

# The IMPACT Network:

## Information, Modelling, Prediction and evaluation to inform ACTION

*A network of academics, health and social care managers and practitioners, clinicians, information analysts and patients in Torbay and South Devon delivering research impact and excellence in practice*

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### The IMPACT Network Meeting 1

#### Torbay & South Devon Integrated Care: Learning and Impact Event

**When:** 29<sup>th</sup> September 2016 9.30 – 1.30pm for all participants

**Where:** Anna Dart Lecture Theatre, Horizon Centre, Torbay Hospital, TQ2 7AA

**Facilitator:** Mr Andrew Fordyce, Surgeon & Clinical Systems Engineer

**Lunch:** Sponsored by Exeter University, Business School

#### **Aim**

To provide an opportunity for academics & researchers working in the Torbay and South Devon integrated care system to describe their projects, discuss their top five learning points and impacts to date and to develop new research areas and sources of research funding which will add impact.

#### **Objectives**

1. To provide a forum for university academic partners to discuss their recent projects, successes and challenges with an audience which includes health & care decision makers.
2. To receive feedback from decision makers about alignment of research with organisational goals and suggest modifications to existing projects or creation of new ones
3. To clarify and agree any gaps or duplication, plan future academic research and how it can be funded

#### **Location & car parking**

There is public car parking on the site with costs of £6.00 for 5 hrs and £8.00 for 24hours. Alternatively the site is easily accessible by public transport. More information about how to get to the Horizon Centre is at the end of the conference pack.

#### **Contacts:**

- Susan Martin, Associate Director, Strategy & Improvement, TSDFT
- Mr Andrew Fordyce, Consultant Surgeon, TSDFT

## Submitted Abstracts

## 1. Title: Implementation and impact of an integrated care model

**Authors:** Gradinger Felix<sup>1</sup>; Elston Julian<sup>1</sup>; Martin Susan<sup>2</sup>; Benjamin Ben<sup>2</sup>; Lloyd Helen<sup>1</sup>, Byng, Richard<sup>1</sup>; Asthana, Sheena<sup>1</sup>

PenCLARHC<sup>1</sup>, Torbay and South Devon NHS Foundation Trust<sup>2</sup>

**Approach:** This project seeks to address implementation and impact aspects of the research question: **How can multiple initiatives for integrated care improve experience and outcomes for patients with multiple long term conditions in the Torbay and South Devon area?** Amongst others, the integrated care organisation (ICO) is planning four internal service evaluations: 1. the 'frality' pathway bridging journeys from hospital to people's homes including the enhanced intermediate care service; 2. A central telephony service providing a single point of access and coordination; 3. Rolling out multi-disciplinary 'Health & Wellbeing' teams across five geographical localities; 4. A pilot of a locality-based specialist service to support people with multiple long term conditions. Over the coming three years, the overall approach will include researching the ICO 'case' across its five localities with a mix of combining stories and numbers building on the above service evaluations, doing additional interviews and observations, and looking at documents. This will be conducted by so called researchers-in-residence, i.e. University researchers based within local NHS organisations. This role involves talking to key stakeholders and members of the public, and includes developing an overarching theory for how the system is responding to local initiatives and their potential impact on the experience of integrated care.

**Key Findings:** Research is on-going and already the richness and potential for impact of embedded ethnographic research is promising. Immersing themselves from April-Aug 2016, researchers have produced field notes of 73 dedicated meetings and observed 23 naturally occurring events including multidisciplinary team meetings. As part of the wider South West research programme led by Helen Lloyd (<https://www.plymouth.ac.uk/research/primarycare/person-centred-coordinated-care>), researchers have launched an online staff survey going out to around 500 community staff assessing attitudes and practice in relation to person-centred, coordinated care and a strengths-based approach to care (modified from the Person-Centred Health Care for Older Adults Survey).

Reporting back to the Care Model Operational Group (CMOG) and working with relevant stakeholders horizontally and vertically across the system, the team has produced an overall system outcomes framework adopted by the Joined Up Metrics and Evaluation Group (JUMEG) - which has since been 'gifted' to the Devon-wide Sustainability and Transformation Plan (STP). Other impacts include developing customised logic models and evaluation frameworks, raising the Pioneer profile by reaching out nationally, networking with AHSN and other evaluation teams in the area, contributing to design and secondary analysis of surveys led by the CCG, Healthwatch and Carers Service, as well as delivering public involvement qualitative interview and data analysis trainings supported by PenCLAHRC (<http://clahrc-peninsula.nihr.ac.uk/patient-and-public-involvement-in-research>).

We will present five key learning points including issues around communicating, understanding, championing and implementing the new care model across staff levels in acute and community settings, as well as with partner organisations within the system. The building of sharing relationships across stakeholders and establishing changes in routine care through system change appears to be enmeshed with competing priorities, variations in pace and culture, and top-down and bottom-up dynamics.

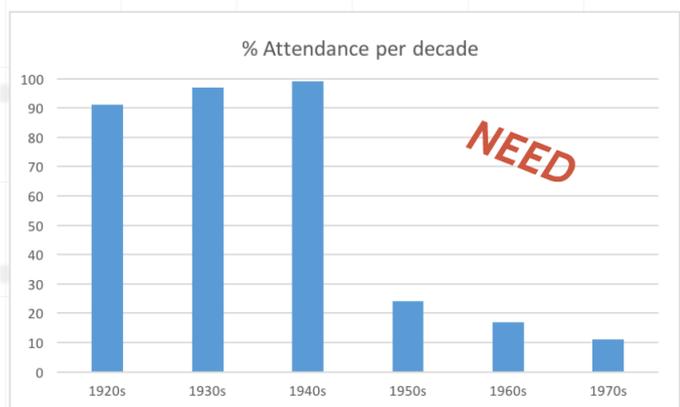
Findings also relate to the management of supposed efficiency gains in a vast and complex portfolio of up to 30 projects including substantial service innovations and other enabling, transformational processes. Within this, challenges include how evaluation and research are owned and taken forward to inform planning and help foster cultural change in a fast-paced, ever-changing and stretched environment.

**2. Title: Healthy Living with Type 2 Diabetes Online (HLT2D Online)**

**Authors:** Tim Spring, Healthy Lifestyles Team, Torbay and South Devon NHS Foundation Trust & Jeff Lambert, Digital Health Researcher, University of Exeter Medical School/Torbay and South Devon NHS Foundation Trust

**Aims:** This research study aims to: a) develop a flexible and accessible version of the Healthy Living with Type 2 Diabetes programme that is targeted at under-65s, and b) evaluate the effectiveness of the intervention on improving self-care and patient confidence in diabetes management.

**Approach:** Type 2 diabetes is a condition which relies heavily on patient self-management with regards to medication adherence, diet and physical activity. Self-management education programmes have been shown to improve a variety of health outcomes<sup>1</sup> including improvements in clinical, lifestyle and psychosocial outcomes for patients with type 2 diabetes<sup>2</sup>. To facilitate this locally the Healthy Lifestyles Team are commissioned by South Devon and Torbay CCG to deliver a face-to-face education programme which provides patients with information, motivation and behavioural skills to increase their confidence in effectively self-managing type 2 diabetes. This is called the Healthy Living with Type 2 Diabetes programme (HLT2D). At present, mean attendance for those aged over-65 is above 95%, however for patients' under-65 attendance drops to an average of 15% (see Figure 1). Possible reasons for non-attendance include perceived locus of control<sup>3</sup> and also shame, stigma and pragmatic barriers such as time, location and work commitments<sup>4</sup>. Digital interventions offer an opportunity to fill this gap, and have shown benefits on glycaemic control in previous studies<sup>5</sup>. In addition, flexible digital interventions have been shown to increase engagement rates<sup>6</sup>.



**Figure 1 - HLT2D attendance rates by decade**

**Key findings to date:** An initial digital version of the Healthy Living with Type 2 Diabetes programme (HLT2D Online) has been developed using primary and secondary research data, brainstorming, surveys, SWOT analysis, options appraisal, meetings, and collaboration with Health and Care Videos. This process informed the following criteria for the intervention: digital, scalable, within budget, improves confidence and ability to self-care, appeals and increases attendance of under-65s. The resulting programme comprised a series of short informational videos, distilling the core educational components of the QISMET accredited HLT2D programme.

In order to test the second aim of evaluation, HLT2D Online will be evaluated in a pre-post design, and results will be compared with those from the face-to-face cohort. Key outcomes will involve confidence scales, PAM, and engagement and acceptability measures. Possible implications of this research include providing a cost-effective, scalable, flexible programme with the potential to alleviate service pressures and prioritise more intensive programmes for patients with a lower level of patient activation, and/or create a conjunctive intervention to enhance face-to-face provision. Future plans involve testing different iterations of HLT2D Online in order to refine the programme further (e.g. with and without practitioner facilitation; digital intervention before or after face-to-face sessions etc.). We also intend to write a proposal for the Torbay Medical Research Fund.

### 3. Title: Developing Skills for weight loss and Maintenance: The SkiM project

**Authors:** Dr Colin Greaves<sup>1</sup>, Dr Leon Poltawski<sup>1</sup>, Tim Spring<sup>2</sup>, Lucy O Loughlin<sup>3</sup>, Richard Merrifield<sup>4</sup>, Prof Rod Taylor<sup>1</sup>, Prof Colin Green<sup>1</sup>

1. *Institute for Health Research, University of Exeter Medical School*
2. *Healthy Lifestyles Team, Torbay and South Devon NHS Foundation Trust*
3. *Health Improvement Team, Devon County Council*
4. *Health Promotion Devon*

**Aims:** This research study aims to a) develop a group-based weight management intervention that specifically addresses weight loss maintenance and b) to develop methods and procedures for conducting a future randomised controlled trial that will be used to evaluate the SkiM intervention.

**Approach:** The SkiM intervention has been developed using rigorous Intervention Mapping methods by researchers at University of Exeter Medical School, working in close collaboration with service users and service providers including key staff from the Torbay Healthy Lifestyles Team. Action research is being used alongside an uncontrolled feasibility study in which 90 people will be treated for six months and followed up for 18 months. Participants will be treated in two batches separated by an intervention-refinement phase to allow iterative development and testing of the intervention. The study includes observational (pre-post) evaluation of key outcomes (weight, physical activity - using accelerometers), as well as questionnaires, semi-structured interviews (with patients and service providers) and recordings of intervention delivery. The data will be used to assess the feasibility and acceptability of delivering the SkiM intervention, and to refine the intervention optimising both retention and its potential

effectiveness. We will also estimate the resources needed for the planned future trial and develop a framework for economic evaluation, including estimation of intervention costs.

**Key findings to date:** The intervention has been developed and clearly specified, along with a training programme for providers. The first round of intervention delivery (N=45) is complete. Feedback to date suggests that a number of people engage very well with the programme and have lost substantial amounts of weight. There is a general appreciation of the focus on psychological barriers and strategies (e.g. identifying the personal needs met by over-eating and finding other ways to address them) and on aiming to make changes that are sustainable (i.e. the focus on maintenance issues). However, overall the drop-out/non-attendance rate is higher than we would like, so we need to focus more on methods for initial engagement and retention of participants. Numerous other ideas have been generated for streamlining and refining the intervention content and delivery to make it more engaging for a wider range of participants. The second round of delivery (with the refined intervention) will start in October 2016.

**4. Title: Prohealth@home: A feasibility study exploring the use of dietitians communicating with individuals at high risk of diabetes via a web based app to reduce the risk of developing diabetes.**

**Authors:** Dr Avril Collinson and Dr Tracey Parkin, University of Plymouth

**Introduction:** Worldwide Type 2 diabetes is increasing at an alarming rate. Lifestyle interventions successfully reduce the risk of Type 2 diabetes, however in practice high levels of professional support are not sustainable. The internet has the potential to provide an alternative means of supporting large numbers of individuals to make lifestyle changes.

**Aims:** The aim of this study was to determine the feasibility of using a web based lifestyle app with dietetic support in individuals at risk of developing diabetes.

**Methods:** 10 patients registered with General Practices in Plymouth, UK were recruited. Contact between the dietician and patients consisted of weekly messaging via the app to facilitate changes in diet and activity behaviour through motivational and cognitive behavioural strategies. Anthropometric, activity data recorded by a pedometer, blood biochemistry and WHO well-being data were collected at baseline, 3 and 6 months. At 6 months patients were invited to participate in a focus group, to assess ease of use and barriers to using the technology and perceived benefits.

**Results:** 9 patients completed the 6 months study, 1 withdrew due to family issues. All patients engaged with the dietician via the app although by 3 months 2 had requested to continue engagement via e-mail and 1 via phone. HbA1c returned to normal levels, activity levels significantly increased and a clinically relevant weight loss of 13% was obtained. WHO well-being index significantly improved and qualitative data highlighted the following; patients perceived understanding of their condition improved, as did understanding of blood biochemistry, tools to help cope with relapse were seen as important factors to help with behavioural change. In addition, interaction with the dietician was rated as an essential component of this web based care package.

**Conclusion:** Dietetic support via a web based lifestyle app may provide an alternative feasible method of care delivery and should be considered for patients at risk of developing diabetes. Patient's preference should be considered as to what platform should be offered to provide this support. Further research is required offering dietetic support using technologies such as the internet and mobile phones. *The authors wish to acknowledge White October for the use of the Web Based Lifestyle App.*

## 5. Title: Integrated Personal Commissioning (IPC) Evaluation

**Authors:** Debra Westlake, Jon Allard, Helen Lloyd, Louise Witts, Emma Rowse

**Aims:** To build a programme theory about how IPC works within distinct geographical areas and unique systems of care within the South West, describing the circumstances and systems which support development of the model and how new ways of working can promote person centred care. Our key objectives include:

- To describe the benefits and drawbacks of IPC from the perspective of the individual participants, those who care for them, the practitioners delivering IPC and the system within which it operates.
- To describe the enablers and barriers to the delivery of local IPC models within the South West Programme.

**Background:** The study forms part of a number of evaluations taking place within PenCLAHRC Plymouth as part of the Person Centred Coordinated Care programme of work and is collaboration between Plymouth University, NHS England and the South West Academic Health Science Network.

The South West IPC Programme is one of nine chosen demonstrator sites for IPC within England and is by far the largest. The DH has ambitions for 50,000-100,000 people to be in receipt of a personal healthcare budget by 2020. Key cohorts are people with significant mental health problems, learning disabilities, children with complex needs and people with multiple long-term conditions. The South West IPC Programme has an important role to play in the delivery of budgets, but also informing understanding as to how they can be delivered in an appropriate, viable and sustainable way. The historical evidence for understanding how personal budgets work in practice is both limited and outdated (Limb 2016). The SW IPC Evaluation and research described here will help address this and build evidence for local and national benefit. Torbay and South Devon is a key South West site.

### **Methods:**

#### Intervention Identification

Our first challenge has been to identify what the intervention (the IPC 'approach') is. A ambiguity in policy and guidance, as well as local practice, means there is considerable overlap with other programmes and initiatives, such as Personal Health Budgets (PHB) and Continuing Health Care (CHC). Locally we have identified three elements of IPC: firstly, a *conversation* takes place focussing on the person's health and wellbeing status and goals, rather than what is available or purchasable from current service provision, secondly, a single, person-centred, *shared care plan* has been co-produced that allows goal setting across, and input from, at least two of the following: health, local authority and voluntary sector and thirdly, a health, social care or integrated *budget* has been offered and accepted.

#### Intervention Evaluation

Individuals approached by practitioners to be part of the IPC programme will be asked to consent to the use of their service use data and a series of validated measures of experience, care, health and well-being. This (primarily) quantitative data will be used alongside in-depth qualitative data from interviews

with those in receipt of IPC, their family members or carers, the practitioners (statutory and non-statutory) working with them and IPC locality leads in CCGs in the SW- to build rich and in-depth individual and geographically-specific case studies. Focus groups will also be used to help build understanding of how IPC is being implemented. The evaluation will also look to explore if IPC fosters coordination around care plans.

**Key findings:**

Torbay and South Devon NHSFT has gained significant traction in the delivery of IPC in the Totnes area through identification of cohorts in primary care and has therefore been chosen as a case study of IPC implementation. Data collection commenced in the summer of 2016. Findings are tentative, but alongside data drawn from three other SW sites a small number of provisional facilitators for introduction of IPC, from five domains, have been identified. These domains are: leaders and champions, cohort selection, teams, relationships/learning and organisation. These domains will be described in the impact session.

**6. Title: Towards A Hybrid Systems Modelling Approach Using Regional Population Projection Data: A Case Study for Endoscopy Services Demand Forecasting and Planning in South Devon and Torbay NHS Foundation Trust.**

**Author:** Alison Harper. University of Exeter

Healthcare services in many parts of the world are under increasing pressure to deliver improved quality of care under increasing financial constraints and growing demand. Forecasting demand for a healthcare service can help with future capacity planning, while simulation-based studies support more informed decision-making for efficient delivery, and coordination of demand and capacity.

This study investigated the application of regional population projection data to forecast demand for healthcare at the local level. The resultant forecasts can be used within a hybrid systems modelling approach, using a simulation method such as discrete-event simulation. Simulation has been used in healthcare extensively, but few studies have combined it with forecasting. As input variables to the simulation model, forecasted demand can provide a basis for 'what if' scenario testing by evaluating the consequences of expected or theoretically feasible changes in demand upon a service.

A review of the healthcare forecasting literature is undertaken, and a methodology is proposed using regional population projections and historical demand data. This aims to inform planning of healthcare services at the CCG level, by producing a set of demand scenarios over ten years. The forecasting methodology is evaluated by case study application to endoscopy services at Torbay and South Devon NHS Foundation Trust.

In the case-study, demand forecasts using regional population projections and a static rate of historical demand indicate that local demand is increasing at a faster rate than the population is projected to rise. Historical patterns of demand have followed an upward linear trend, but extrapolating this may be best done by understanding drivers of past demand, and accounting for future demand upon endoscopy services. Known future policy interventions were shown to account for a significant proportion of future demand using this method. Whilst more work needs to be done in developing the DES model, the results suggest that this methodology provides a plausible set of demand estimates for planning of services at a regional level using a hybrid systems modelling approach.

This methodology can be applicable to other services, in particular those whose demand is most influenced by changes in demography and policy. While forecasts will always be uncertain, the focus on the forecast methodology allows practitioners to explore an understanding of future demand with a set of plausible estimates for capacity planning.

## **7. Title: Reducing Pressure in Emergency Departments through Information Transparency and Real-Time Data: A Case Study from Torbay and South Devon**

Authors: Navonil Mustafee<sup>a</sup>, John H. Powell<sup>a</sup>, Susan Martin<sup>b</sup>, Andrew Fordyce<sup>b</sup> University of Exeter Business School, Exeter, Devon, UK Torbay & South Devon NHS Foundation Trust

The focus of this research is on the application of OR techniques like modelling and simulation, predictive analytics, real-time data and business intelligence to help redesign a network of minor injury units (MIUs) and develop a network of urgent care centres (UCCs) run by the Torbay & South Devon NHS Foundation Trust (subsequently referred to as 'The Trust'). In this paper we report on one such project conducted in collaboration with NHS managers and clinicians, information analysts and the Trust's IT department to make available real-time data on UCC and Emergency Department (ED) wait times. It is expected that this work would inform patients that are in need of medical attention to the alternative MIU/UCC services for minor injury and thereby reducing pressure in ED at Torbay hospital.

### Urgent and Emergency Care - A Vision For the Future

The UK healthcare system is going through a period of transition where, in the period of increasing demand on NHS services, the trusts are being asked to make drastic cost savings and to manage their budgets even more robustly. The *NHS five year forward view* set out a vision for the future with the threefold objective of meeting the changing needs of patients, to realise efficiency savings, and to capitalise on the advances in treatment and healthcare technologies. Towards this seven new models of care have been proposed (NHS England, 2015). One care model is specifically on urgent and emergency care and it encourages the trusts to redesign urgent and emergency care for all affected age groups attending and using ED.

The Keogh review of urgent and emergency care (Urgent and Emergency Care Review Team, 2013) articulates a vision where people with urgent but non-life threatening needs are treated outside of hospitals by services that deliver care in or as close to people's homes as possible; those with more serious or life threatening emergency needs are treated in centres with the very best expertise and facilities. Getting the first part of the vision right will relieve pressure on the hospital based emergency services, thus freeing up resources which could be used to realise the second part of the vision. This vision has been adopted in Torbay and South Devon by the local NHS Trust through their urgent care strategy for 2014/15 – 2019/20 (South Devon & Torbay CCG, 2015).

### Overcrowding of ED in Torbay and South Devon

The Trust operates one acute/ED hospital at Torbay and several community hospitals at Brixham, Dawlish, Newton Abbot, Paignton and Totnes. These hospitals are equipped with MIU/UCCs that are equipped to provide services for minor conditions such as broken bone, muscle injury, minor head injury, cut and wound (dressing), minor burns, skin infections, etc. However, users are unaware of the availability of these centres which may be appropriate to meet their needs close to where they are located. Therefore they usually choose to go to ED as they are confident they will be seen and have their medical needs met. This has led to the overcrowding with the rate of ED attendance at Torbay hospital now above the national average with 39,419/100,000 population, compared with 30,041/100,000 in

England (Turner, 2015). Another factor contributing to the overcrowding is the increased demand from tourists during the summer (by one estimate the catchment population of the trust increases by over 100,000 during this period).

A Web-based application for Information Transparency

In healthcare, the availability of real-time data empowers users and may increase their levels of self-activation (taking control) in early reduction in anxiety. Our approach was therefore to enable those requiring medical attention to quickly identify MIU/UCCs that met their needs. This was achieved by developing a web-based application that presented real-time data from the ED and the UCCs on current waiting time, the number of patients waiting to be seen and total number of patients in the department (Figure 1). This allowed them to take informed decision as to whether their condition required attention from ED (which may have long waiting time) or they would be better off receiving treatment at an UCC with a shorter wait time. Further, the trade-off involved in travelling to an UCC that is further away from home but with relatively less number of patients or be seen at the nearest UCC. It is expected that the wider dissemination of the website in Torbay and South Devon would reduce some of the peaks in ED demand and make it easier to manage patient flow.

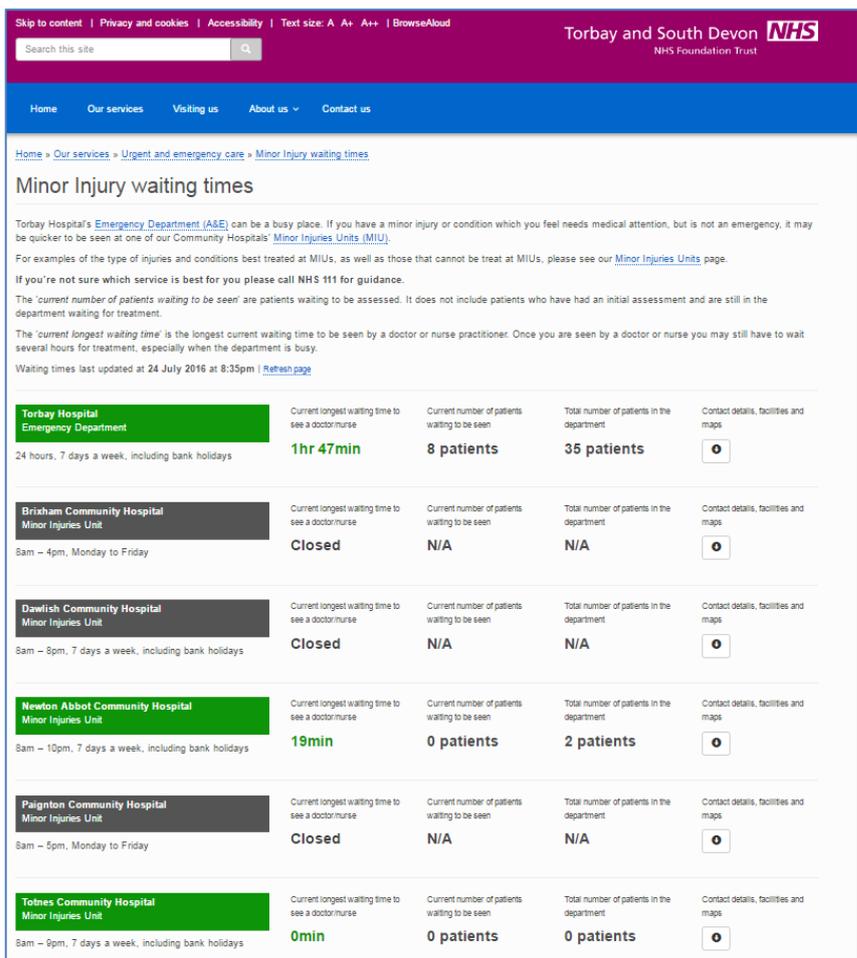


Figure 1: Real-time data on ED and UCCs wait-time (T&SDNFT, 2016)

Impact

Our approach could be implemented in other NHS Trusts in England since the real-time data on waiting times that are held by foundation and acute hospital trusts are based on the NHS data model and the

‘Accident and Emergency Commissioning Data Set’ (HSCIC, 2016a). In other words, this is the single view of data and all databases that carry the data for ED/UCC attendance must confirm to it. This makes for easier implementation of our technological solution and realisation of impact.

#### Future Work

Our future work involves the development of a wait-time predication algorithm. The algorithm will be able to forecast the impact on near-future waiting times based on current waiting times and anticipated arrivals based on historic data. The algorithm will rely on the *Hospital Episode Statistics* data which is maintained by the Health and Social Care Information Centre (HSCIC, 2016b).

#### 8. **Title: Learning to manage innovation – TACIT**

Author: Dr Anna Trifilova, Exeter University - EU Funded project.

**Abstract:** This paper explores a challenge in innovation around mainly how you learn about it. Learners know they should act, but training does not enable this and whilst they gain considerable ‘explicit’ knowledge, they fail to gain the ‘TACIT’ element that helps them to apply it. We suggest this is partly due to the mode of delivery and there is a need for different approaches. In this paper we report on continuing research around tacit knowledge. The objective of our project is to combine the efforts of business and university educators to create new learner-centred teaching methods, open up new learning opportunities and develop the practical application of entrepreneurial skills. We look into eight different methods of learning about innovation through: storytelling, peripatetic learning, futures-based learning, entrepreneur laboratory, innovation theatre, design making, innovation games and project-based learning. The project builds on an existing community linked to International Society for Professional Innovation Management (ISPIM) focused on innovation and entrepreneurship (I&E). To ensure learning outcomes, our academic partners are international mix including the University of Exeter (UK), Soundern Denmark University (Denmark), RWTH International Academy (Germany) and Leipzig Graduate School of Management (Germany). As another quality measure of learning outcomes, we focus on the mix of learners. TACIT is automotive/manufacturing), and LEGO (toys/games/design).

The project outcomes will be framed as an innovative teaching module to be embedded in the existing curricula of higher education institutions and in the corporate training programs well-balanced in terms of sector representatives: Nokia (telecommunication), Lufthansa Systems (service industry: logistics), AachenMünchen (service industry: insurance), Torbay Hospital (public sector/national health service), BMW.

The full paper is available at: <http://www.torbayandsouthdevon.nhs.uk/>

#### 9. **Other current areas of research at Torbay & South Devon include:**

- Vanguard evaluation – urgent care. TSDFT. Contact: [susan.martin@nhs.net](mailto:susan.martin@nhs.net)
- Singing for wellness. Contact Dr Elizabeth Ginn. TSDFT. [elizabethginn@nhs.net](mailto:elizabethginn@nhs.net)
- Male suicide. Contact Gerry Cadogan. Public Health. [Gerry.Cadogan@torbay.gcsx.gov.uk](mailto:Gerry.Cadogan@torbay.gcsx.gov.uk)
- Stroke modelling. Contact Dr Mike Allen. PencCHORD [M.Allen@exeter.ac.uk](mailto:M.Allen@exeter.ac.uk)