EXECUTIVE SUMMARY

This report provides an overview of a Service Design Master’s project conducted at the University of Dundee during June, July and August 2014.

The author as a designer explores how a design led approach can impact on the quality of care provided in the National Health Service (NHS) outpatient setting. Service users and providers in the healthcare setting often focus on problems, which in turn describe further problems and in greater detail. They also often tend to jump directly to simplistic or direct solutions for example, “I need more staff or resources”. Indeed, clinicians are in the business of “fixing people”.

Commonly known as design thinking, designers find it useful to explore the problematic situation and possible ways of framing problems and potential solutions in parallel.

Therefore: by means of designing and engaging with service users and providers service designers are able to offer innovative solutions to an ageing population and the rising demands of service users – NHS Tayside must be designed to meet the complex needs of users while delivering cost efficiencies.

The designer underwent a process of gaining insights from the outpatient clinic staff, service users and the processes which highlighted that there are many opportunities for redesign. The project aim is to engage with the key stakeholders in the outpatient clinic to reshape the delivery of outpatient services. This begins with the need for people to think about what they currently do in the outpatient setting and what they aspire to do in the future. The designer looked at methods to Discover, Define, develop and deliver an innovative solution to the Outpatient Outcome Sheet process which at present generates lots of waste, effort and resource in order to collect data for the Scottish Government.

The designer undertook a service design approach in order to gather insights and develop these insights into the prototype outcome, a laminated outcome sheet. Workshops and interviews with members of staff were held to identify what currently happens in outpatients. Through observations and journey mapping and prototyping, the designer was able to identify and focus on one particular element of the service. The developed prototype, an interim solution, will now be taken forward by Alison Cormack in her role as Programme Manager for Shaping Outpatient Services. With a view to spread and sustain throughout the organisation.
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INTRODUCTION

Alison Cormack is a Service Designer and Healthcare Professional with an extensive career in nursing, latterly as an Improvement Advisor with NHS Tayside. At the end of June 2014 Alison became the Programme Manager for Shaping Outpatient Services in NHS Tayside. This programme is part of the National Transforming Outpatients Services Programme.

NHS Tayside is one of fourteen regions which make up NHS Scotland (a publicly funded healthcare system). NHS Tayside provides healthcare services for the populations of Dundee, Perth and Kinross and Angus areas. It currently has one of the largest teaching hospitals in the world (Ninewells Hospital, Dundee).

Covering a large geographically and demographically challenging area. NHS Tayside provides outpatient services across the Tayside region to all 400,000 (approx) population. It comprises three distinct localities, Angus, Dundee City and Perth & Kinross. Whilst Dundee has a dense population, Angus and Perth cover large rural areas with low population densities. The challenge for NHS Tayside is to provide an equitable, efficient and effective outpatient service across the three localities.
This research project endeavors to address the question:

**Can service design led approaches be used to reshape the Out-patient Services for the population of Tayside?**

Outpatient services are experienced from the moment your General Practitioner refers you or when your outpatient appointment letter arrives through your front door, to waiting in the outpatient waiting area, to the outcome of your treatment and all of the bits that happen in between.

According to NHS Scotland Efficiency & Productivity Framework\(^2\) illustrated in figure 1 below, in order to improve overall quality and efficiency whilst achieving financial balance it is critical to the National Health Service to increase quality, reduce cost and meet the increasing demand of an ageing population profile. In allowing greater self-management especially for chronic diseases this will not only provide greater control to individuals of their own disease but will allow resources to be utilised for those most in need. Consequently, exploring the use of service design approaches in outpatient services may address this balance.

Figure 1 – NHS Scotland Efficiency & Productivity Framework.
WHO IS THIS REPORT FOR?

This report is aimed at healthcare workers with a responsibility for providing and delivering high quality care in outpatient services across NHS Tayside.

These include:

- Senior managers
- Service managers
- Healthcare professionals
- Support staff clinical and non-clinical
- Service Improvement Advisors

In addition, this report could be utilised by the other thirteen Health Boards across Scotland as part of the Scottish Government’s Transforming Outpatient Services towards our 2020 vision. This vision “provides the strategic narrative and context for taking forward the implementation of the Quality Strategy, and the required actions to improve efficiency and achieve financial sustainability”.

The Scottish Governments, Transforming Outpatient Services Programme is aimed at supporting NHS Boards and local partnerships to move care closer to home and enable more people to receive the right care, from the right person, at the right time, in the right place. (Appendix1)

The Transforming Outpatient Programme also supports teams working together with patients and the public to understand and diagnose system issues through design and innovation and the use continuous improvement to deliver high-quality, person-centred care and best value for money.
What is an Outpatient?

Patients requiring the medical opinion of a specialist clinician may be referred to an outpatient clinic for treatment or investigation from their General Practitioner or other health care professionals, e.g. optician, dentist. An outpatient is a patient who attends a consultant or other medical clinic or has an arranged meeting with a consultant or a senior member of their team. Outpatients are usually seen in the hospital setting but are not admitted to a hospital and do not use a hospital bed.

Outpatient attendances can be categorised as new or follow-up (return) attendances. A clinic may be held in a hospital outpatient department, a health centre or another location.

According to the Information Services Division (ISD) data, NHS Tayside had 494,811 consultant led outpatient appointments in 2012 and is forecast to increase year on year (Appendix 2). This figure does not include Nurse-led clinics (specialist nurses with their own patient case load) or Allied Health Professional clinics (health care professions distinct from nursing, medicine, and pharmacy) appointments.

It is evident that innovative approaches are required to reshape the way we deliver outpatient services in NHS Tayside. In these times of budget constraints and the need to meet efficiency savings we must ensure that the quality of patient care is maintained. The skills, knowledge and expertise intrinsic to service designers will form a key part of a new approach to the NHS as to how we involve and engage our patient/service users and service providers with the tools and techniques in order to facilitate radical change and innovation through creative thinking and design.

It is often a challenge to explain how design methodologies can improve the delivery of public services. As the Design Council explain that:

“... design is a problem-solving process but it is difficult to think of what problems it can help you solve when all you really know about designers is that they make nice gadgets like iPods or will have created the graphics for that attractive label on your tin of baked beans.”
Therefore this report aims to demonstrate how a service design led approach can help reshape outpatient services in NHS Tayside.

THE CHALLENGES FACING THE NATIONAL HEALTH SERVICE (NHS) IN SCOTLAND

Scotland’s Population

Over the next 10 years, the proportion of over 75s in Scotland’s population - who are the highest users of health and care services, will increase by over 25%. By 2033 the number of people over 75 is likely to have increased by almost 60%. Over the next 20 years demography alone could increase expenditure on health and social care by over 70%. These challenges will augment the specific impact of inflation on health and care services. Despite efforts to address the challenge of health inequalities in Scotland over recent years, we have made very little progress. This remains a key priority. Recent evidence shows that design methodologies can drive innovation in public services, services which are provided by the government to people living within its jurisdiction. Design thinking creates efficiencies by designing out problems early, and the collaborative nature of many design projects can engage public sector workers, frontline staff and users in the development and delivery of new services. (NHS Scotland, 2020 Vision)

Kimbell suggests the main value of design thinking is in supporting innovation to make change happen in both business and society. The NHS, itself could be interpreted as a society, with traditions, values and beliefs.

The Design Council recognise the pressures of an ageing population and the rising demands of service users. Moreover, they point out that innovation is essential – and public services must be designed to meet the complex needs of users while delivering cost efficiencies. However, the Design Council’s research also shows many public service providers lack the knowledge and skills to use design as a strategic approach to innovation. They affirm that by developing this capacity would help public sector organisations manage their creative processes and find innovative solutions for service delivery.

The Christie Report recognised that embedding co-production and community capacity building in organisations and services will require whole systems change. An example of how this might be achieved in future is by recognising the capacity and capability of front-line staff to co-produce with users and communities in organisational competency and performance management frameworks. This will support the principle of co-production by emphasising it is more rewarding for the service
user, the professional and the provider organization to solve problems together and not simply do things ‘to’ and ‘for’ service users.

Building on Christie’s recommendation that frontline staff working with people and communities are best placed to plan and deliver services: A Scottish Government priority is that “… management and frontline staff in public services need to be encouraged and supported to prepare for change, promote innovation, embrace new approaches, improve performance and involve communities and services users in the design of public services …”

And, that “irrespective of the current economic challenges, a radical change in the design and delivery of public services is necessary to tackle the deep-rooted social problems that persist in communities across the country”.

Furthermore, people have ‘assets’ such as knowledge, skills, characteristics, experience, enthusiasm, family, friends, colleagues and communities. These assets can support health and wellbeing. Understanding the needs and abilities of people using services and engaging them closely in the design and delivery is a pre-requisite for the delivery of successful services. However, to be successful, a patient centred approach must also focus on and address the staff experience, as the ability and inclination of staff to care for patients is compromised if they do not feel cared for themselves. Consequently the challenge as a Service Designer working in NHS Tayside is to engage with and inspire service users, service providers, leaders and managers to highlight the advantages of Service Design approaches in healthcare.
Figure 2 below, demonstrates the “road map” which was developed by patients, carers and clinicians to recognize the changes required for outpatients in the year 2020. In the past, several attempts have been made to improve services using improvement methodology. This report suggests that to redesign services requires a Service Design approach.

Figure 2– ROAD MAP FOR 2020 VISION
The demand for new and return outpatient appointments exceeds the current capacity in NHS Tayside. The General Register Office for Scotland recorded the population of Tayside in 2013 at approx 412,000 and there are approximately 500,000 arranged outpatient appointments across NHS Tayside with numerous associated issues/problems. This could be interpreted as more than one appointment per capita, but in reality these are patients who have multiple appointments.

Outpatient clinics can be demanding environments. The treatments offered across specialties may vary but the way they serve patients share many common steps. To provide patients with safe, high-quality care, it is important that clinics run effectively and efficiently.

At a glance, it appears that many outpatient clinics look fraught with disorganisation. Indeed, patients can find their appointments cancelled or rescheduled for no apparent reason, or appointments can be wasted when patients fail to show up. (The Health Foundation).

When they do attend, patients can find their appointments delayed, they can be asked to repeat answers about their medical history or be sent for unnecessary tests. Many patients are discharged after the first visit. So was this an appropriate referral for an outpatient consultation?

Furthermore, The Health Foundation goes on to pose the following key questions:-

- Where in the system are things going wrong?
- What is the real capacity of an outpatient clinic and how can the staff ensure that processes run smoothly and safely?

The outpatient service is a complex system with complex (or wicked) problems. A wicked problem is a social or cultural problem that is difficult or impossible to solve. There are many reasons for a wicked problem including: incomplete or contradictory knowledge, the number of people and opinions involved, the large economic burden, and the interconnected nature of these problems.

According to Polaine, approaches to social challenges have two facets: 1) - they aim to address a defined goal, and 2) - they need to do it within limited means. In the case of healthcare people can personally benefit by keeping healthy and not using the service at all, and healthcare providers would be happy if we stay healthy. Service design offers a way to examine new ways to connect people and achieve goals to reduce the demands placed on limited resources.
A background in Nursing and Quality Improvement methodology is a valuable advantage to facilitate a deep understanding of the culture of the NHS and the aversion to risk taking in a policy driven, target driven organization which steeped in tradition.

The NHS in Scotland has continually transformed since it's conception in 1948, when health secretary Aneurin Bevan brought about a hugely ambitious plan to bring good healthcare to all. For the first time, hospitals, doctors, nurses, pharmacists, opticians and dentists are brought together under one umbrella organisation to provide services that are free for all at the point of delivery.

The vision expressed in the government paper *Designed to Care*, is to build on the strengths in the NHS in Scotland and to tackle some of the existing shortcomings which are of concern to patients and NHS staff alike. An NHS concentrated on improving health and reducing health inequalities.

"We want a service which is designed from the patient's viewpoint, which delivers clinically-effective care".

Staff at all grades, clinical and non-clinical within NHS Scotland can be empowered through the use of traditional design skills, for example, observation, visualisation, creative thinking and prototyping to develop their innovative ideas which may improve quality, efficiency or productivity.

Across a range of organisations, private and public, the concept of the 'intrapreneur' is gaining currency. This is an approach whereby staff who are working within a large organisation are encouraged, through protected time or development opportunities, to come up with innovative solutions to problems or to develop potential improvements.
This section will describe the design approaches and methods used and advantages of using a design led approach, paying particular attention to observations, journey mapping etc.

Every designer, to some extent will have differing approaches and particular ways of working, but there are some general activities common to all designers. The Design Council\(^5\) developed the ‘Double Diamond’ model, figure and this model will be applied throughout this report.

![Double Diamond Model](image)

Figure 3 – Double Diamond Model

Divided into four distinct phases: Discover, Define, Develop and Deliver, it maps how the design process passes from points where thinking and possibilities are as broad as possible to situations where they are deliberately narrowed down and focused on distinct objectives.

In figure 4, The NHS National Institute for Health Research have illustrated and adapted the Double Diamond approach in a more traditional project management process for healthcare to encompass informed consent.

- **Open up** and question what the improvement/innovation project should focus on. This discovery phase allows the designer to explore and understand service-users’ needs.

- **Focus on** the important issues to tackle in the project, based on what is discovered. This is the Define phase, where you define problems and begin to interpret them.
Open up again to explore different ways of tackling the problem by designing things/processes. This is the Develop phase, where design and test potential solutions occur.

Focus on producing practical, working solutions and implementing them. This is the Deliver phase, where you concentrate on the final specification and production of the service.

This approach recognises good health service design begins with understanding people’s lived experiences. Indeed, by gaining this understanding of people not just as service-users, but human beings with feelings and wider goals, such as maintaining independence and dignity will in turn help to drive Service Design as an approach for people not patients.

![Diagram](image)

**Figure 4 - THE NHS NATIONAL INSTITUTE FOR HEALTH RESEARCH**

Service Designers, utilise the Double Diamond design process which provides a framework to consider how to carry out research by providing the tools and techniques to fully understand how people use the outpatient service from the service user and the service provider’s points of view. This allows a clear focus on particular key issues/problem areas and is one of the key strengths of adopting a service design approach.
From a Service Designer viewpoint, observational tools provide the opportunity to gather insights and inspiration to scrutinise problems and concerns. These insights into how people actually use things or a service are central to design thinking, from observing what people actually do, noting what they don’t do, and understanding what they don’t or can’t explain about what they do.

Design thinking borrows ethnographic observational techniques from anthropology and reapplies them to generating practical solutions. This requires a certain degree of empathy, because feeling alongside others allows you to move past seeing them as subjects or consumers and really experience things as they do.
A workshop event was held to design a single elective and trauma hand surgery pathway for Tayside from referral to discharge. This two day event with key stakeholders from a multidisciplinary team offered an exciting opportunity to bring about rapid changes to current work processes. The workshop enabled protected time for the team and empowered the frontline staff to redesign the hand pathway, therefore improving the staff and patient experience.

The outputs were to:

- Reach agreement for future pathway
- Achieve the Treatment Time Guarantee
- To improve the post-operative therapies pathway
- Improved patient experience and outcomes
- A sustainable, resourced model

Various methods for the primary research included patient stories, (Appendix 2) and observations of the current state.

An example of observations during a hand therapy clinic, (figure 5) uncovered numerous opportunities to redesign and improve the outpatient service examining the patients’ journey through the service, the front and the backroom processes from referral though to discharge, but for the most part the lack of empathy (figure 6) for the patient.
The hand therapist in the particular clinic was a physiotherapist, frustrated and feeling over worked, the clinic was overbooked (figure 7) and the last patient on the clinic list was from Fife.

![Clinic Observations](image)

**Figure 7**

Protocol states that patients from Fife should be seen in Fife. There was apparently an administration error, but the therapist refused to see the patient and sent him away although there was time to see the patient. The therapist was making a point but with no empathy for the patient, who had come a distance to the clinic and perhaps had to have someone drive him to the clinic. Observing real people in real-life situations to find out what makes them tick, confuses them, what they like, hate and where they have underlying needs not dealt with by existing services is a strength of service design approaches.

![Standing in someone else's shoes](image)

**Figure 8**  
**Figure 9**
Empathy is powerful, it allows frontline staff to understand and respond to patient needs, and better communicate their understanding to patients. There are several tools to consider to gain insights, for example, empathy workshops and standing/walking in someone else’s shoes (figures 8 & 9 above).

The plan is to carry out empathy mapping together with patient stories offer a deeper insight into the problems facing the outpatient staff and patients to highlight issues. Listening to employees on the frontlines demonstrates leadership commitment to an empathetic service. Empathy workshops enable the designer to ask what your organisation is doing to encourage intuitively empathetic employees to “do the right thing” when they see a barrier to meeting patient needs. Enabling best practice and sharing identifies and creates opportunities for outpatient clinic staff, or leadership peer groups to connect, learn from one another and share ideas with the broader organisation.

“Empathetic customer care is driven by both employee behaviors and leadership decisions, it is an organisational capability that must be cultivated and reinforced.”

The use of observational tools in several clinics on a number of occasions and in particular the Dermatology clinic, (skin disorders) provided the opportunity to identify and focus on an area to redesign within the outpatient service, the outpatient outcome sheet (Appendix 4). This is an A4 paper based record of the patient’s outcome from the clinic visit. The outcome sheet is completed for every single patient that comes through the outpatient service and is then disposed in the confidential waste after the outcome has been recorded onto the Tayside Out-Patient Appointment System (TOPAS). At a cost of £25 for each bag of confidential waste this is an opportunity for cost efficiencies. This information is then gathered for the Scottish Government and provides the Scottish Government with information in regard to ongoing treatment or if a patient is discharged from the clinic. One of the main issues concerning the outcome sheet is missing sheets and therefore the data cannot be completed for the Scottish Government and much time is wasted looking for the missing sheets in terms of manpower and frustration. (Appendix 5)
To identify opportunities for redesign, the outcome sheet process was mapped using a **Journey mapping** tool. This visual representation of a user’s or object’s journey through a service, illustrates all the different interactions they have. Building a customer journey involves the observation of the user experience and the representation of that experience through its touchpoints. The touchpoints can be physical, virtual or human and the user experience is obtained by connecting the different touchpoints in sequence as the outcome sheet passes through the outpatient process.

The starting point is the identification of the touchpoints as the elements of the service interface that establishes the relationship between the user and the organisation. This then allows us to see what parts of the service work for the user/object “delightful moments” and what parts might need improving “pain points”. As a result of **shadowing** members of staff and service users which involved observing a user/process directly to identify and understand their specific needs. Researchers can follow a person or object as people go about their lives or as they use a service and document what happens in an unobtrusive way to gain an understanding of how people interact with the service. Figure 11 is a combination of Journey Mapping and User Shadowing following the outcome sheet from start to finish which helped to clarify areas for redesign. Using this approach enables the Service Designer to meet, engage with and interview the people involved in the process giving the opportunity to ask “what frustrates you within the current system?” and “how could it be changed or improved?”.

**Figure 11 – Journey Mapping (Outcome Sheet).**
By using this design approach we were able to:

- Identify the key elements of the service.
- Get an understanding of the links between all the different elements over time.
- Identify problem areas in the process.
- Create empathy with the different staff from different areas.
- Understand the different parts of a service such as staging, interactions and touchpoints.
- Identifying barriers and opportunities for service innovation.

Figure 12 illustrates some of the processes and people involved in the outcome sheet procedure.

Moving into the Discovery phase using the Double Diamond model employs key activities and objectives. Some examples are brainstorming, ideation, prototyping, multi-disciplinary working, visual management, development methods and testing.
Brainstorming

A brainstorming session was carried out using Post it notes and flipchart paper with some very motivated clinicians who identified some of the issues with the outcome sheet. The outcome sheet was:

- Not user friendly
- Often misinterpreted
- A waste of paper/ink/effort to print
- Incorrectly completed with codes missing
- Missing
- Taken away mistakenly by patients

Not surprisingly, during this session the staff generated many alternative solutions and opportunities very quickly. They identified interesting and important ideas to take forward as part of the design process. This was a particularly useful session to break out of established patterns of thinking, and develop new ways of looking at things. It also helped overcome many of their issues and frustrations with the process.

Figure 13 – Brainstorming session
Prototyping

Following the brainstorming session a prototyping workshop was set up with the clinic staff including nurses, doctors and administration staff to explore the use of prototyping. Service designers use prototyping as a method to facilitate redesign from the physical, system, information and people perspectives. Figure 13, effectively illustrates how these four elements overlap to produce a tangible artifact.

![Figure 1: The parts of a service that prototyping can help to test and develop with users](image)

Prototyping as an approach to service design encourages low-cost, low-risk, iterative experimentation\(^3\). It is also a valuable means of communicating with, and involving stakeholders – be they providers, staff or service users. By making something visual and tangible, people reach a greater level of clarity – they ‘get it’ – especially when it comes to complex service areas which are difficult to visualise.
CREATING THE ORGANISATIONAL CULTURE

There are immense challenges around embedding prototyping into an organisation, such as the NHS, which as previously mentioned is steeped in traditions and is protocol/target driven. By allowing, giving and making space for individuals and groups to experiment, creating the right organisational culture, ensuring the correct skills and roles are present on the project team, and recognising and challenging the traditional mindset of staff members.

As a service designer facilitating a prototyping work-shop I want to create a feeling of freedom and empowerment to “try things out”.

Will people feel they can bend or break protocol, even for just one day, without having to change the whole system around them?

Key factors that help to integrate methods of prototyping into organisational settings:

- Making the case for prototyping
- Skills for prototyping
- Culture: permission to prototype

Clearly, project teams engaged on prototyping activities need to be freed up to adopt a new working culture, including a different pace and style of working, temporary permissions to do things involving people in new ways and using methods and processes.

As public services look for new solutions to social problems, and look to redesign services to achieve more for less, the relevance of this approach is growing. Whilst prototyping is still the exception rather than the rule, we are seeing increasing numbers of public services adopting prototyping within their service development processes.

Experience Prototyping is a way of testing new service ideas or designs for specific touchpoints, which describes the interface of a product, service or brand with customers/users. It helps to communicate what the experience will be like, thereby allowing the design team to test and refine
their solutions with potential users. In addition, the method helps build buy-in from partners and other stakeholders.

Making prototypes ‘early, ugly & often’ is important in the design process. Experience Prototypes don’t need to be refined or take a long time to make, it is more important to create something quickly, test it, and then iterate the design. They can vary from paper sketches, to a physical model, to a fully acted out service.

Prototyping enables the designer to:

• Design and test specific touchpoints or interactions
• Find out whether parts of the service meet users’ needs and how they can be improved
• Communicate the benefits and experiences the service will deliver to stakeholders, including decision-makers, frontline staff, partners and users
• Gather feedback from potential users.

From the ideas gathered from the brainstorming session, interviews and workshops were conducted with staff members to generate some ideas to prototype.

Highly technical -
Ipad, detectors at entrance to clinic, barcode wrist bands, computers

Low technology - USB port, whiteboard, laminated sheets, “Magnadoodle”
Silly:
ballons, feathers tied to sheet, different shapes or hung around patient neck
These might be characterised as light hearted, quick wins.

The advantages of using a design process are the ability to produce a range of ideas from practical and implementable to the crazy ideas.

Following the prototyping session and having looked at all the options the staff agreed to try a one day trial of the laminated sheet in one clinic with staff that were willing to try it out. The receptionist agreed to wipe clean the laminate with medical wipes for infection control purposes.
On the day of the trial the staff met in the morning to brief everyone. The clinic ran as usual and the sheets were completed well. All the relevant information was inputted into the TOPAS system and at the end of the clinic only 10 laminate sheets had been used.

Ultimately by making simple changes to the outcome sheet the process became more effective and efficient in collecting and recording the patient outcome leading to improved data collection and freed up receptionist time to provide a more face to face person centred approach. These changes also reduced consumables, reduced waste and became more environmentally friendly.
The plan is to collate the results into a case study and present to senior managers, then conduct awareness sessions and have other clinics adopt the laminate sheet.

User Personas
As a designer interviewing many different individuals of the outpatient teams, it became apparent that many of the individual people in particular job roles had similar issues and frustrations. In order to anonymise the people in the process the use of personas is advantageous. A User Persona is a character that embodies user research in an easily identifiable and understandable form. It brings together lots of information about similar people to create a single character that represents the group. Personas are normally created as a set, showing different types of users...
with different needs. User personas can be communicated in a wide variety of formats but are normally a combination of images and text.

A Persona can cover information such as name, age, occupation, where they live, family, hobbies & interests, likes & dislikes, and most importantly needs\textsuperscript{16}.

Zeithaml, Bitner et al. (2006)\textsuperscript{17} define service blueprinting as “a tool for simultaneously depicting the service process, the points of customer contact, and the evidence of the service from the customer’s point of view”. So, the authors emphasise the different systemic layers overlapping in a service, from the layer of customer interaction and physical evidence to the layer of internal interaction within the service production process.

Service blueprinting is a process analysis methodology proposed by Shostack (Shostack, 1982, 1984). Shostack’s methodical procedure draws upon time/motions method engineering, PERT/project programming and computer system and software design. The proposed blueprint allows for a quantitative description of critical service elements, such as time, logical sequences of actions and processes, also specifying both actions/events that happen in the time and place of the interaction (front office) and actions/events that are out of the line of visibility for the users, but are fundamental for the service. Blueprints help to capture the big picture and interconnections, and are a way to plan out projects and relate service design back to the original research insights.
This section of the report will focus on the outcomes so far and next steps. The transformation of a “business as-usual” culture into one focused on innovation and driven by design involves activities, decisions and attitudes is a long and labour intensive journey. One way to integrate design approaches into healthcare is to ensure that service providers and service users are part of the experience and to bring about a climate of optimism. In order for design approaches to be used in healthcare we need to open and free the mind and educate the workforce for innovation projects to be successful, a grounded approach must be adopted. Asking people who use and work in the healthcare service uncovers the real problems. Therefore, the solutions that are generated enable users and providers to take ownership of their future service. Furthermore, by tackling these issues through understanding the people that face them, the result is positive collaboration. Thus, ensuring the continual use of service design approaches in the future. This report has revealed that if service design as an approach was adopted for all NHS boards it may fundamentally produce sustainable and viable outcomes. These projects would address the NHS need to embrace collaborative approaches through the opening of new communication channels, which can build ‘Creative Communities’, whereby there is a ‘decline of individualism and a return to tribal times’ (Selloni, 2013). This form of belonging can transform the NHS into a proactive innovative organisation, actively engaged in mutually beneficial relationships, raising not just the profile of, but also the wellbeing of those at its heart. Furthermore, welcoming service design approaches on a business as usual basis will enable healthcare to test ideas and make modifications without high cost risks being involved. Previous expensive and ineffective pilot schemes would be replaced with small prototyping initiatives. In the long run, this would result in outcomes that are beneficial to the future of all aspects of the NHS. As this research has shown, over and above all of this, the potential and value of Service Design should be fully embraced and taken on board. The endless possibilities that this emerging discipline generates can truly have a positive impact.

Throughout this project, it has become clear that service providers and service users have, in the past felt unheard and desire to get their views across. At this moment in time, some of the ways that this is occurring is quite negative. Service design approaches are enabling the NHS to create new communication links that generate positive routes for expression. As demonstrated by this exploratory approach could build a more supportive empathetic and productive atmosphere. Having said this, the establishment of these new communication networks highly
rely on people participating and openly getting involved at every opportunity. Initially this may need to be facilitated until it occurs naturally, until a strong culture of collaboration is adopted.

Service design methods have revealed the success of intervening early in redesign projects. In addition to this continued early facilitation and interventions, findings have shown that would be beneficial to include design practitioners in all future projects. This approach requires strong organisational champions who have an understanding of both a design-led approach and the aims and goals of the organisation. As a result, previously isolated and frustrated service providers will become focused motivators of active change, for themselves and those around them. Service design enables people to use their skills and abilities within new contexts, resulting in the establishment of a core motivated group, who feel ready and equipped to drive forward change. Project findings also indicate that it is important to introduce a creative project that is inspired and managed by service providers, users and the Tayside population as a whole.

“Design thinking has its origins in the training and the professional practice of designers, but these are principles that can be practiced by everyone and extended to every field of activity.” (Tim Brown 2009)
RECOMMENDATIONS/NEXT STEPS

NHS Tayside requires a “human-centered” design approach to navigate the blurring of lines between national targets, processes and services, service provider and service user.

Design approaches involve creating choices and then making choices. You don’t have to be a designer to benefit from using design approaches.

Therefore the following recommendations include:

- Development of a communication channel to provide a sharing platform for service providers and service users to voice their opinions and contribute their ideas. The knowledge provided by people using the service is invaluable. These insights must be utilised in a positive way, in order to drive forward change.
- Develop a design approach for all NHS Tayside projects, by engaging with service providers and service users, in order to understand the real issues they are faced with. It is only through this, that project outcomes will be beneficial for the entire organisation.
- Introduce Service Design tools and methods to demonstrate the advantages of the approach to all staff in NHS Tayside as part of the Service Improvement Curriculum
- Promote Service Design through enabling, participating, sharing and mentoring
- Develop an environment within the organization conducive to creativity
- Encourage stakeholders to both explore problem-framing and potential interventions/solutions and use design methods that make sense to service providers and service users to translate design thinking across different health departments.

The implementation of these recommendations will be pursued and encouraged through communication and collaboration with the executive team and senior managers in NHS Tayside.
REFERENCES

1 http://www.isdscotland.org/Health-Topics/Hospital-Care/Outpatient-Activity/


3. A Route Map to the 2020 Vision for Health and Social Care: http://www.scotland.gov.uk/Topics/Health/Policy/2020-Vision

4. Transforming Outpatient Services Change Package-Getting patients on the right pathway through transforming Community Allied Health Professional (AHP) MSK services. http://www.scotland.gov.uk/Publications/2014/06/1240/1


12 http://www.ournhsscotland.com/history/birth-nhsscotland


15 Service Design Tools http://www.servicedesigntools.org/tools/8

16 Design methods for developing services
https://www.innovateuk.org/documents/1524978/1814792/Keeping+Connected+-+Design+methods+for+developing+services+%2528Archive%2529/d358586d-80b3-4f1e-b753-16750434829d


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Better Services by Design, NHS Institute for Health Research  http://www.bsbd.org

Experience Based Design: using Patient and staff experience to design better healthcare services http://www.institute.nhs.uk/quality_and_value/experienced_based_design/the_ebd_approach_%28experience_based_design%29.html


Quality and Efficiency Support Team
http://scotland.gov.uk/Topics/Health/Quality-Improvement-Performance/Supporting-Improvement/Outpatient-Community-Care


Transforming Outpatient Services: http://www.scotland.gov.uk/Publications/2014/02/8602/1
### Appendix 1

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Source: ISD(S)1, SMR00 (DNA)
Transforming Outpatient Services

**Primary drivers**
- People attend traditional OP clinics as last resort
- Clinic resources are fully utilised
- More people are assessed at home or in community

**Secondary drivers**
- Re-design & signpost pathways
- Optimise use of skills and knowledge
- Provide alternative options to referral/clinic attendance
- Efficient and effective multi-disciplinary triage of referrals
- DCAQ and improving flow
- Effective job planning
- Person-centred, safe, efficient and effective booking practices
- Systematic use of reliable Patient Reminder Services
- Direct access to diagnostic services
- Signposting and support for self management
- People powered health care/services
- Invention, innovation, technology
- Use of data and measurement
- Knowledge into action
- Leadership and behaviour change

**Change concepts**
- Adopt Advice Only, clinical dialogue and referral feedback response
- Standardise multidisciplinary triage approaches including centralised and etriage
- Reduce DNAs through using patient reminder services
- Adopt direct access to imaging (MRI) knee through Orthopaedics, Radiology and GP / AHP redesign
- Getting patients on the right pathway through transforming Community Allied Health Professional MSK services
- Reduce unwarranted variation, waste and harm in management of follow up appointments

**Aim**
All people are seen in the right place, at the right time, by the right person.

**Measures**
- Reduce traditional new appointments by 5% by 2016
- Achieve upper quartile return new ratio by 2016
- Decrease DNAs to 7% by 2016
- No patient waiting more than 12 weeks for new appt.

See measurement plan for local and developmental measures

March 2014
Appendix 3

Patient Story

15 year old Tayside child with a hand injury in NHS Fife (Cowdenbeath Swimming Pool) - right thumb hit by force of a water polo ball and twisted in wrong position. X-rayed in Queen Margaret Hospital, Emergency Department and injury shown to be a dislocation of the thumb - thumb reset into place and a hand support was provided with painkillers - Patient advised to attend Ninewells Hospital Fracture clinic this next day for a cast to be fitted - parent provided with a letter to take to the Fracture clinic. Queen Margaret Hospital (QMH) to pass on x-rays and paperwork.

9am the next day Fracture clinic attended but no-one knew about child - information was attempted to be sought from QMH with no success. Mother managed to explain how the injury happened and treatment in QMH and was sent to the Plastic Surgery Clinic. Plastics did not know anything about the child; child sent to x-ray and asked to attend the Orthopaedic clinic with the x-rays - Orthopaedic did not think they should deal with the case but after viewing the x-rays the decision was to apply a hand cast for support and make a return appointment for 4 weeks. (this took most of the day with the cast being applied at 1pm-ish - child eventually left the hospital approx 2pm)

4 weeks later - attendance at Orthopaedic Outpatients and child informed she was at the wrong clinic and was sent to the Plastic Surgery outpatients. On attendance no paperwork was available from QMH or the previous visit to Out-patients and mother had to provide full history of injury and treatment at both QMH and Ninewells Hospital. Decision was for cast to be removed with a physiotherapy follow-up.

No physiotherapy follow-up arranged and on contacting the Hospital no-one would take responsibility for the hand injury - mother bypassed the referral route from the specialist service and took the child to Kings Cross Hospital, Physiotherapy as a self referral.
### Appendix 4

**UROLOGY OUTCOME SHEET for**

**Clinic:** CBHUSCLN
**NURSE UROLOGY CLINIC WED AM NW**

**Date:** Thu 06 Feb 2014 15:45 R R R

**Name:** Lillllynn’s Instruct

**Address:**

<table>
<thead>
<tr>
<th>CLINIC OUTCOME - PATHWAY STATUS</th>
<th>Outcome Code</th>
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<tbody>
<tr>
<td>Discharged. No treatment required/patient declined treatment</td>
<td>DIS</td>
</tr>
<tr>
<td>No Procedure With Follow Up *** Discharged</td>
<td>MTA</td>
</tr>
<tr>
<td>With Procedure With Follow Up *** Discharged</td>
<td>OPA</td>
</tr>
<tr>
<td>Review Active monitoring/with follow up *** open appt</td>
<td>WWA</td>
</tr>
<tr>
<td>Test/Investigation Awaiting/requested - with follow up ***</td>
<td>WWO</td>
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<tr>
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*** Further Appointment In [ ] weeks/months

Transport Required [ ]

Cystoscopy [ ]

Preassessment Required [ ]

Major Inpatient [ ]

Admin Instructions: ____________________________

Review/Comments: ____________________________

* Number of procedure from list: ____________________________