in reducing patient TAT. For the t-test, we have to formulate the null hypothesis.

We declare the null hypothesis to be:

Pre-intervention population TAT mean = Post intervention population TAT mean

Null hypothesis:  $H_0 = \mu_{x_1} = \mu_{x_2}$

$\mu$  = population mean

$x_1$  = pre-intervention

Alternative hypothesis:  $H_1 = \mu_{x_1} \neq \mu_{x_2}$

$x_2$  = post-intervention

$$t = \frac{\bar{x} - \bar{y}}{\sqrt{\left[ \frac{(n-1)s_1^2 + (n-1)s_2^2}{n+n-2} \right] \cdot \left[ \frac{n+n}{n \cdot n} \right]}}$$

**Table 6. Patient TAT for T-Test analysis (Pre & Post-intervention)**

Observation	Group A (PRE-intervention)	Group B (POST-intervention)
1	212	157
2	192	154
3	180	150
4	167	146
5	160	145
6	155	121
7	149	119
8	146	118
9	145	114
10	141	112
11	139	110
12	132	107
13	126	106
14	124	106
15	122	100
16	111	98
17	109	92
18	93	91
19	90	88
Mean	142	118
Standard deviation (s)	31.87	22.25
Number of observations(n)	19	19
Variance (s <sup>2</sup> )	1015.54	495.26

$$t = \frac{\bar{x} - \bar{x}}{\sqrt{\left[ \frac{(n-1)s^2 + (n-1)s^2}{n+n-2} \right] \cdot \left[ \frac{n+n}{n \cdot n} \right]}}$$

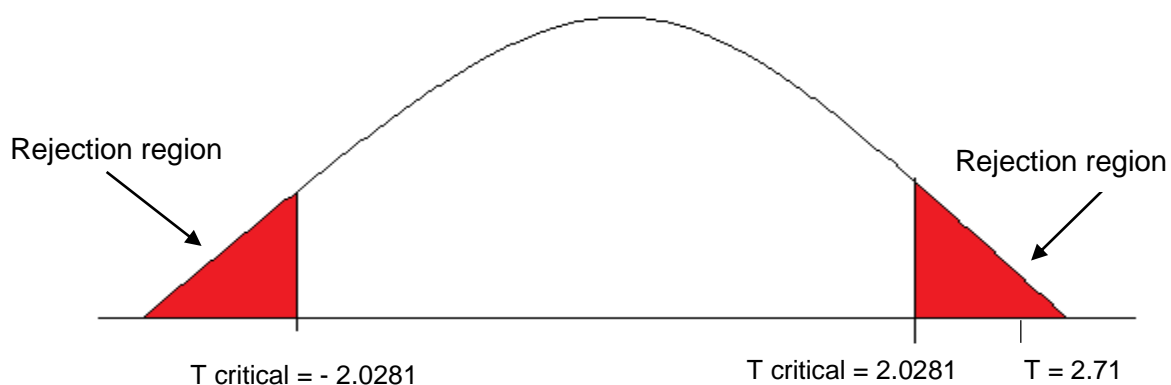
$$T = \frac{142 - 118}{\sqrt{\left[ \frac{18279.68 + 8914.63}{36} \right] \cdot \frac{38}{361}}}$$

$$T = 2.71$$

T = 2.71      n=19   n=19   degrees of freedom (d.f = n+n -2) = 36      two tail test  
95% confidence interval

From the t-test statistics tables'  $t_{\text{critical}} = 2.0281$  (Appendix 14)

**Figure 6. Bell Shape Curve for T-Test Analysis**



As our calculated independent t-test of  $t = 2.71$  is greater than  $t_{critical} = 2.0281$  (appendix 14) and thus falls within the rejection region, we reject the null hypothesis and can conclude that the two means in TAT are reliability different due to the intervention.

#### **4.5 Conclusion**

In its entirety, the introduction of a single page letter containing both the Respiratory patient's PFT and OP consultation appointment was a success. Evaluation of each objective has resulted in the aim of the initiative to be attained. The combined effect of all patient's arriving in the PFT Lab first before their OP consultation enabled the smooth and steady flow of patients through the clinic process. This meant patients arrived in a staggered manner which the appointment system was originally designed for. Thus, such resulted in freeing up waiting time in the PFT Lab, which was identified as a functional bottleneck. Likewise, the removal of 2 non-value added steps in the patient's clinical journey contributed to a reduction in patient TAT to be attained. Each objective combined resulted in an improvement in Respiratory patient's clinical journey thus creating a smoother and steady flow of patients through the clinic post-implementation.

## **5.0 Discussions and Conclusion**

### **5.1 Introduction**

The introduction of a simplified letter of communication to Respiratory patients was achieved and as detailed in chapter four the overall aim which was to improve the clinic journey of Respiratory outpatient's utilising an audit study was accomplished. The conduction of the literature review on patient communication highlighted the existence of JCI guidelines on written healthcare communication which proved valuable to this initiative. The HSE change model was applied to structure the OD project and provided the necessary guidance for successful evaluation and organisational change. This chapter will provide a critical discussion on the impact of the project for stakeholders and the related strengths and limitations associated with the project. It similarly discusses further areas for improvement and presents future recommendations.

### **5.2 Project impact**

#### **5.2.1 Patients**

As healthcare providers, the aim is to deliver a high-quality healthcare service in which the aim of this OD was to improve the clinic journey of Respiratory outpatient's. Such was attained through the implementation of a simplified and easily communicated single appointment letter which ensured patients attended the right department at the right time. As post-intervention evaluation highlighted a reduction of 24 minutes in overall patient TAT was observed and checked for reliability, thus it



can be considered to be an improvement in performance. When outlined against the four 'P' model (performance, purpose, process and people), whereby performance comes from a synergy of purpose, process, and people, the improvements can be seen within the context of the organisation. In contrast pre-intervention, people (staff and Respiratory patients) were trying to work in a process that was not aligned with either the people or the purpose. It is understandable therefore that the performance level was low with pre-intervention evaluation highlighting additional non-value added steps in the patient's clinical journey leading to long patient waiting time and the creation of a bottleneck in the PFT Lab. The purpose of the new initiative has now closer aligned people and the processes which have improved the patient's clinical journey thus leading to an improved performance level.

### **5.2.2 Staff**

Underpinning the achievement of the change initiative was that of an improvement in culture among the department staff. As identified in the initiation stage by applying the Goffee and Jones (1998) framework, the OPD was initially identified as a 'networked' culture. The writer would argue that this has further developed and is now closer to the 'communal' culture which is seen as the ideal state. The writer articulates this shift in culture from the leadership shown amongst staff in growing the project and the uptake and commitment from the staff who understood the opportunity and need to move from an old stagnant state to a future improved and desired state.

This improvement achieved in the Respiratory clinic by changing the letter content and design to a more patient-friendly letter has led other departments to re-look and

redesign their own OP letter content and information. Since the writer conducted this initiative, the Urology team have now decided to change their appointment templates to include a piece to remind patients to get a PSA blood test completed 10 days prior to their OP appointment. This information was not on Urology appointment letters which resulted in many patients attending their yearly or 6 monthly appointments without their PSA blood test complete, thus often rendering the patients Urology OP appointment useless. The incorporation of this new content on Urology OP letters should hopefully see an increase in patients attending their OP appointments with their PSA complete beforehand. It was the initiation of the writers OD project that stemmed the Urology team to address and redesign their OP appointment letters. This project by the Urology team is presently in the planning stage.

### **5.2.3 Financial Perspective**

The change initiative to have both appointments on one page naturally resulted in a reduction in paper usage as well as the use of associated consumables such as printer ink. The writer did not conduct a cost saving analysis on this aspect; however, one can anticipate that the move from utilising two appointment letters to one letter will result in a cost reduction in the use of such materials.

### **5.2.4 Writer's Perspective**

The writer successfully implemented their change idea within the organisation which from a personal perspective enhanced their level of confidence and developed their networking skills with various groups throughout the OD process. The writer now

feels more confident and better equipped to engage in further change projects going forward.

### **5.3 Theory and Practice**

Prior to commencing the change process, the writer conducted a literature review which focused on patient communication between HCP's and the patient. The literature review encouraged and substantiated the conduction of the project as it outlined the important role of communication in the HCP-patient relationship (whether written or verbal). Likewise, the literature review highlighted international guidelines and best practice on written communication in healthcare, as well as heightening one's awareness of communication barriers such as health literacy, culture and language differences which may exist in the communication process (Schyve, 2007). The evidence-based research conducted during the literature review stage acted as leverage in gaining buy-in at various stages of the project.

### **5.4 Strengths of the project**

Without a doubt, the main strength of the project lay with all those who fully engaged in the change process to make implementation a success. The collective participation of all stakeholders; the Respiratory Consultants, Respiratory nurses, OPD CNM, OPD Clerical Supervisor and most importantly those who willingly and successfully implemented the new single page appointment letter, the OPD clerical staff. The writer depended on various stakeholders' advice and ideas at various

stages through the change process. The writer depended on the Consultants advice in relation to the content of the newly designed letter as well as the expertise of the OPD clerical staff and IT administrator as to how the new appointment template would best sit on the IPMS IT platform interface for everyday use. As noted by Drucker, *“Organisations don’t change, it is people who change the organisations and hence are the greatest asset”*. The aim of the initiative would not have been achieved without the participation, co-operation, engagement and support of all staff involved. This cohesive and collaborative approach during the change process enabled the OPD to move closer to a ‘communal’ culture which was previously described as the ideal cultural state.

From an implementation perspective, the change initiated was one which resulted in removing waste from work processes for the OPD clerical staff and hence the resistance expected from the outset by the writer was not encountered.

### **5.5 Limitations of the project**

In contrast to the benefits realised by the intervention the author is aware that this project is not without limitations. A limitation of this study was the relatively small sample size of 19 patients who were observed for data collection purposes pre and post-implementation. This limitation was a result of the timeframe available to the writer to implement the OD initiative as, auditing, observing and shadowing patients is a time-consuming process.

Much of the literature on evaluation highlights that if one's sample size is too small it will be difficult to find significant relationships from the data. Hackshaw (2008) articulates that for reliability statistical tests normally require a larger sample size so as to ensure a representative distribution of the population and to be considered representative of groups of people to whom results will be generalised or transferred. Despite the small sample size, the writer performed an independent t-test for reliability which showed statistical significance. However, according to Hackshaw (2008) when conducting an independent t-test a sample size of between 20 and 50 participants is necessary. In this respect, the writer had a sample size of 19 which is one short of the recommended minimum sample size of 20 required for an independent t-test.

The type of data collected is time spent at each point in the Respiratory patient's clinical journey. Each data point in such a sequence is not necessarily independent. That is, the scores (time) spent by one patient (for example with the doctor) influences the time spent waiting by another patient. As the outcome on one score influences another, all observed data points are not necessarily independent, and this should be noted.

The measure used to collect the data could be viewed as a limitation. The writer was observing the time patients spent at each stage of their clinic journey. As times spent at each stage were approximated (rounded to the nearest minute) the writer understands that a small margin of error will exist. It was unattainable to record the exact time in terms of minutes and seconds for each patient observed.

Another limitation acknowledged by the writer is that data collected was solely quantitative in nature. In research, the use of quantitative over qualitative or vice versa has been a matter of controversy as to which one is better. Much literature around evaluation contests that ideally a mixture of both methods should be incorporated. According to Ragin (1994), a mixed method should be adopted as quantitative techniques are data condensers which condense data in order for one to see the big picture. On the other hand, qualitative methods are best understood as data enhancers. Ragin (1994) thus contests that when data is enhanced it is possible to see key aspects of cases more clearly (p. 93).

The writer acknowledges that like anything there is always pros and cons to each method applied. Advocates of quantitative methods argue that by using only such methods can social sciences become truly scientific. In contrast advocates of qualitative methods argue that quantitative methods tend to obscure the reality of the social phenomena under study because they underestimate or neglect the non-measurable factors which may be the most important (Winter, 2000).

## **5.6 Recommendations**

If the writer had to conduct this change project again, one would utilise email for communication with stakeholders more frequently to keep stakeholders informed at each stage of the change process. The writer throughout the change project mostly met up with each stakeholder on a personal basis to receive feedback and inform of the OD progress. On reflection the writer feels this communication approach

throughout the change was particularly time-consuming as various stakeholders had different working timetables thus making it difficult to meet at a time that suited both the change agent and the stakeholder (See Reflective learning).

From an OD evaluation perspective the writer acknowledges that the omission of qualitative data is something that could be incorporated going forward such as capturing the patient's perspective via patient surveys or questionnaires. Such may further reveal areas for improvement within the existing process which may be invisible to the change agent and to those working in the process.

The writer also understands the need for repeating the movement and time monitoring of patients so as to compare the results and assess if significant variations in recordings are occurring over time. This enables the change agent search for further possible modifications or improvements that could be made. This is a vital component of the iterative PDSA cycle in order to continuously search for greater improvements.

From an organisation perspective, the writer would recommend that identifying each and every stakeholder that may be affected by the project is vital as often some peripheral stakeholders may be left out unintentionally (See Reflective learning). Thus, the writer would recommend any change agent to firstly do a walk-through of the patient's clinical journey and identify all people in the surrounding environment throughout the clinic process.

The writer also recommends the need for change champions by empowering staff to articulate ideas and improvements they see within their own area of work. Private sector organisations often strongly encourage intrapreneurship whereby management provide incentives for workers to articulate new ideas or improvements that could be made to existing processes. The idea is that on the ground worker tends to have greater knowledge of problems within their own areas and thus workers should articulate if something can be done better. Thus, healthcare organisations should incorporate programs utilised in the private sector to promote bottom-up change in the sector.

## **5.7 Conclusion**

Healthcare institutions around the world are facing similar underlying problems like that shown in this thesis, and therefore, it is important to concentrate efforts to reduce activities that do not add value to the patient and to manage key resources efficiently. Identifying the root which is causing wastage to occur in a process is a key aspect to ameliorating and finding a solution to the problem at hand. Poor communication detailed on OP appointment letters were the root cause resulting in some patient's to endure non-value added steps and long TAT at the Respiratory clinic. By amending the communication content in a more patient-centred manner thus ensured the positive knock-on effect was observed in the patient's clinical journey.

Lean analytical tools such as process mapping (which was utilised in this OD initiative) provides the methodology to identify different sources of waste and areas



for improvement in current practices. Essentially it provides the healthcare industry with the opportunity to improve operations in the delivery of care which impacts and forms the patient's experience. This thesis only applies lean to a minuscule aspect of the entire healthcare system, yet evaluation on real data acts as social proof of such an area where lean principles can be successfully adopted.

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## Appendices

### Appendix 1 – Current PFT Appointment letter in use

Address and contact number of hospital organisation  
inserted here on headed paper

Organisation Crest  
inserted here

#### Pulmonary Function Request Form

Mr. Joe Bloggs  
123 Yellow Brick Road  
Douglas  
Cork

RID:

DOB:

Doctors Name: Dr. ....

Ward: .....

patient ID number (MRN)

Clinical Diagnosis / Question: .....

#### Consultant Respiratory Physician Only:

Spirometry	
Spirometry with reversibility	
Lung volumes	
Transfer factor for carbon monoxide	
Maximum inspiratory & expiratory pressures	
Exercise challenge (spirometry pre- and post-exercise)	
Skin Prick testing to common allergens	
Overnight oximetry	

<i>Airway hyper-responsiveness testing</i>	
Methacholine challenge	
Mannitol challenge	

<i>Sleep Diagnostics</i>	
Full polysomnography	
Multi-channel sleep recorder	
APAP study for CPAP titration	

Cardiopulmonary Exercise Testing	
----------------------------------	--

PFT  
appointment  
date and time

Signature of requesting physician: .....

Date: .....

For patient: Appointment Date: Wednesday 16th September 2015 Time: 11:45

Please attend Pulmonary Function Department, second floor, organisation name Hospital.  
Phone: .....

If this is your first time attending for pulmonary function studies, please do NOT TAKE any inhalers or nebulizers on the morning of the test.

If this is not your first time attending for pulmonary function studies, please TAKE any inhalers or nebulizers as usual.

Hospital contact details

Directors of hospital organisation listed here

## Appendix 2 – Current OPD Respiratory Appointment

Address and contact number of hospital organisation  
inserted here on headed paper

Organisation  
Crest inserted  
here

### OPD APPOINTMENT OFFER

Mr. Joe Bloggs  
123 Yellow Brick Road  
Douglas  
Cork

15th September 2015

Dear Joe Bloggs,

Regional Identifier: **patient ID number (MRN)**

OPD  
appointment

An appointment has been arranged for you to attend the Outpatient Department on **Wednesday 16th September 2015** at 11:45 to see Dr. **.....** (Respiratory Medicine).

#### Please note

- Children under 18 years must be accompanied by an Adult.
- Patients cannot attend at the Outpatients Department without a pre-arranged appointment.
- Patients may register no sooner than fifteen minutes before the scheduled appointment.
- Patients are seen in order of appointment time.
- You will be seen as near as possible to your appointment time, however on occasion delays do occur.
- The **.....** Hospital operates a Smoke Free Policy in all its premises.
- The **.....** Hospital is a teaching hospital. Medical and Nursing students are present at clinics, however should you wish not to have students present please inform a member of staff.
- After consultation it is imperative that you return to the reception desk.

#### Cancellations/Rescheduling appointments

Considerable time and resources are involved in organising your appointment. If you do not want to avail of this appointment or you wish to reschedule your appointment please contact the OPD Central Appointments Office not later than 48 hours prior to your appointment. This appointment slot can therefore be allocated to another patient.

Failure to notify the hospital of your inability to attend for your appointment denies other patients of the opportunity to be seen in OPD.

If you fail to attend your appointment you will be discharged back to your GP. A new referral will be required and you will be placed at the end of the waiting list.

#### OPD Central Appointments Office contact detail to cancel / reschedule only:

Phone: **Contact details of organisation are here**  
Email:  
Fax:

#### Please bring the following with you

- This correspondence with you on your attendance at the clinic.
- A list of all medications you are currently taking and the dosage.
- Your medical card or any other relevant health cover information.

**Outpatient Location:** The Outpatient department is located across the road from the **name of organisation** Hospital and down the side street **name of street inserted here**

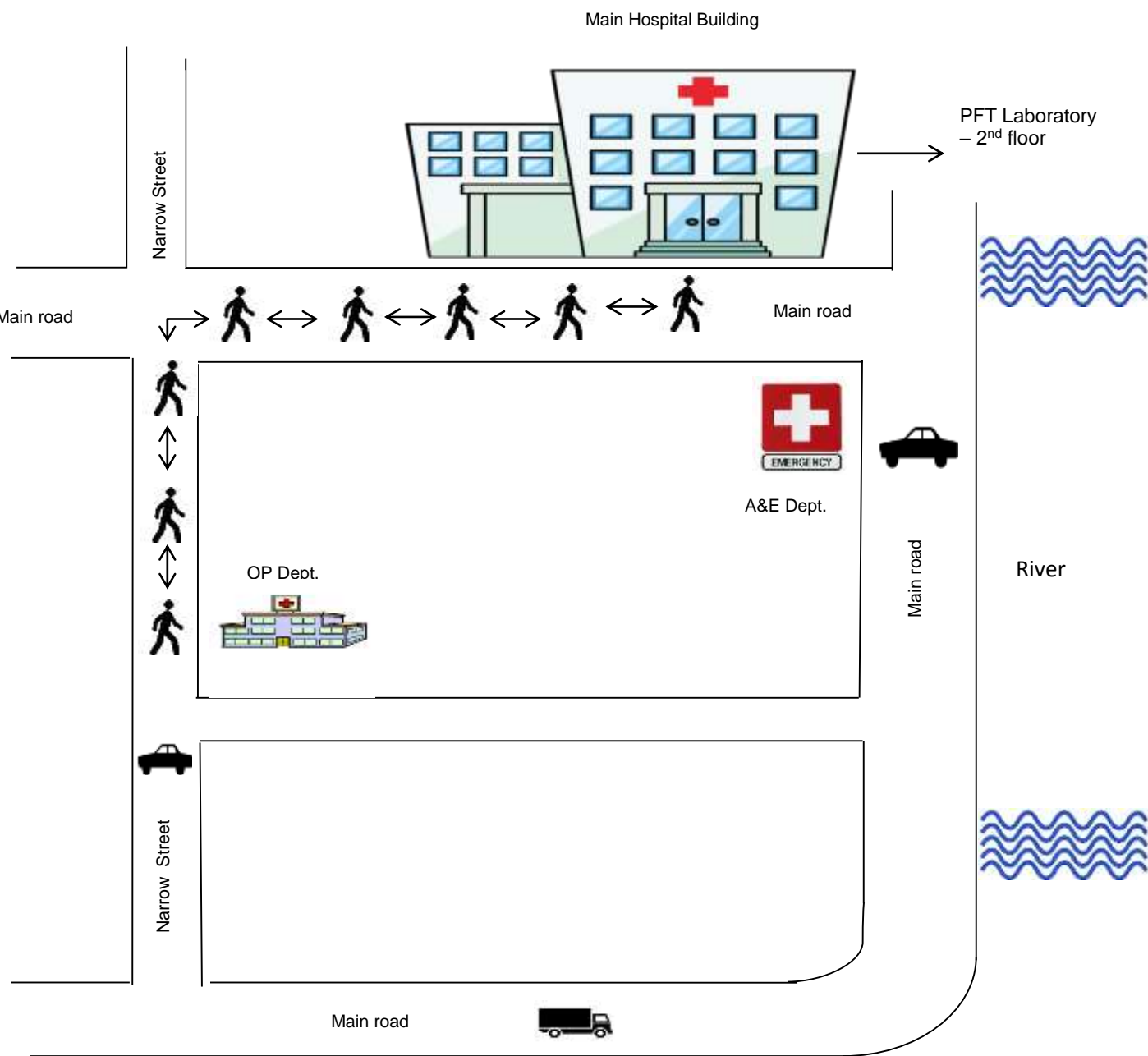
Yours Sincerely,

Signature: **Name of OPD CNM**  
Clinical Nurse Manager

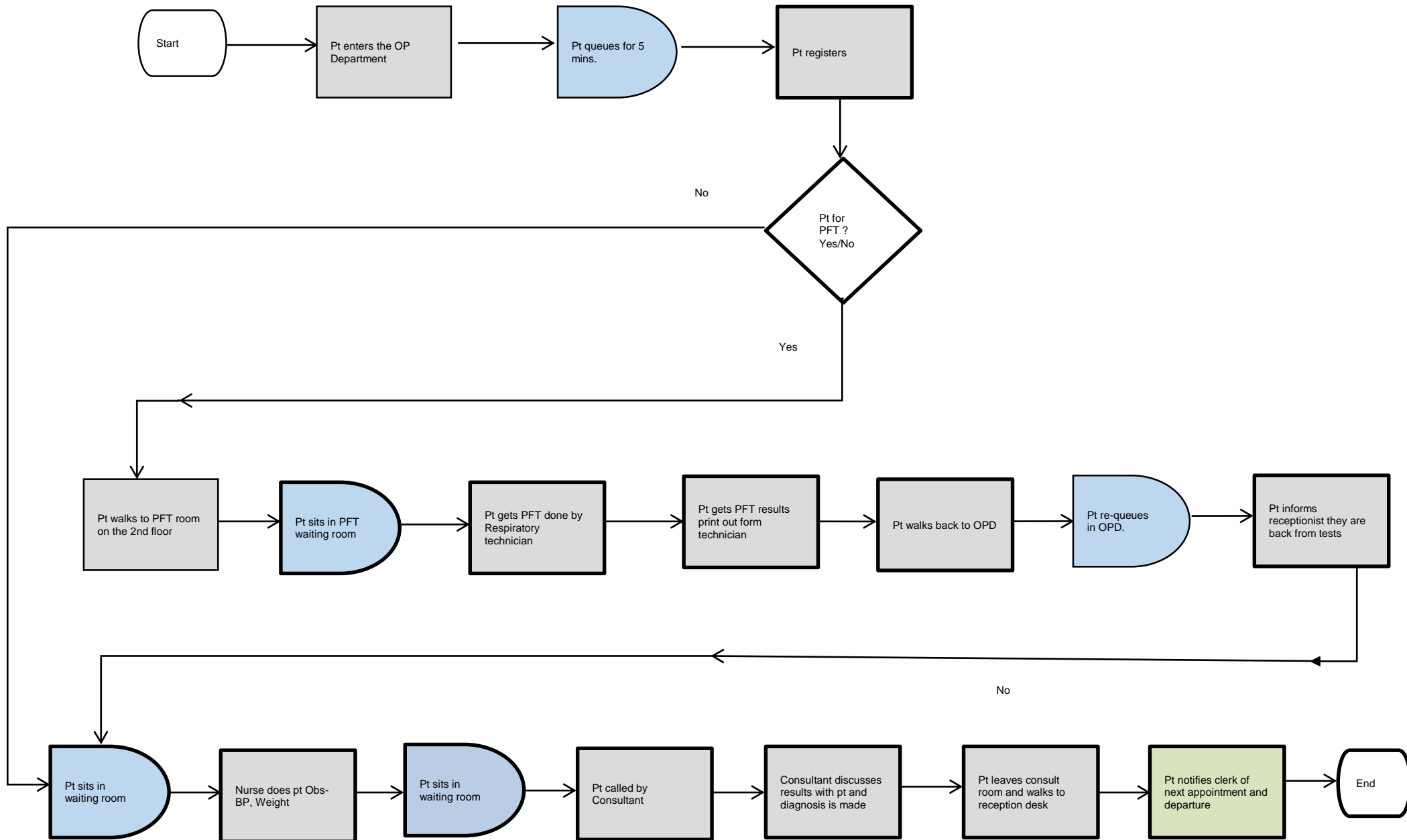
Date: **15th September 2015**

Directors of hospital organisation listed here

Appendix 3 – Street Map of Main hospital building and OPD location

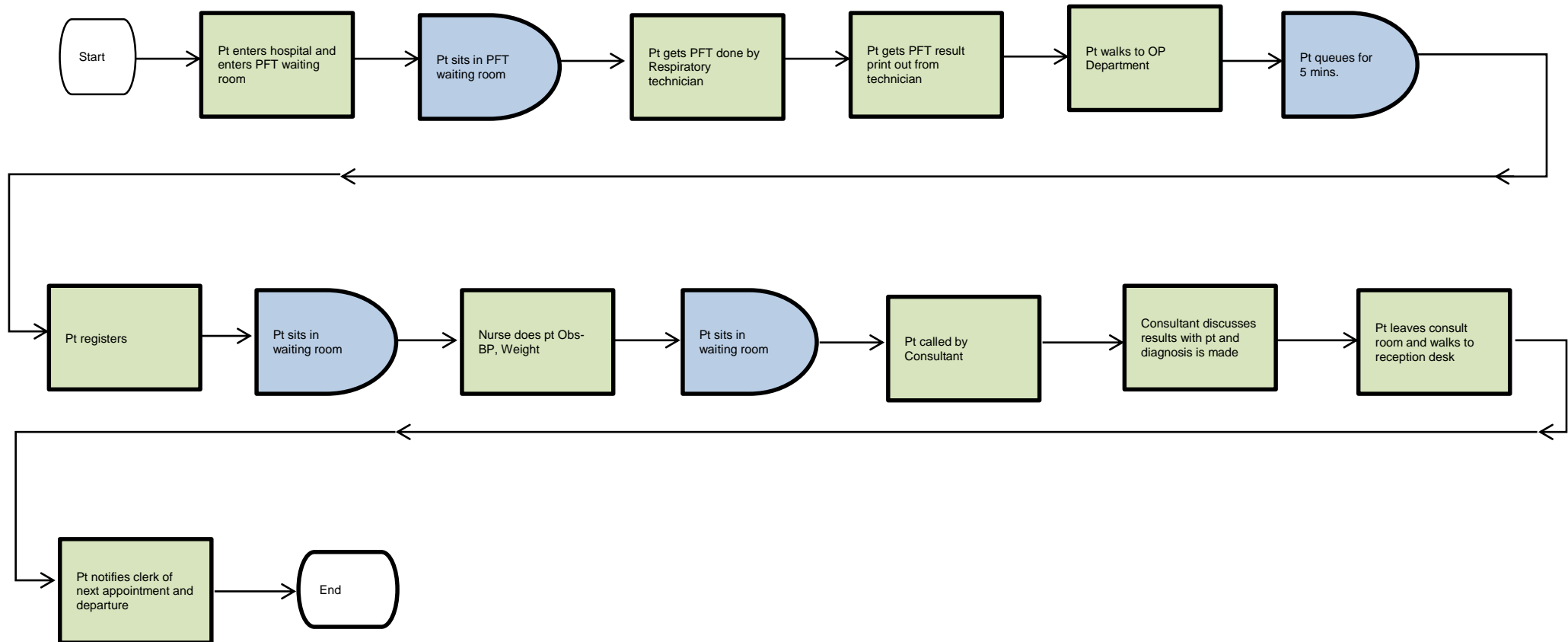


## Appendix 4 - Current Patient Process Map for Respiratory Outpatient's Clinic

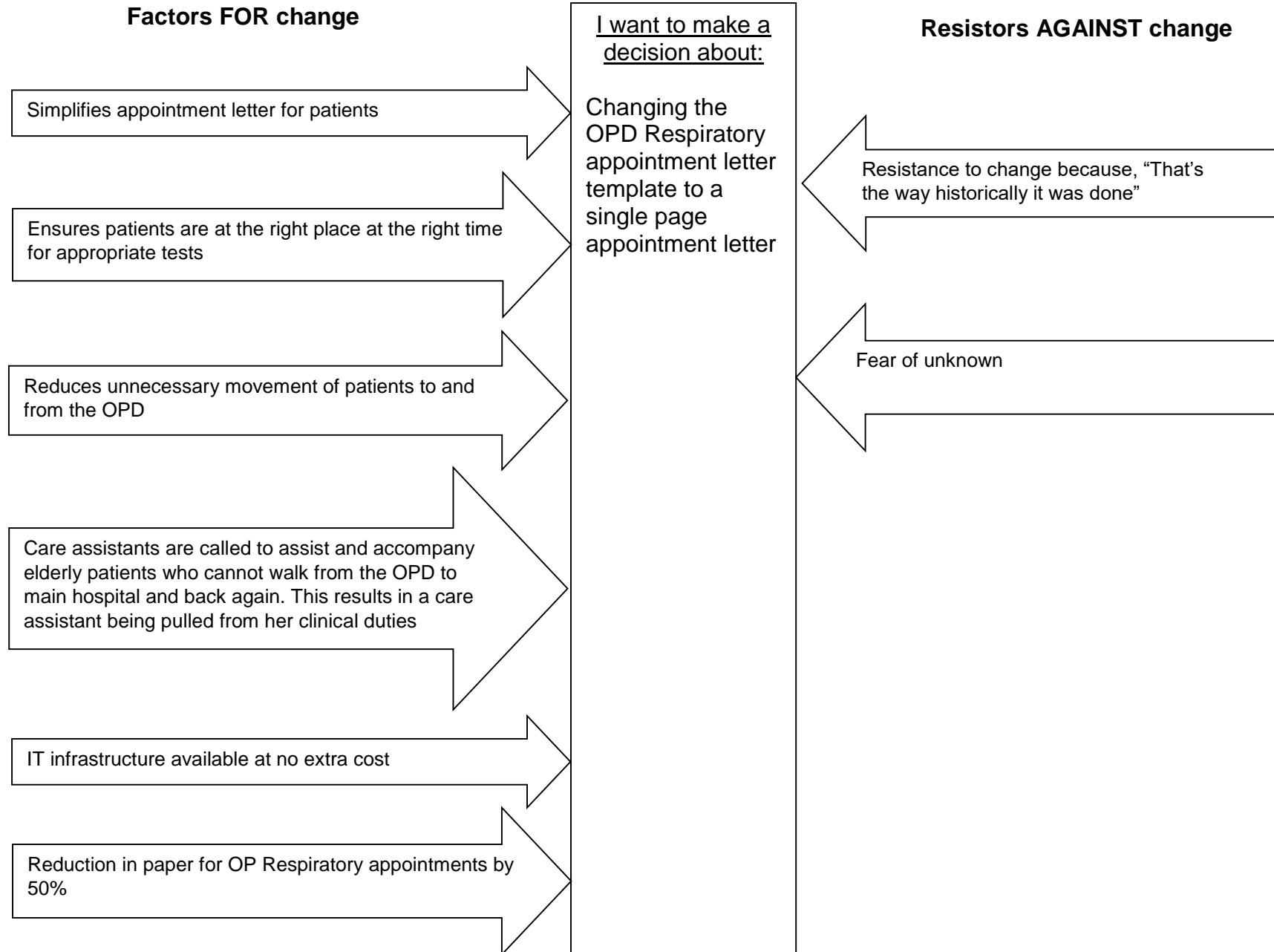




## Appendix 5 - Redesigned Patient Process Map for Respiratory Outpatient's Clinic



## Appendix 6 – Kurt Lewin Force Field Analysis



### STRENGTHS

- Strong line manager encouragement and support for the OD initiative.
- The JCI guidelines can be used to set appointment template standards.
- Nursing staff don't have to be monitoring when patients are sent to the PFT Lab and when they arrive back to the OPD.
- Clerical staff don't have to walk to and from the centralised office printer to ensure both appointment letters are kept together as this will change from 2 pages to 1 page.
- The change agent has a good working relationship with clerical staff in OPD.
- The OD initiative does not require any finance/funding
- Cost saving - reduces paper usage on Respiratory appointment letters by 50%.

### WEAKNESS

- IT limitations may hinder the appointment template design and layout to a certain extent.
- Accuracy of times recorded during patient observation process.
- Sample collection size pre and post-intervention may be considered small in determining the true effect of the OD due to time constraints.

### SWOT Analysis

### OPPORTUNITIES

- Opportunity to introduce similar appointment templates in other Departments/specialities whereby patients require diagnostic tests on the same day as their OP consultation.
- To network with various individuals working in other departments.
- Enhance teamwork and collaboration between departments by meeting together in the planning phase of the OD project.

### THREATS

- Simultaneous projects which may be deemed more important than this OD project.
- Possible introduction in the future of patient electronic messaging system (SMS technology) for OP appointments which could result in the obsolescence of OP appointment paper letters.
- Potential resistance to change may hamper implementation.
- Potential differences in stakeholder opinions on the project leading to conflict.

# What's my Culture?"

### Four Tests to Find Out

**Chapter 3 (Goffee and Jones 1998) The Character of a Corporation.  
(Harper Collins Business)**

Goffee and Jones (1998) sociability/solidarity matrix is used to assess the culture of an organisation. It consists of **four tests** to find out.

The **first** is an observational checklist. Goffee and Jones (1998) sort the four main cultural types by how physical space is set up, how people communicate with one another, how time is used, and how people express their personal identities.

The **second** tool is a straightforward questionnaire that asks you to consider twenty-three statements about your organisation/department and mark how strongly you agree.

The **third** tool takes the result of the second - which is the identification of your cultural type and tests to see if it is in the positive or negative form.

**Finally**, the fourth tool presents ten scenarios for each culture, which you must identify how people would react in your organisation/department. The results of this exercise will further confirm if you have correctly identified your culture and its balance of positive and negative behaviours.

## Part 1: The observational checklist (Goffee and Jones 1998)

### Physical Space

Physical Space	
<p><b>Networked</b></p> <p>Office doors are open or unlocked; people move freely into and out of each other's rooms. Offices may be decorated with pictures of family, postcards, cartoons, humorous, notes/pictures of colleagues. Large allocations of space are for social activity: bars, coffee lounges, sporting facilities, etc. "Privileged" space (larger offices; car parking) is linked to the formal hierarchy, but there are also "deals" favouring some rather than others. There may be corporate logos but in negatively networked organizations these may be a source of amusement. Similarly, different territories within a building may be decorated and defended in ways that set them apart from others; the marketing department may become effectively a "no-go" zone for the finance people and vice versa. Outsiders are likely to be spotted- they will knock on doors before they enter; will be dressed differently, etc.</p>	<p><b>Mercenary</b></p> <p>Space is allocated "functionally"- in ways that help to get the job done. Open-plan or flexible desk use is possible- but in order to assist with simple, efficient, and cost-effective methods of means of task achievement, not "chatting". Uninvited visitors/people that drop by are likely to be shooed away if someone is busy. Little space is wasted in work areas, although entrances may be designed to underline fearsome reputation. Office decorations may be dominated by awards, recognitions of achievement, etc. Space allocation is linked to achievement, and there are no favours in the car park; indeed, the priority may be the customer.</p>
<p><b>Fragmented</b></p> <p>Space is designed to help individuals work without interruption. Office doors are closed, and offices are well equipped so that employees are effectively self-contained. Much of the time these offices may be empty (people are on the road; working from home; at a conference, etc.) but it is hard to tell if they are there or not. Some individuals may make their elusiveness a trademark (a common joke in this context: "What's the difference between Jo and God? God is everywhere; Jo is everywhere but here!"). In the "virtual/fragmented" organization there is little corporate space- work is conducted from home, the car, etc.</p>	<p><b>Communal</b></p> <p>Much space is shared either formally (open plan) or informally (lots of movement in and out of offices). It may sometimes be difficult to determine whose office you are in, and there are few barriers between departments or functions. There are unlikely to be big differences in space allocation between people. Formal social facilities are supported by extensive informal socializing; food and drink spread into "work" space. The corporate logo is everywhere; office decoration will improve around, extend, or adapt the language of the company values, mission, or credo.</p>

### Your Organisation or Department:

Physical Space
Your Organisation is
Your Department is <b>NETWORKED</b>

## Part 1: The observational checklist

### Communication

Communication	
<p><b>Networked</b></p> <p>There is a lot of talk. Although there are formal hierarchies and processes, much communication takes place around the formal systems in face-to-face conversations, on the phone, in “meetings before meetings.” Paper-based documents may be annotated by hand before being passed on to some others in the network. E-mail may be used to gossip. In highly politicized networked cultures papers may be copied routinely to key players. Skillfully managed, the networks span the business and assist integration, but often cliques and factions form around functions, levels, businesses, or countries, that impede communication. On the other hand, because there is a lot of talk, there is the possibility of rapid information exchange and increased creativity.</p>	<p><b>Mercenary</b></p> <p>Communication is swift, direct and work- focused. Tense memos and data-laden reports leave little room for “idle” conversation. Conflicts are unlikely to be resolved by gentleman’s agreement; face-to-face confrontation or legalistic duelling (speak to my lawyer) are more common. Communication across boundaries (hierarchy, geography, etc.) is expected and accepted if it is task-focused. Meetings are business like- well planned, and with a premium on actionable outcomes. The expression of personal problems is discouraged.</p>
<p><b>Fragmented</b></p> <p>Talk is limited to brief one-to-one exchanges in the corridor or on the phone. Meetings are resisted (what’s the point? difficult to arrange, hard to manage for any length of time without boredom, acrimony, or people simply walking out). Individuals will talk only to those who are “worth” talking to (to get rid of a problem; to pick their brains; to ask for resources); otherwise the deal is “I leave you alone if you leave me alone.” Key individuals may be difficult to find, even within your own department. Documents replace talk, but there is no guarantee that they will be read. Much communication is directed outside the organization- to clients and professional peers.</p>	<p><b>Communal</b></p> <p>There is communication in every channel, but oral, face-to-face methods are likely to dominate. Nonverbal communication is, nevertheless, important; dress, colour, and symbolism may all help individuals to feel close to others. Communication flows easily inside between levels, departments, and across national cultures (the cult encompasses all), but outsiders may feel excluded. Talk is littered with the private company language reaffirming the bonds between “us” and the differences from “them.” It is difficult not to talk, and there are few secrets-private or professional. Guilt and shame are used to correct “closed” behaviour.</p>

### Your Organisation or Department:

Communication
Your Organisation is
Your Department is NETWORKED

## Part 1: The observational checklist

### Time

Time	
<b>Networked</b>  People use work time to socialize- and they are not penalized for doing so. To some extent, the reverse applies-“All work and no play make’s Jack, a dull boy.” In addition, social activities are often extensions to the working day. This may make the “working day” long, but some part of it may be in the bar, on the golf course, or at the social club. People get to know each other quickly, and many have known each other for a long time.	<b>Mercenary</b>  Long hours are the norm, although it is acceptable to leave once the job is done. This is clearly signalled since time and performance measures are explicit. Private time is precious and, where possible, protected (it is what’s left if you don’t cut it at work). It takes a long time to know people other than in their work roles, “idle chat” is regarded as a waste of time.
<b>Fragmented</b>  People go to the office only when they need to; absence is the norm. Achievement, not time, is the measure (and the achievements may take a long time to deliver). Most time is devoted to the pursuit of individual professional and technical excellence; anything that interferes with this- colleagues, administrative chores, even clients/customers can be considered a waste of time. It is possible for individuals to work “together” for many years without knowing each other( a common sign is for colleagues to reveal their ignorance of each other in front of clients at, admittedly rare, social events). Careful time management is key skill- often involving complex schedule control.	<b>Communal</b>  People live at work; professional life is so engaging that “conventional” time is ignored. Work and non-work life dissolve into one; even when at homework can be a preoccupation. Close working relationships may be reflected in friendship groups, marriage, affairs, etc. Work becomes a way of life; a social activity that is disconnected from professional interests may be regarded as a waste of time (work is relaxation and vice versa).

### Your Organisation or Department:

Time
Your Organisation is
Your Department is NETWORKED

## Part 1: The observational checklist

### Identity

Identity	
<p><b>Networked</b></p> <p>People identify with each other; close ties of sociability heighten feelings of similarity as individuals. Differences are understated, and if expressed at all they are seen in subtle variations of dress, code or speech patterns. Excessive displays of personal differences are resisted, and some store is set in long -established social rituals that tie people in even after they have left (social clubs, pensioners associations, and alumni associations). Personal loyalties persist; although in some contexts the company may be criticized, this is often manifested in dark humour- because it's little like criticizing yourself.</p>	<p><b>Mercenary</b></p> <p>People identify with winning. Although norms of behaviour emerge here as anywhere, differences between individuals are acceptable and encouraged if they assist in achieving the result. What draws people together are shared experiences, goals, and interests rather than shared sentiments or feelings? Ultimately, attachments are instrumental- the enemy may eventually be the next employer if it suits personal interests. There is no shame in shifting allegiance or ruthlessly exploiting knowledge of business weaknesses once employees move on.</p>
<p><b>Fragmented</b></p> <p>People identify with values of individualism and freedom; with personal technical excellence; with organizations that minimize interference. There are significant personal differences between individuals, but these are unlikely to impede achievement (there are low levels of interdependence), and they confirm values of freedom. Allegiance will be professional rather than organisational. Private lives are often a mystery; frequently a strong compensation for the loneliness of working in the fragmented.</p>	<p><b>Communal</b></p> <p>People identify with the values and mission of their company. The credo is lived; the words are played out, enacted, debated, applied and developed. Work becomes a way of life. Logos, symbols, war cries abound. Excessive identification (combined with a track record of success) can lead to a loss of perspective, intolerance of criticism, and complacency. The company attracts fierce loyalty. When individuals leave, they continue to be supporters. Indeed, their fervent identification can be disabling in their subsequent careers. Work identity is carried over into private life- logos on clothes, trying out company products at home, visiting company stores on weekends, etc.</p>

### Your Organisation or Department:

Identity
Your Organisation is
Your Department is NETWORKED



## Part 2: The Corporate Character Questionnaire (Goffee and Jones 1998)

Indicate how strongly you agree or disagree with the following statements.					
Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1. The group I am assessing (your organisation) knows its business objectives clearly	1	2	3 ✓	4	5
2. People genuinely like one another.	1	2	3	4 ✓	5
3. People follow clear guidelines and instructions about work.	1	2 ✓	3	4	5
4. People get along very well and disputes are rare.	1	2	3	4 ✓	5
5. Poor performance is dealt with quickly and firmly	1	2 ✓	3	4	5
6. People often socialize outside of work	1	2 ✓	3	4	5
7. The group really wants to win.	1	2	3	4 ✓	5
8. People do favours for each other because they like one another.	1	2	3	4 ✓	5
9. When opportunities for competitive advantage arise, people move decisively to capitalize on them	1	2	3 ✓	4	5

<b>Statement</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>10.</b> People make friends for the sake of friendship- there is no other agenda	<b>1</b>	<b>2</b>	<b>3</b> ✓	<b>4</b>	<b>5</b>
<b>11.</b> Strategic goals are shared.	<b>1</b>	<b>2</b> ✓	<b>3</b>	<b>4</b>	<b>5</b>
<b>12.</b> People often confide in one another about personal matters.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> ✓	<b>5</b>
<b>13.</b> People build close long-term relationships- someday they may be of benefit	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> ✓	<b>5</b>
<b>14.</b> Reward and punishment are clear	<b>1</b>	<b>2</b>	<b>3</b> ✓	<b>4</b>	<b>5</b>
<b>15.</b> People know a lot about each other's families	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> ✓	<b>5</b>
<b>16.</b> The group is determined to beat clearly defined enemies.	<b>1</b>	<b>2</b>	<b>3</b> ✓	<b>4</b>	<b>5</b>
<b>17.</b> People are always encouraged to work things out-flexibly as they go along.	<b>1</b>	<b>2</b> ✓	<b>3</b>	<b>4</b>	<b>5</b>
<b>18.</b> Hitting targets is the single most important thing.	<b>1</b>	<b>2</b> ✓	<b>3</b>	<b>4</b>	<b>5</b>

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
19. To get something done, you can work around the system	1	2	3 ✓	4	5
20. Projects that are started are completed	1	2	3 ✓	4	5
21. When people leave, co-workers stay in contact to see how they are doing	1	2	3 ✓	4	5
22. It is clear when one person's job ends and another person's begin.	1	2	3	4 ✓	5
23. People protect each other.	1	2	3 ✓	4	5

## Assessing your Organisation's Culture

### Scoring Key for Questionnaire

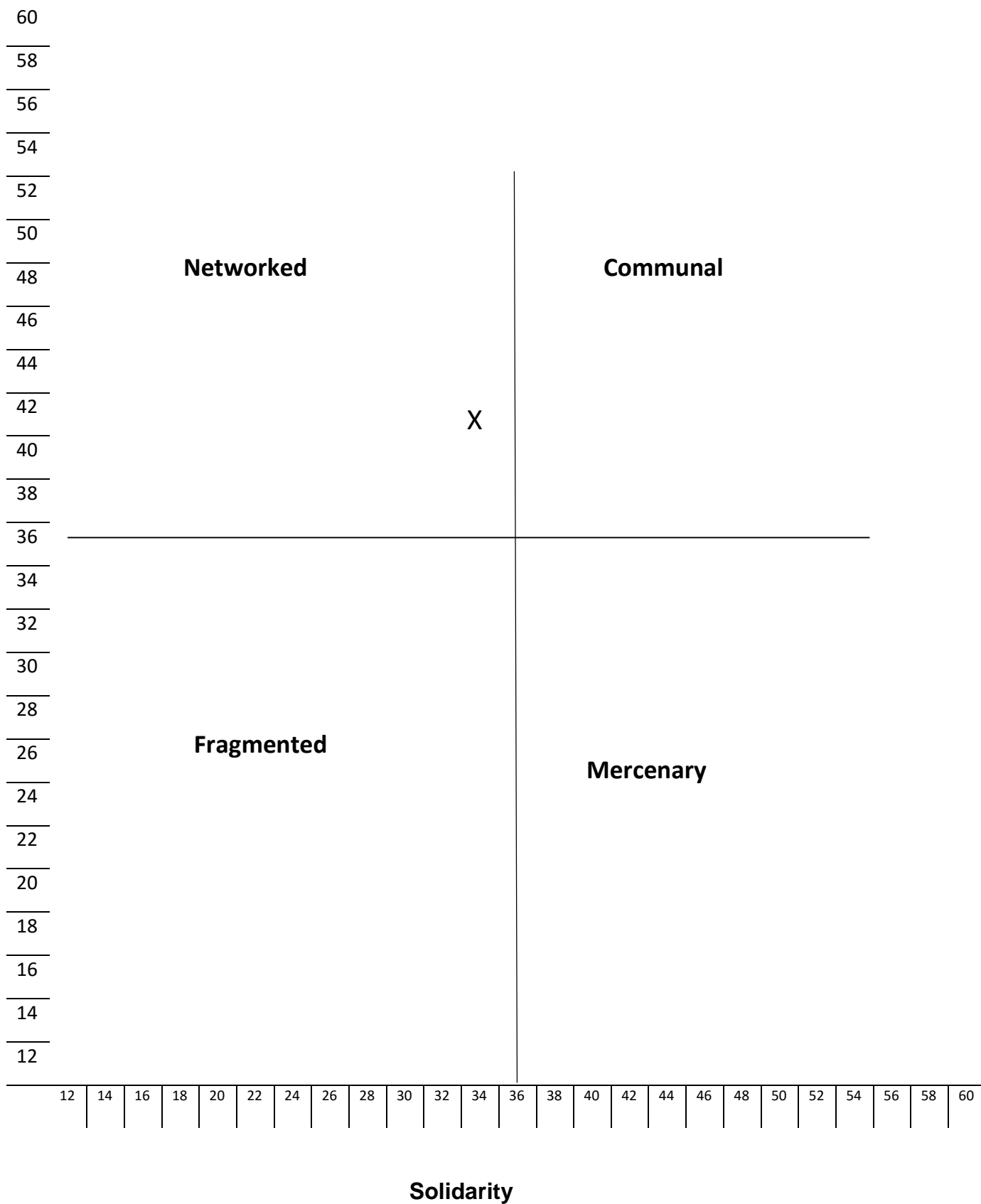
#### Sociability

$$\begin{array}{cccccc} 2 & 4 & 6 & 8 & 10 & 12 \\ \boxed{4} & + \boxed{4} & + \boxed{2} & + \boxed{4} & + \boxed{3} & + \boxed{4} \\ & & & & & = \boxed{40} \\ 13 & + 15 & + 17 & + 19 & + 21 & + 23 \\ \boxed{4} & \boxed{4} & \boxed{2} & \boxed{3} & \boxed{3} & \boxed{3} \end{array}$$

#### Solidarity

$$\begin{array}{cccccc} 1 & 3 & 5 & 7 & 9 & 11 \\ \boxed{3} & + \boxed{2} & + \boxed{2} & + \boxed{4} & + \boxed{3} & + \boxed{2} \\ & & & & & = \boxed{34} \\ 14 & 16 & 18 & 20 & 22 & 23 \\ \boxed{3} & + \boxed{3} & + \boxed{2} & + \boxed{3} & + \boxed{4} & + \boxed{3} \end{array}$$

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### Part 3: Is Your Culture Positive or Negative? (Goffee and Jones 1998)

Answering the following questions for the quadrant identified in part 2 will ascertain whether your organisation displays mainly positive or negative feature. Indicate how strongly you agree or disagree with the following statements. ✓

<b>Networked</b>	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
<b>1.</b> There is too much gossip here.	1	2	3 ✓	4	5
<b>2.</b> Close relations help people communicate here.	1	2	3	4 ✓	5
<b>3.</b> Presentations are all show and no substance.	1	2 ✓	3	4	5
<b>4.</b> P e o p l e d o n ' t allow rules to hold them up; they cut through the bureaucracy	1	2	3	4 ✓	5
<b>5.</b> Friendships often stop people from making tough decisions.	1	2 ✓	3	4	5
<b>6.</b> Friendships mean people stay even when times are tough	1	2	3	4 ✓	5

High scores on 1, 3, and 5 suggest your culture is negative.

High scores on 2, 4, and 6 suggest your culture is positive.

Culture is positive

## Part 4: Critical Incident Analysis (Goffee and Jones 1998)

Having identified the culture of your organisation and its negative or positive tilt, the fourth test which follows will offer one more way to make this assessment. Goffee and Jones (1998) have often found that a vital clue about cultural type can come from reactions to critical incidents. You can tell a lot about culture by the way organizations handle success, failure, innovation, and change. Large or difficult decisions have the same revealing effect. Therefore, pick the quadrant, read the following scenarios, and mark how people in your organisation would likely react. The choices may strike you as extreme, but pick the one most similar to your organisation's culture.

Mark how people in the organisation would likely react by ticking the response that is most applicable with the symbol ✓ after the statement that is applicable

### Your Department/Organisation Culture is: Networked

**Scenario 1:** Someone asks for help with a business issue.

Positive: ✓ The answer is yes (with the expectation that the favour will be returned one day).

Negative: Depending on who is asking, the answer is yes.

**Scenario 2:** A star performer receives a big reward.

Positive In the next few weeks, people make sure they are in his/her network.

Negative ✓ Someone starts a rumour that the reward may not have been fully deserved, and this rumour is perpetuated by others.

**Scenario 3:** A new CEO is recruited from outside the company.

Positive A line immediately forms to get to know him or her.

Negative ✓ People adopt a wait and see attitude.

**Scenario 4:** A task force is set up to develop the corporate credo.

Positive ✓ People are eager to join the task force in order to challenge and extend the organization's values. If they can't get on the committee themselves they try to ensure good people do.

Negative People Politick to make sure the "right" people get on the task force people who will reaffirm the existing ways of doing things.

**Scenario 5:** The Company must downsize.

Positive ✓ Senior managers, talk to their people to ensure that the organization does it the right way.

Negative People throughout the organization start rumours about who should and will go.

**Scenario 6:** A major error has been made.

Positive ✓ Managers talk to their colleagues about how to respond swiftly and effectively to maximise organizational learning.

Negative Colleagues collude to make sure the blame is placed elsewhere.

**Scenario 7:** A colleague had a big new idea.

Positive ✓ People spread the idea around the organization as quickly and informally as possible and organize drinks to discuss it after work.

Negative People undermine the idea because of the not-invented-here syndrome.

**Scenario 8:** A chance meeting occurs with a colleague outside work.

Positive ✓ People take the opportunity to chat and to get to know each other better.

Negative People take the opportunity to extract as much information as possible from each other and give as little as possible back.

.

**Scenario 9:** A long-serving employee should be dismissed for mediocre performance.

Positive Senior management make the exit as humane as possible, and the employee receives excellent outplacement services.

Negative ✓ The employee is found an easier job to do inside the organization.

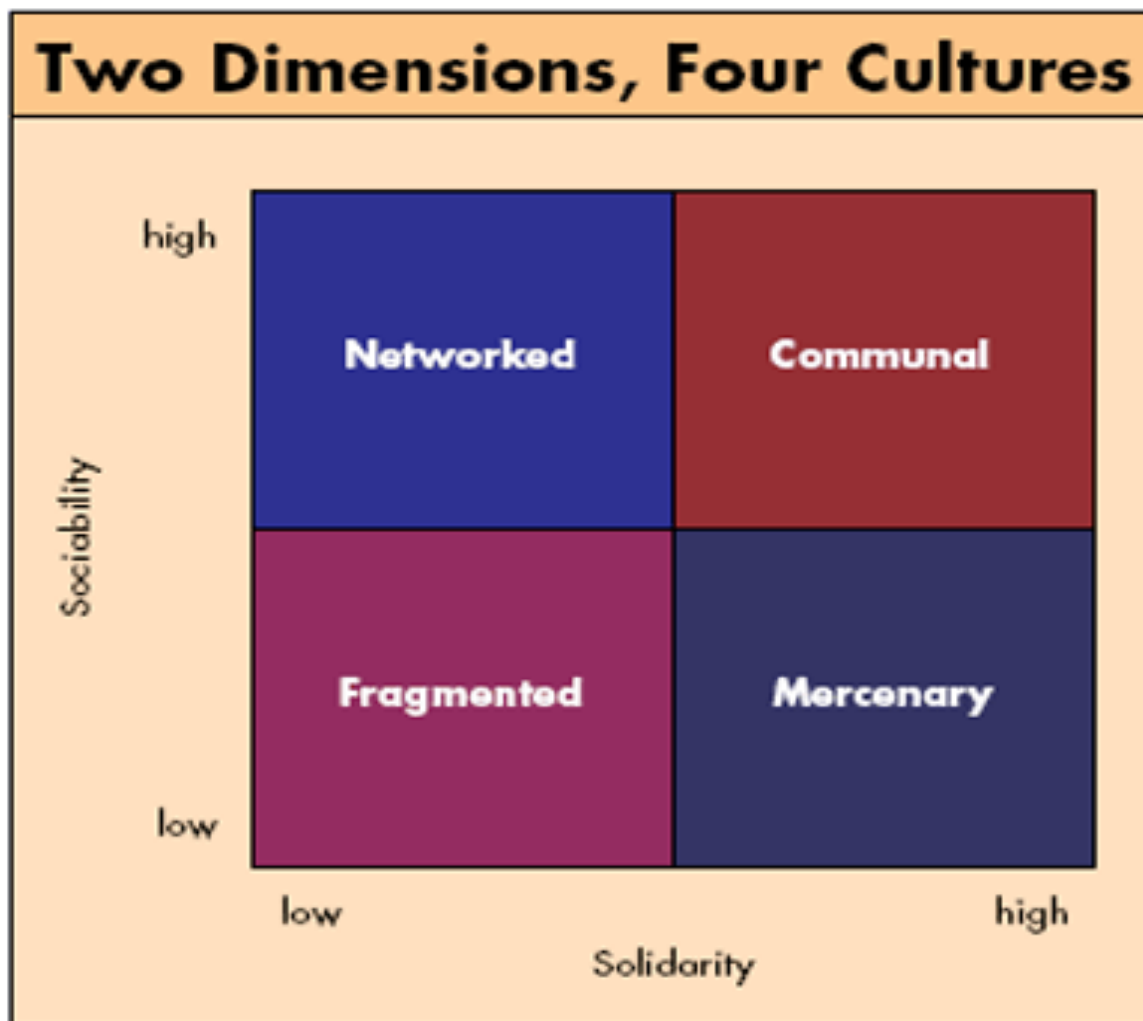
**Scenario 10:** A new competitor enters the market.

Positive ✓ Colleagues work together to figure out ways to make entry difficult and expensive.

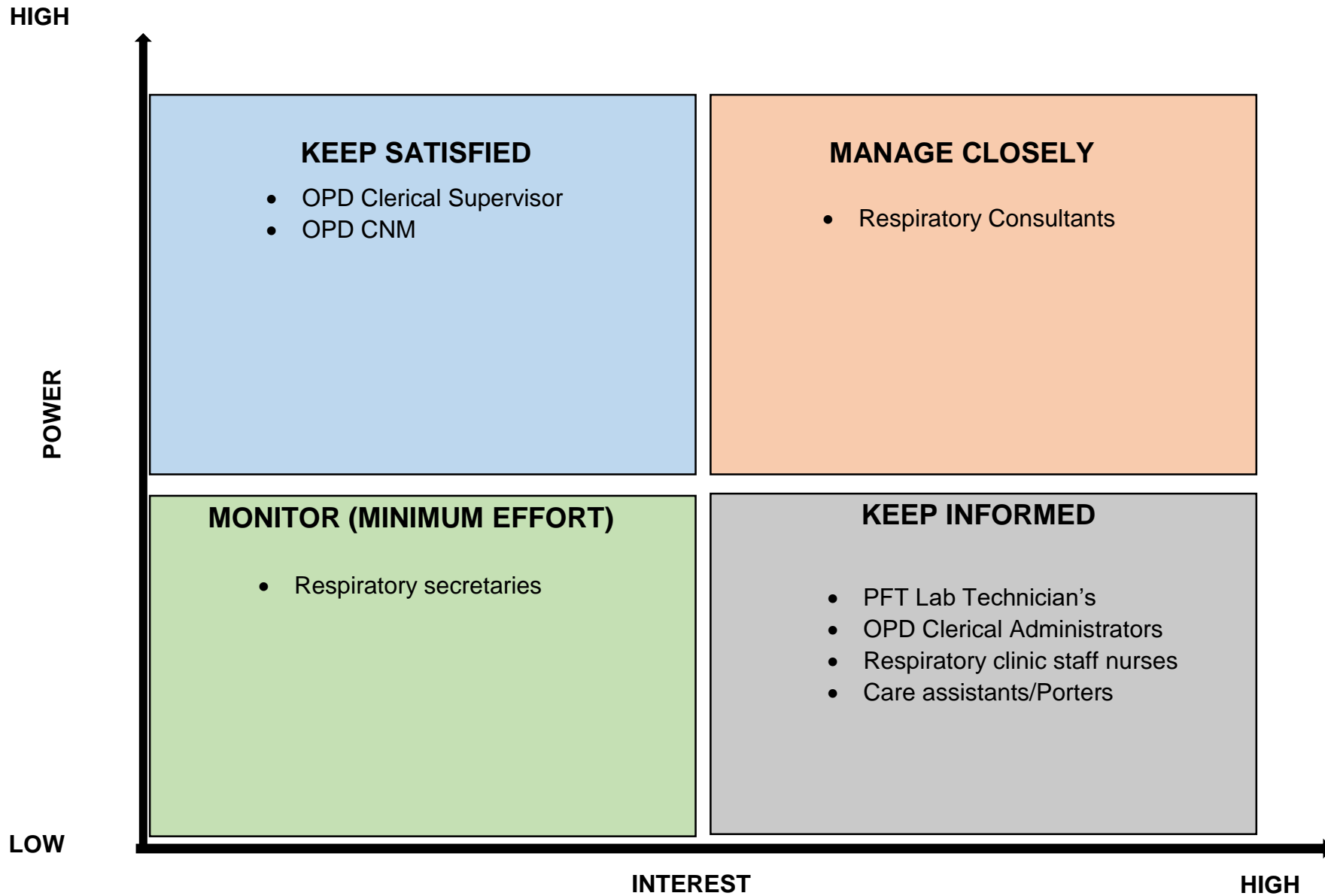
Negative People convince each other that the competition is neither serious or a threat.

Goffee R. & Jones G. (1998) *The Character of a Corporation*. (Harper Collins Business)





## Stakeholder Analysis



## Appendix 11 – Audit cycle



## Appendix 12 – Pre-implementation data observation audit sheet (October 15)

Patient	Join Queue	Time queuing	Check in time	Left OPD	Walk to PFT	Arrive in PFT	Wait in PFT	Called for PFT	PFT duration	Leave PFT	Walk back to OPD
1	09:38	00:04	09:42	09:42	00:04	09:46	00:42	10:28	00:07	10:35	00:04
2	09:47	00:05	09:52	09:52	00:05	09:57	00:53	10:50	00:08	10:58	00:05
3	10:43	00:04	10:47	10:47	00:05	10:52	00:50	11:42	00:08	11:50	00:05
4	14:00	00:03	14:03	14:03	00:05	14:08	00:47	14:55	00:07	15:02	00:05
5	13:45	00:05	13:50	13:50	00:04	13:54	00:40	14:34	00:08	14:42	00:04
6	09:40	00:13	09:53	09:53	00:04	09:57	00:56	10:53	00:10	11:03	00:04
7	09:38	00:04	09:42	09:42	00:06	09:48	00:50	10:38	00:12	10:50	00:06
8	14:27	00:06	14:33	14:33	00:04	14:37	00:43	15:20	00:12	15:32	00:06
9	13:45	00:10	13:55	13:55	00:04	13:59	00:38	14:37	00:09	14:46	00:04
10	10:05	00:12	10:17	10:17	00:05	10:22	00:40	11:02	00:10	11:12	00:05
11	13:10	00:09	13:19	13:19	00:04	13:23	00:35	13:58	00:08	14:06	00:04
12	14:20	00:06	14:26	14:26	00:04	14:30	00:40	15:10	00:08	15:18	00:04
13	14:25	00:07	14:32	14:32	00:06	14:38	00:45	15:23	00:12	15:35	00:06
14	09:50	00:11	10:01	10:01	00:04	10:05	01:10	11:15	00:10	11:25	00:04
15	13:33	00:10	13:43	13:43	00:04	13:47	00:25	14:12	00:08	14:20	00:04
16	16:15	00:03	16:18	16:18	00:04	16:22	00:23	16:45	00:07	16:52	00:04
17	14:18	00:04	14:22	14:22	00:05	14:27	00:35	15:02	00:08	15:10	00:05
18	15:55	00:05	16:00	16:00	00:05	16:05	00:25	16:30	00:08	16:38	00:05
19	13:35	00:09	13:44	13:44	00:05	13:49	00:40	14:29	00:10	14:39	00:05
Average		00:06			00:04		00:41				00:04

**Appendix 12 – Continued (Pre-Implementation Data Observational Audit collection Sheet – October 15)**

Re- Join Queue in OPD	Time re- queuing	Give PFT form to secretary	Wait	Called for Obs	Leave Obs room	Wait	Called by Dr	Leave Dr	TAT (Hours, mins)	TAT (mins)
10:39	00:01	10:40	00:14	10:54	10:59	00:51	11:50	12:04	02:26	146
11:03	00:02	11:05	00:18	11:23	11:27	00:48	12:15	12:34	02:47	167
11:55	00:04	11:59	00:13	12:12	12:17	00:38	12:55	13:12	02:29	149
15:07	00:03	15:10	00:16	15:26	15:30	00:40	16:10	16:35	02:35	155
14:46	00:04	14:50	00:10	15:00	15:04	00:49	15:53	16:04	02:19	139
11:07	00:05	11:12	00:09	11:21	11:26	00:52	12:18	12:40	03:00	180
10:56	00:04	11:00	00:06	11:06	11:10	01:30	12:40	13:10	03:32	212
15:38	00:00	15:38	00:07	15:45	15:51	00:25	16:16	16:31	02:04	124
14:50	00:01	14:51	00:09	15:00	15:03	00:27	15:30	15:51	02:06	126
11:17	00:08	11:25	00:15	11:40	11:45	00:47	12:32	12:45	02:40	160
14:10	00:10	14:20	00:05	14:25	14:30	00:20	14:50	15:01	01:51	111
15:22	00:03	15:25	00:10	15:35	15:40	00:30	16:10	16:32	02:12	132
15:41	00:04	15:45	00:10	15:55	16:01	01:04	17:05	17:37	03:12	192
11:29	00:01	11:30	00:06	11:36	11:40	00:21	12:01	12:11	02:21	141
14:24	00:06	14:30	00:12	14:42	14:46	00:29	15:15	15:35	02:02	122
16:56	00:00	16:56	00:10	17:06	17:10	00:25	17:35	17:48	01:33	93
15:15	00:03	15:18	00:08	15:26	15:30	00:30	16:00	16:07	01:49	109
16:43	00:02	16:45	00:02	16:47	16:51	00:19	17:10	17:25	01:30	90
14:44	00:01	14:45	00:10	14:55	15:01	00:50	15:51	16:00	02:25	145
Average	00:03		00:10			00:39			02:22	142

## Appendix 13 – Post-implementation data observation audit sheet (March 16)

Arrive at PFT	Wait	Called for PFT	PFT duration	Leave PFT	Walk to OPD	Join Queue to register	Wait queuing	Register	Wait	Called for Obs	Leave Obs room	Wait	Called by Dr	Leave Dr	TAT (Hours, mins)	TAT mins
10:33	00:12	10:45	00:08	10:53	00:05	10:58	00:02	11:00	00:15	11:15	11:20	01:08	12:28	13:10	02:37	157
09:55	00:25	10:20	00:08	10:28	00:04	10:32	00:08	10:40	00:17	10:57	11:02	01:13	12:15	12:29	02:34	154
08:55	00:22	09:17	00:08	09:25	00:05	09:30	00:05	09:35	00:15	09:50	09:55	01:17	11:12	11:25	02:30	150
09:25	00:25	09:50	00:08	09:58	00:04	10:02	00:03	10:05	00:15	10:20	10:25	01:10	11:35	11:51	02:26	146
09:25	00:45	10:10	00:07	10:17	00:05	10:22	00:06	10:28	00:24	10:52	10:55	00:40	11:35	11:50	02:25	145
12:34	00:18	12:52	00:08	13:00	00:05	13:05	00:02	13:07	00:10	13:17	13:22	00:48	14:10	14:35	02:01	121
13:51	00:22	14:13	00:08	14:21	00:04	14:25	00:03	14:28	00:06	14:34	14:37	00:58	15:35	15:50	01:59	119
11:27	00:18	11:45	00:10	11:55	00:05	12:00	00:01	12:01	00:05	12:06	12:10	01:04	13:14	13:25	01:58	118
08:40	00:15	08:55	00:09	09:04	00:04	09:08	00:04	09:12	00:34	09:46	09:52	00:31	10:23	10:34	01:54	114
13:38	00:30	14:08	00:07	14:15	00:04	14:19	00:06	14:25	00:03	14:28	14:33	00:28	15:01	15:30	01:52	112
09:45	00:22	10:07	00:08	10:15	00:04	10:19	00:07	10:26	00:06	10:32	10:37	00:53	11:30	11:35	01:50	110
13:00	00:15	13:15	00:11	13:26	00:04	13:30	00:04	13:34	00:06	13:40	13:44	00:21	14:05	14:47	01:47	107
13:45	00:18	14:03	00:08	14:11	00:05	14:16	00:02	14:18	00:02	14:20	14:24	00:36	15:00	15:31	01:46	106
14:33	00:24	14:57	00:08	15:05	00:04	15:09	00:01	15:10	00:07	15:17	15:20	00:19	15:39	16:19	01:46	106
13:17	00:22	13:39	00:07	13:46	00:04	13:50	00:05	13:55	00:06	14:01	14:07	00:30	14:37	14:57	01:40	100
12:54	00:25	13:19	00:08	13:27	00:05	13:32	00:08	13:40	00:05	13:45	13:50	00:20	14:10	14:32	01:38	98
11:50	00:18	12:08	00:12	12:20	00:06	12:26	00:02	12:28	00:13	12:41	12:45	00:15	13:00	13:22	01:32	92
12:49	00:20	13:09	00:07	13:16	00:05	13:21	00:04	13:25	00:10	13:35	13:40	00:27	14:07	14:20	01:31	91
12:52	00:26	13:18	00:08	13:26	00:04	13:30	00:03	13:33	00:05	13:38	13:43	00:32	14:15	14:20	01:28	88
Average	00:22				00:04		00:04		00:10			00:42			01:58	118 mins

## Appendix 14 – T- Test Statistical tables

<b><math>\alpha</math> (1 tail)</b>	<b>0.05</b>	<b>0.025</b>	<b>0.01</b>	<b>0.005</b>	<b>0.0025</b>	<b>0.001</b>	<b>0.0005</b>
<b><math>\alpha</math> (2 tail)</b>	<b>0.1</b>	<b>0.05</b>	<b>0.02</b>	<b>0.01</b>	<b>0.005</b>	<b>0.002</b>	<b>0.001</b>
df							
1	6.3138	12.7065	31.8193	63.6551	127.3447	318.4930	636.0450
2	2.9200	4.3026	6.9646	9.9247	14.0887	22.3276	31.5989
3	2.3534	3.1824	4.5407	5.8408	7.4534	10.2145	12.9242
4	2.1319	2.7764	3.7470	4.6041	5.5976	7.1732	8.6103
5	2.0150	2.5706	3.3650	4.0322	4.7734	5.8934	6.8688
6	1.9432	2.4469	3.1426	3.7074	4.3168	5.2076	5.9589
7	1.8946	2.3646	2.9980	3.4995	4.0294	4.7852	5.4079
8	1.8595	2.3060	2.8965	3.3554	3.8325	4.5008	5.0414
9	1.8331	2.2621	2.8214	3.2498	3.6896	4.2969	4.7809
10	1.8124	2.2282	2.7638	3.1693	3.5814	4.1437	4.5869
...							
...							
35	1.6896	2.0301	2.4377	2.7238	2.9961	3.3400	3.5912
36	1.6883	2.0281	2.4345	2.7195	2.9905	3.3326	3.5822
37	1.6871	2.0262	2.4315	2.7154	2.9853	3.3256	3.5737
38	1.6859	2.0244	2.4286	2.7115	2.9803	3.3190	3.5657
39	1.6849	2.0227	2.4258	2.7079	2.9756	3.3128	3.5581
40	1.6839	2.0211	2.4233	2.7045	2.9712	3.3069	3.5510
...							
...							
50	1.6759	2.0086	2.4033	2.6778	2.9370	3.2614	3.4960
51	1.6753	2.0076	2.4017	2.6757	2.9343	3.2579	3.4917
52	1.6747	2.0066	2.4002	2.6737	2.9318	3.2545	3.4877

## Appendix 15 – Implemented single page appointment letter

### APPOINTMENT OFFER

Organisation Crest here

Mr. Joe Bloggs  
Yellow Brick Rd  
Douglas  
Cork

20<sup>th</sup> January 2016

Dear Joe Bloggs,

Regional Identifier: 1234567

The following **two appointments** have been made for you to attend the [Organisation name here].

Specialty	Date	Clinic
Respiratory Medicine	Thursday 3rd March 2016 at 14:00	Pulmonary Function test
Respiratory Medicine	Thursday 3rd March 2016 at 14:30	[Consultant's name] in Outpatient Dept.

- 1 Firstly, please attend the main [Organisation's name] Hospital building for a breathing test as per the above appointment marked "Pulmonary Function Test" (The Pulmonary Function Room is located on the second floor of the main hospital building — the first door on the left when you exit the lift).

NOTE: If this is your first time attending for a breathing test, please DO NOT TAKE any inhalers or nebulizers on the morning of the test. If this is not your first time attending for a breathing test, please TAKE any inhalers or nebulizers as usual.

- 2 After this test is complete, please attend the Outpatients Department for a consultation with [Consultant's name] as per appointment above. (The Outpatient Department is located across the road from the main hospital building and down the side street "[name of Street inserted here]").

NOTE: Please bring a list of all medications and dosage you are currently taking to this appointment. If you have a medical card, please bring this also.

#### **Cancellations/Rescheduling Appointments**

If you wish to cancel or reschedule your above appointments, please do so 48 hours in advance by contacting the Central Appointments Office. Phone [number inserted here] (Between 10:00am and 4.00pm)

Email: [insert Central appointments email address here]

Fax: [fax number inserted here]

**If you fail to attend your appointment you will be discharged back to your GP. A new referral will be required and you will be placed at the end of the waiting list.**

#### **Additional Information:**

- Children under 18 years must be accompanied by an adult.
- Patients are seen in order of appointment time. You will be seen as near as possible to your appointment time, however on occasion delays do occur.
- The [Organisation's name] Hospital is a teaching hospital. Medical and Nursing students are present at clinics, however, should you wish not to have students present, please inform a member of staff.

Yours Sincerely,

[OPD CNM name and date inserted here]