FUTURE FOCUSED FINANCE

hfma Healthcare Costing for Value Institute

Engagement Value Outcome

Case studies

University Hospitals Birmingham NHS Foundation Trust

October 2020

Dermatology
Trauma and Orthopaedics
Vascular Surgery

Contents

Foreword

> *In today's NHS, organisations can only deliver effective patient care within available resources by creating an environment where working relationships between clinicians and finance teams are thriving. Clinicians are responsible ultimately for the way in which services are delivered and for committing resources. They can only do this effectively with input from finance colleagues. For instance, through sharing cost and patient outcomes data for better informed decision making.*
>
> – Department of Health and Social Care, Effective clinical and financial engagement: a best practice guide for the NHS, 2013

This quote from the Department of Health and Social Care emphasises the importance of building collaborative relationships between finance and clinical teams to ensure that value is at the centre of decision-making.

Value in healthcare – maximising the outcomes which matter to people at the lowest possible cost – is increasingly seen as a key lever for supporting the delivery of high-quality sustainable healthcare.

The roll-out of patient-level costing (PLICS) across the NHS means that services have an increasingly rich source of information to help them understand their patients and services, however awareness of this data outside the costing team is not widespread.

The HFMA's Healthcare Costing for Value Institute and Future-Focused Finance have worked together to develop the Engagement Value Outcome (EVO) framework. EVO promotes collaborative working between clinical and finance teams and their collective understanding of PLICS, providing the NHS with a framework to ensure resources are used in the most effective way possible to provide high-quality care to patients.

During the second half of 2019 we piloted the EVO framework with four trusts, covering acute, mental health and community services.

This report describes the experience of those involved in EVO at University Hospitals Birmingham NHS Foundation Trust who chose to look at Dermatology, Trauma and Orthopaedics and Vascular Surgery.

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What is EVO?

EVO facilitates the **engagement** of multidisciplinary teams in the understanding and use of patient-level information and costs, and its relationship to **value** in healthcare. The ultimate purpose being to achieve the best **outcome** for the patient within the resources available.

A trained facilitator works with a core group of individuals at specialty level over the course of a few months. The aim is to improve their understanding of PLICS data, so that they start using it on a regular basis to support improvements in the efficiency and effectiveness of how patient care is delivered. EVO can be delivered at any NHS trust that has implemented PLICS in any sector.

''EVO helps clinical teams identify how they can use their resources in the most effective way possible to provide high-quality care to their patients''

Patient-level information and costing systems (PLICS)

The NHS has increasingly detailed information – on both activities and costs – about how its resources are used at patient level.

All acute trusts are required to calculate their costs at patient level and over the next couple of years the same will be true for mental health, community and ambulance trusts. Reference costs, which are the average costs of a particular treatment, are gradually being replaced by PLICS.

Combined with other data sources, PLICS provides clinical teams with a rich source of information to help them understand their patients and services. Linking patient-level costs with outcomes allows the NHS to promote value for the patient, ensuring that resources are used in the most effective way possible to provide high-quality care.

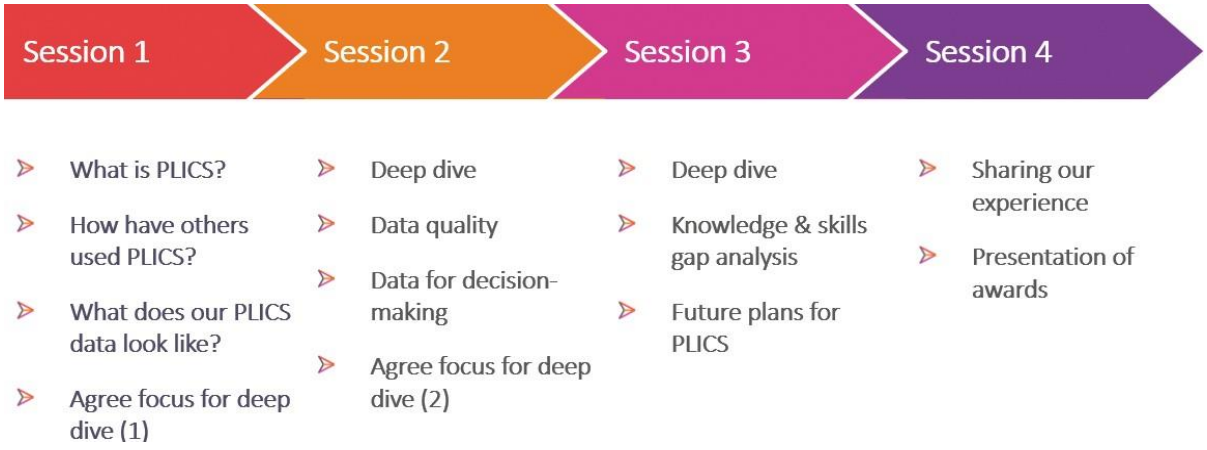
"PLICS provides clinical teams with a rich source of information to understand their patients and services"

EVO in practice

Trusts that have implemented PLICS often struggle to find the time, resource or direction to begin using the data collaboratively. Taking part in EVO provided the four pilot trusts with the support they needed.

Each pilot trust **identified** three specialties or clinical services which would benefit from the EVO experience. Appendix A provides more information about the trusts and their chosen services.

Each team met for three two-hour sessions over a period of three months. The final fourth session provided the opportunity to share learning across the trust. Sessions were delivered by trained facilitators using a mixture of video case studies, deep dives into local PLICS data and group discussions.



Who was involved?

Key to the success of EVO were the two EVO sponsors at director level:

- clinical champion
- finance champion

A multi-disciplinary team made up of clinicians, operational managers, finance and informatics staff attended all the EVO sessions for a particular specialty or clinical service.

Trust summary

The EVO pilot provided University Hospitals Birmingham NHS Foundation Trust (the Trust) with the chance to explore from a range of perspectives how best to use PLICS data in its programme of service transformation. The Trust's recent merger (Appendix B describes this) had provided the opportunity and the imperative to develop new service models. A key aspect of these developments, and one at the heart of the EVO approach, was the need for individuals from a number of disciplines to jointly agree how to explore and reduce unwarranted variation in clinical practice and patient outcomes in an evidence-based way.

By bringing together clinical teams – doctors, nurses, therapists and operational managers – with finance and informatics colleagues, the Trust used the EVO pilot process to consolidate its thinking to date by asking 'what do we already know and what is the next question?'. The central costing team had already worked with clinical teams to improve the quality of costing data, but the EVO pilot offered the Trust something more: the structured nature of the facilitated sessions helped colleagues who were new to working with each other to become functioning transformation teams.

The case studies in this report provide a flavour of some of the conversations the multi-disciplinary teams had within their EVO sessions as they explored their PLICS data. These conversations varied depending on the maturity and depth of the data. EVO was not about completing detailed improvement projects, but rather about providing teams with some facilitated time to start thinking about how PLICS data might help them to better understand their patients and services.

Impact of being involved in EVO

For each of the three services involved in the EVO pilot, clinicians report that they have learned something that they can act on to improve the accuracy and usefulness of patient-level information. The sessions provided the multi-disciplinary teams with opportunities to tackle sometimes long-standing issues and to establish new working relationships. Engagement was an essential first step for these teams, using data as a basis for sometimes difficult conversations. EVO helped the teams to identify commonalities and agree priorities.

The Trust had been using PLICS data in service reviews and to develop business cases for investment, but on an ad hoc basis. It is keen to get to the point where service teams use PLICS data to help drive day to day clinical, service planning and other decisions as 'business as usual'.

The Trust is clear that this is a 'win win' situation. As the assistant medical director concluded: "If you do the right thing for the patient, your money will come right. This process has evidenced this beautifully."

EVO achievements

- Clinical services have a better understanding of how PLICS data can support service improvement
- Working relationships between clinical and operational management, costing teams and the wider finance function were strengthened
- Opportunities for improving the breadth and quality of PLICS data were highlighted
- Improvement opportunities for the efficiency and effectiveness of patient care were identified
- Lessons were learnt around the reporting and presentation of data as information to achieve maximum understanding and influence.

Key learning points from the EVO experience

Comments from those involved in the EVO pilot at the Trust include the importance of:

- having clear buy-in from senior management, demonstrated by active participation in EVO sessions
- getting a wide range of people together and ensuring that the majority attend all sessions. The Trust felt it had the right 'core' expertise around the table, establishing time 'badged' for EVO and so protected from day to day pressures
- being prepared to meet in smaller 'task' teams between meetings to take things forward
- turning data into information: the process uncovered some issues with data quality but colleagues were resourceful in finding proxies and 'good enough' data to use, coming up with different methods to present data in a way that was accessible to clinical teams
- having a very open mind about what areas within a service might be explored, and being helped through facilitation to listen to each other's views on this
- taking a 'does this feel right?' approach, comparing people's experience of the service with what the data seems to be saying
- having a plan to communicate what happens in the EVO sessions to colleagues within services so that EVO is not seen as a one off 'initiative' for a specific group of people
- bringing into the EVO process data and tools from a wide range of sources, for example specialty specific databases and registries, GIRFT (Getting It Right First Time) and Model Hospital
- managing expectations: the costing team were unable to fulfil some requests for data due to software restrictions, but the EVO process has added to a 'wish list' for system developments.

Challenges and top tips for overcoming them

The EVO pilot raised a number of challenges, which those involved in the pilot had to overcome.

'Pictures not pivot tables'

The Trust's approach to presenting costing data is relatively under-developed. Graphical information is available in an ad hoc way rather than at the press of a button. This means that the Trust is not yet able to easily present information in a way which immediately engages non-finance colleagues. Some progress has been made in presenting inpatient costing data in a graphical form, but there is as yet no series of dashboards to present, compare and highlight significant information for all patient services.

As part of the EVO process, dashboards from other organisations were reviewed and work is underway to design a 'best fit' for the Trust's needs.

Data and data quality

The costing team welcomed the EVO pilot as, among other things, a chance to demonstrate the breadth of costing and activity information available. Through their requests for information and intelligence about services, clinicians and operational managers challenged the costing team to come up with ways to use that data to answer queries. New ways of working with data were explored.

In all service areas, how data is collected became an important focus. Due to the recent merger, this still varied between hospital sites. Following through the 'paper trail' from clinical recording to how clinical information is coded proved to be revealing and has led to 'quick wins' in data quality improvement.

Key data items were identified as a focus for improved data collection, to improve the richness of patient pathway and costing information. These included:

- outpatient procedure time information for dermatology
- complexity and co-morbidity recording in pre-operative clerking and emergency admissions
- recording of therapy support interventions for trauma and orthopaedics.

PLICS is about more than costs

Before the EVO pilot, some members of the multi-disciplinary teams involved had not looked at how PLICS data could, for example, demonstrate the daily interventions received by an inpatient. The ability to see what happens to a patient on each day of their stay, by presenting data as a patient story, was 'powerful and illuminating'.

EVO ‘light’

The Trust is reviewing its EVO pilot experience with a view to identifying the features that it would currently find most valuable and rolling these out as an EVO approach to other services. A ‘condensed’ methodology would aim to take the most valuable elements and make the best use of time.

The Trust is also using EVO as a driver to review and improve the information that is made available to clinicians and operational managers. The aim is to ensure the data is appropriate, relevant and valuable, allowing staff to actively engage with the information to improve both pathways and services as a whole.

Further information

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Case study one – Dermatology

Introduction

The 2018 merger (Appendix B) means that the Trust now operates dermatology services across three sites: Queen Elizabeth, Good Hope and Solihull Hospitals. Ensuring consistent, high quality services are being delivered from all sites is a key focus for the Trust.

Since the merger the core dermatology management team had been working well, but they realised there was still more to do to ensure service data was being fully exploited to identify variations in clinical practice. The EVO pilot provided the opportunity and the momentum to explore the value of PLICS data in evaluating the services being delivered.

Getting new colleagues together around a table with a shared aim was recognised as an important step in creating an effective team approach. The chance to do this in a facilitated way, using data as the basis for sometimes difficult conversations, was welcomed by clinicians, operational managers, the costing, income and contracts teams and operational finance colleagues.

Topics explored

The first EVO session identified some headline areas of common interest, where colleagues felt there was scope to make improvements in the quality and use of PLICS data to benefit patient care. These were:

- the level of detail in coding of dermatology procedures
- consistency in coding within outpatient and day case procedures
- sub-speciality and consultant-level data, including costs of consumables
- costing data associated with multi-disciplinary care, for example for patients with cancer.

The initial EVO session considered data on 'non pay' costs for outpatient consultations, surgical procedures and day cases. It also looked at an example patient 'bill' to understand how PLICS data was allocated in patient episodes of care.

An important consideration was identifying a 'core' of service information, based on the most reliable data, to be shared widely with colleagues at all levels across all sites, to engage them in the process as soon as possible. This was recognised as crucial to establishing the value of PLICS data in day to day decision making for the whole dermatology service.

Having reviewed a range of data on dermatology procedures, the EVO pilot group identified areas for further investigation:

- variation in coding of activity across hospital sites
- two procedures where the coded activity data did not match the expected activity within the service:
    - contact allergy (patch testing)
    - photo-dynamic therapy
- opportunities for ensuring clinicians understand the cost of consumables and disposable items.

The group also considered how other trusts presented data and looked at options for dashboard design.

Variation in data recording across hospital sites

The two trusts which had come together in the merger still operated separate data systems. Queen Elizabeth Hospital (QEH) data could be compared with combined data from Heartlands, Good Hope and Solihull Hospitals (HGS). The group was interested in how activity data might vary between the two systems, and how much of this was down to coding or variation in clinical practice.

In looking widely at PLICS activity data in the early EVO sessions, some specific areas stood out.

Moh's micrographic surgery

Moh's micrographic surgery, named after a pioneering surgeon, is used in the treatment of skin cancers. Although QEH treats a higher number of patients with skin cancers than HGS, the EVO group considered there should be no reason for the type of treatment undertaken to differ significantly across the sites.

However, the data analysed in the EVO pilot session indicated wide variation in the percentages of patients coded as having had 'multiple major skin procedures' (JC40Z).The group agreed that this unexpected variation warrants a more detailed review.

Coding of follow-up appointments

The percentage of patients whose outpatient visit was coded as 'multi-professional' or 'single professional' for their follow-up appointment differs between QEH and HGS data systems.

The group had further questions – was this a coding issue or does it represent variation in clinical practice? It concluded that a similar analysis was needed at the level of specific clinics, sub-specialisms and by consultant, to fully appreciate the implications.

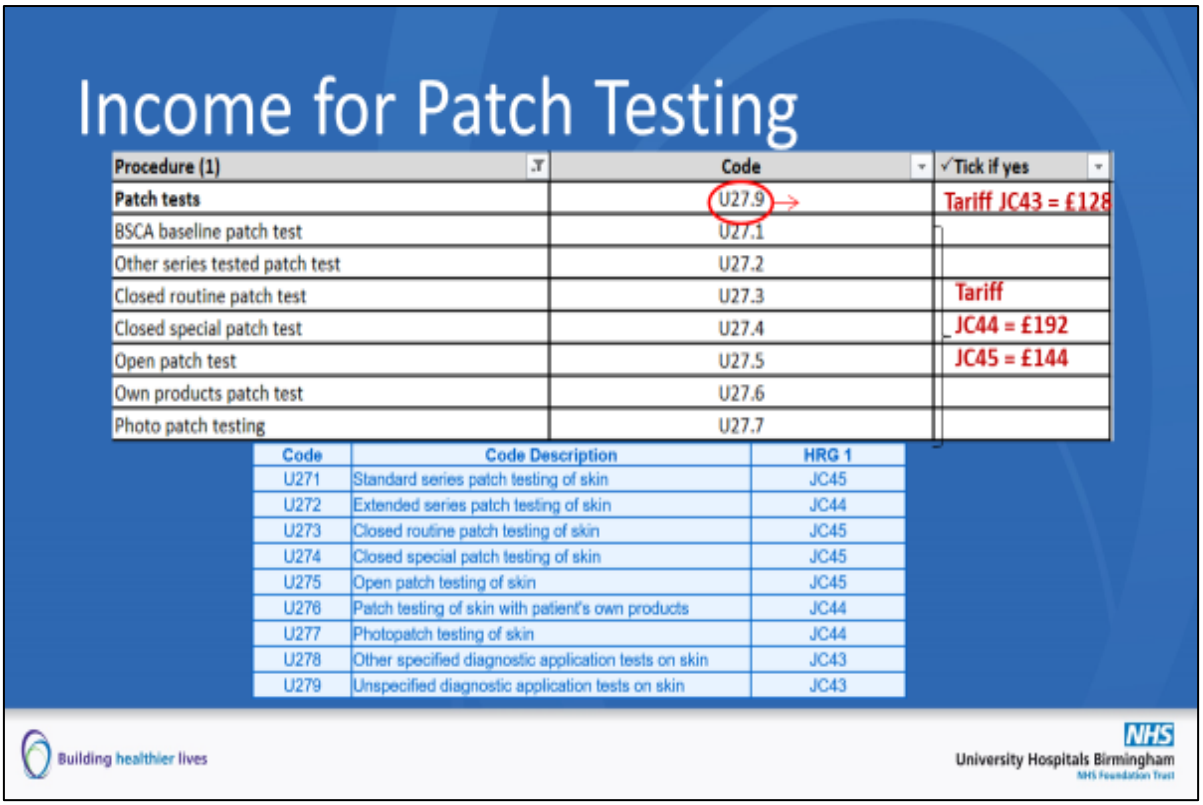
Investigating contact allergy (patch testing) service data

The initial review of activity data for the contact allergy service highlighted that the data did not match the expected activity within the service. The multi-disciplinary group was keen to understand the data from all perspectives:

- was activity being accurately recorded by clinicians?
- was all activity properly coded?
- how might the quality of clinical data improve?
- does the data captured result in the Trust receiving the right income?

Figure 1 shows the range of Healthcare Resource Group (HRG) tariffs for different types of patch testing starting at £128 and with a higher tariff of up to £192 for 'extended' testing.

Figure 1: Tariffs for various types of contact allergy patch testing



Between EVO sessions, the finance costing manager met with the lead consultant for patch testing and the outpatient department clerk, to walk through the process and to understand the coding pathway.

The outpatient procedure coding form for dermatology requires that all tests undertaken are ticked. However, in understanding how the form is then processed, a problem became clear to the EVO pilot group: if more than one procedure is ticked, when the form is entered into the system, the software which allocates HRGs subsequently allocates an incorrect HRG. This means that the HRG grouper does not accurately report the activity undertaken and so the ability to accurately benchmark clinical data is lost. The Trust estimates that only 50% of activity has been appropriately captured at HRG level.

As well as affecting the quality of clinical data, this has implications for understanding the true cost of the care provided and Trust income.

Photo-dynamic therapy (PDT)

By analysing PLICS data as a group, it was clear that patch testing was not the only area where the data at HRG level did not seem right when compared with the perception of activity undertaken. PDT showed similar issues with HRG allocation.

Of particular note was if a dressing was applied and the associated dressing procedure box ticked on the outpatient form, the incorrect HRG was assigned. This again has implications for activity reporting and possibly income. An estimated 150 procedures per year appear to be subject to this mis-reporting.

By discussing this in the facilitated EVO sessions, the group could take a multi-disciplinary perspective to thoroughly explore the issue and its implications, and to agree a way forward. As a consequence, specific clinics will be set up for PDT activity only, focusing on providing specialist care for these patients instead of them being part of a general clinic.

Cost of equipment and consumable items

In early EVO sessions the group considered options for ensuring that clinical colleagues understand the cost implications of decisions made about equipment used in treatment. The EVO pilot group agreed it was sensible to engage with the review of procurement being undertaken at the Trust which focuses on:

- putting price tags on shelves
- understanding usage by volume and cost
- reviewing whether the same procedure packs are used for specific procedures across all sites
- analysing the items in the 'top 10' spend by the department to review significant savings opportunities.

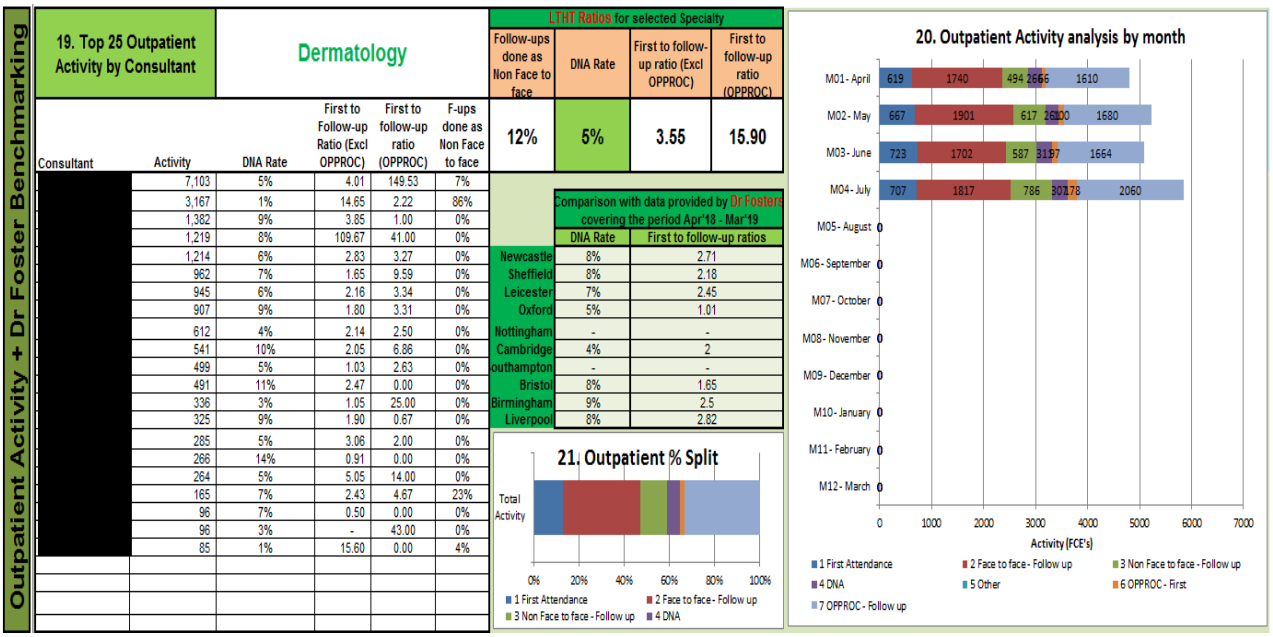
Improving the presentation and use of data in dermatology

The EVO pilot identified key areas for data quality improvement, including consistency of recording and ensuring that recorded data is coded as expected. This includes making sure the data collection forms are standardised and easy to use. This is particularly important as the merged trust moves to a unified electronic patient record.

Of equal importance in ensuring patient level data can be used effectively is how it is presented. Is it easy for clinicians and service managers to engage with PLICS data and draw sound conclusions from it? The Trust knows that that this engagement is crucially important to improving data quality. When PLICS data is actively used in service planning and day to day decision-making, data quality issues can be highlighted and resolved.

A dashboard from a major teaching hospital trust was reviewed by the dermatology EVO pilot group. This analysed the top 25 outpatient activities by consultant and showed overall activity by month (figure 2). The dashboard also benchmarks information against other trusts' data. The Trust is considering how best to incorporate this approach to get the most out of 'at a glance' data presentation.

Figure 2: Example dashboard for dermatology outpatient activity



Conclusions and next steps

The dermatology EVO pilot looked at a wide range of issues and opportunities. In some areas there is further work to do to understand the reason for variation between QEH and HGS, for example the treatment types for skin cancers and the dermatology follow-up rates. Is the variation down to differences in clinical practice or how activity is recorded?

Four key improvement actions have already been identified:

- **Moh's micrographic surgery**: agree across all sites a consistent approach to coding multiple major skin procedures, and update the Trust's outpatient department coding procedure manual
- **patch testing**: redesign the outpatient department procedure coding form and provide weekly validation information to consultants to ensure coding is correct
- **photo-dynamic therapy**: hard code the relevant HRG code against the clinic code
- **procurement**: work with procurement to review procedure packs for consistency, quality and pricing.

Other planned action to support trust-wide use of PLICS by clinicians includes:

- developing options for how data can be best presented, including through dashboards
- maintaining the discipline of multi-disciplinary meetings to ensure a rounded perspective on interpretation and use of PLICS data
- developing and cascading communication and training on the value of PLICS through the quarterly joint governance meetings

- annually reviewing external changes such as to HRG coding and how these impact on services
- establishing a feedback and reporting 'loop' so that coding can be validated locally to ensure correct coding is maintained
- replicating the EVO pilot work in rheumatology, another outpatient-based service, where colleagues have understood the power of using data discussions to make progress in service transformation.

Case study two – Trauma and Orthopaedics

Introduction

At the time of the EVO project, Trauma and Orthopaedics (T&O) was delivered at four sites (Queen Elizabeth, Heartlands, Good Hope and Solihull hospitals). These variously have T&O theatres, wards, day case facilities and outpatient services. Since the 2018 merger, the T&O department has been working to realign its services, driven by issues with variation in performance against best practice. This variation was also highlighted through GIRFT (Getting It Right First Time) and the Model Hospital initiative. A service transformation project was underway focusing on length of stay, clinical outcomes, best practice tariff performance and referral to treatment (RTT) performance. In addition, decisions were being made about aligning services into 'hot' (emergency) and 'cold' (non-emergency) patient pathways.

T&O saw participation in the EVO pilot as an opportunity to utilise PLICS data to:

- build on the developing trust-wide engagement established as part of the realignment work
- review clinical pathways and the contribution of all care professionals to the patient journey
- agree a set of benchmarks for data – currently there are several in operation.

The EVO group was clear that, if you do the right thing at the right time for the patient, then the money follows. This shared understanding created a helpful platform for multi-disciplinary discussion.

Topics explored

Taking the themes identified in the initial EVO session, the group selected two patient-centred areas of focus for elective and emergency pathways:

- length of stay for elective patients undergoing total hip replacement and total knee replacement, including a focus on complication and co-morbidity ('cc score') data
- performance against the best practice tariff for fractured neck of femur (NOF) procedures.

Patient length of stay for elective knee replacement and elective hip replacement

The EVO pilot focused on PLICS data for the Trust's average length of stay for elective hip and knee replacement. This data was compared with a good practice benchmark. Figure 3 shows a sample of the data the group reviewed.

Figure 3: Trust length of stay (LOS) for elective knee and hip replacement compared with good practice benchmark

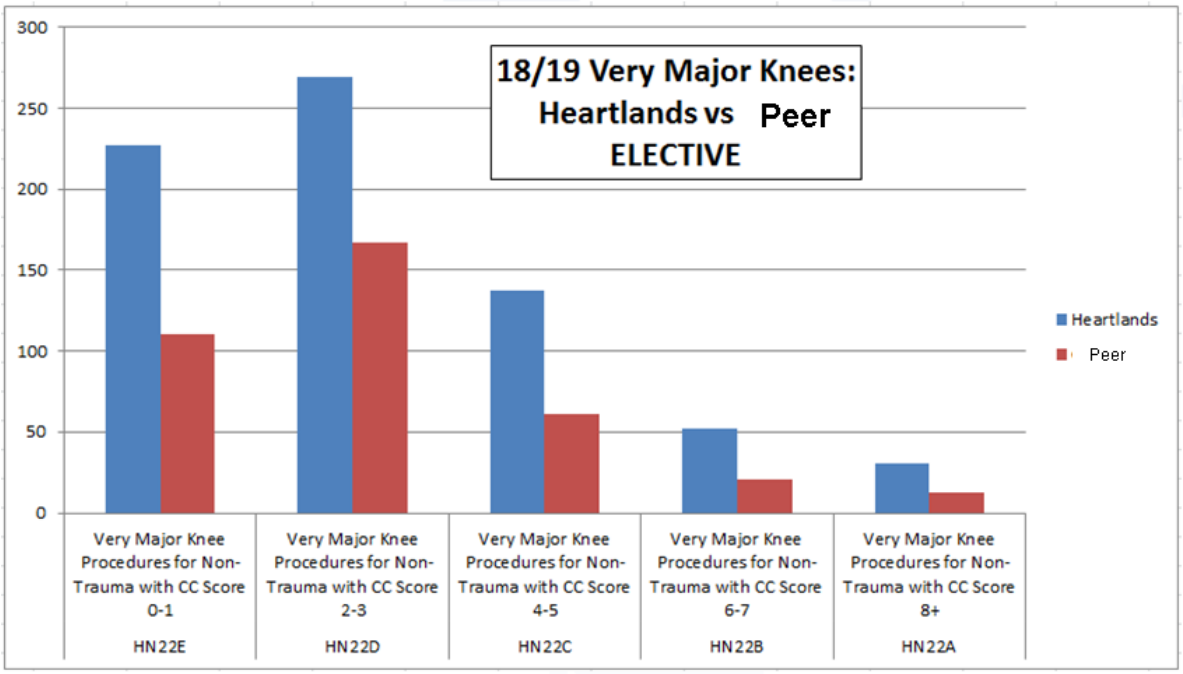
Spell HRG	No. spells 2018/19	Average LOS (days)	Variation from benchmark	Bed day opportunity
HN22E – Very major knee procedures non trauma with cc score 0-1	331	4.2	+ 1.07 days	354
HN22D – Very major knee procedures non trauma with cc score 2-3	330	5.96	+ 1.55 days	512
HN12F – Very major hip procedures non trauma with cc score 0-1	215	4.91	+ 1.73 days	372
HN12E – Very major hip procedures non trauma with cc score 2-3	184	6.38	+ 2.31 days	425

Complication and co-morbidity (cc) scores are coded in the range 0 to 8+. Figure 3 shows the potential to save 1,663 bed days for patients with cc scores of 0-1 and 2-3. Taking into account all cc scores up to 8+, the EVO pilot review identified that the potential bed days the Trust could save if it matched best practice length of stay would be over 2,000 per year. This evidence supports the Trust's current push on 'early supported discharge' initiatives.

The data also highlighted that the Trust's complication and co-morbidity coding looked low, The EVO group was keen to understand how its data on cc scores compared to other trusts' data.

Graphical analysis of HGS data showed that, as a proportion of procedures undertaken, cc scores were in line with those recorded at an appropriate peer hospital as identified by the clinical team. HGS undertakes about twice as many procedures as the peer hospital and figure 4 shows that the number of patients for each cc score at the Trust is roughly twice that for the peer hospital.

Figure 4: HGS cc scores compared with peer organisation



The group discussed the fact that the significant proportion of patients with a low cc score did not 'feel right' when set against time spent in theatre and population treated; there was general agreement that the peer were also not fully capturing all complications and comorbidities within their diagnostic coding and that further peer data should be reviewed.

Four ways to improve the situation were identified, as set out in 'next steps' below.

Neck of femur 'best practice tariff' performance

Comparing patient pathways

The EVO group studied data showing episodes of care for patients with fractured neck of femur. Figures 5 and 6 show two patient pathways. For both, at the time of admission, a 'fit for discharge' date was estimated. Both patients missed this date. However, data shows that the first patient (figure 5) appeared to have received therapy support on each day of their post-operative stay (indicated by the pink and blue bars). For the second patient (figure 6), no therapy support was recorded until after the due discharge date.

For the first patient, the best practice tariff requirements were met, but this is not the case for the second patient where time from admission to surgery was 50 hours. Costs in each example are similar but the tariff paid differs considerably when the best practice tariff is missed.

Figure 5: Example of a patient episode of care meeting best practice tariff

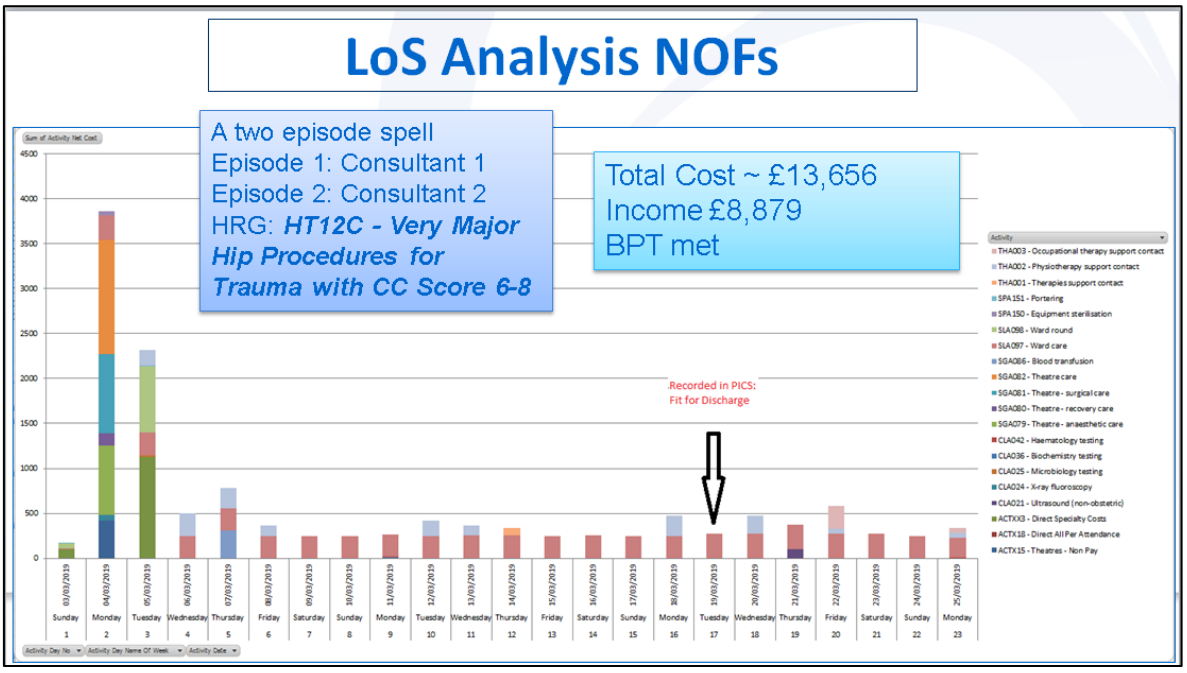
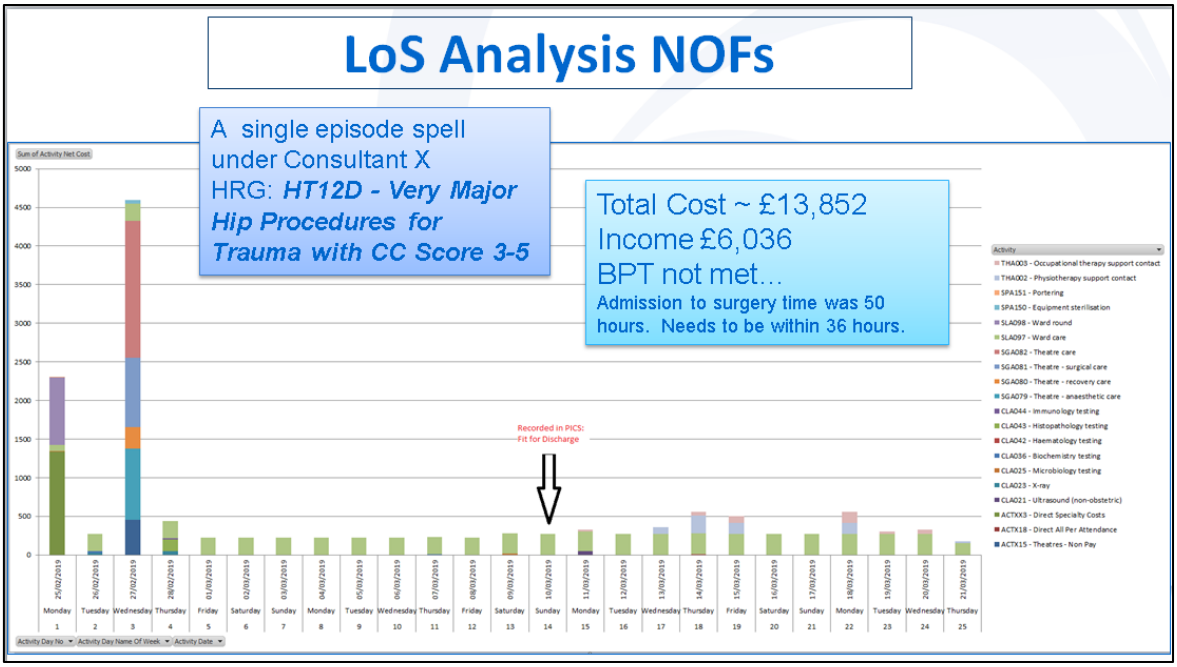


Figure 6: An example of a patient episode of care not meeting best practice tariff BPT



The clinicians and operational managers recognised that therapy input was important in reducing length of stay. Presenting information graphically, showing significant differences in which interventions had been recorded each day for patients with similar needs, and apparent differences in outcome for the patient, stimulated the need to further investigate therapy input and recording.

A separate piece of work is now underway to explore this data and potential changes in practice. This includes:

- a focus on ensuring that all services including therapists are consistently recording their intervention with patients
- using this more accurate date to inform further the development of a business case for implementing a seven-day therapy service.

Discussions using this PLICS data are also planned with others, such as matrons and ward managers, to understand ways to reduce delayed transfers of care. The deputy divisional finance manager was clear that in all of these areas 'difficult conversations about roles in patient pathways will be helped by good data.'

Improving data for T&O

An initial look at PLICS data in the early EVO sessions raised a series of very significant data questions:

- why was there a high proportion (15%) of patient episodes with no dominant procedure noted after admission via the emergency department?
- do procedures recorded match those verified by the specialty as actually having occurred?
- is the complexity and co-morbidity score coding correct?

This has focused the service team on a programme of data improvement. Building on the engagement already underway to realign T&O services, a new emphasis is being placed on the importance of accurate and complete recording of data. Opportunities to use data in new ways are also being explored – for example information about time in theatre compared with recorded complexity and co-morbidity scores.

Data at a sub-specialty level is also now being explored by the group as a valuable way to understand in more detail clinical variations and the quality of the patient experience.

Conclusions and next steps

Building on the patient-centred approach and wider engagement of the EVO sessions, the group intends to explore other important areas of work:

- work with therapies colleagues to clarify their role in best-practice patient pathways
- as part of the 'early supported discharge' programme, use the pre-screening sessions to focus on capturing the patient's complications and co-morbidity score
- align the documentation across all sites so that the complications and co-morbidity information is clearly set out for coders to see, and clear in the discharge summary
- benchmark a range of data against a wider set of trusts
- consider developing an algorithm to pull together information on theatre time used, who undertook the operation and patient length of stay, to highlight where recorded cc scores might need to be updated.

Case study three – Vascular Surgery

Introduction

A programme of change was already underway for vascular services as the EVO pilot began. Since the 2018 merger, the department had been working to realign its services which are predominately delivered at two of the Trust's four sites: Queen Elizabeth Hospital and Heartlands Hospital. Colleagues from across the Trust's different sites had been meeting regularly since the merger. The clinical lead was focused on capturing 'hearts and minds' and saw the EVO pilot as a way to strengthen that approach and take the work further with input from a wider team of stakeholders.

The multi-disciplinary group was clear from the start that it wanted to explore how PLICS data can help the department with:

- integration and aligning of pathways
- improving decision making
- bringing different teams together to discuss areas for improvement.

Topics explored

By examining available data, and bearing in mind other workstreams already underway as part of aligning services, the key areas to look at became clear:

- **Critical Limb Ischaemia** is a severe obstruction of the arteries which markedly reduces blood flow to the extremities (hands, feet, and legs) and has progressed to the point of severe pain and even skin ulcers or sores. The condition often ends in angioplasty, bypass or amputation. Clinicians and managers knew that practice differed between the Trust's hospitals. Could PLICS data be used to demonstrate which pathway is both cost effective and better for patient outcomes (for example shorter length of stay)?
- **coding of complication and co-morbidities** (cc scores) – was there a consistent approach across the Trust, and how did this benchmark against other trusts?
- **'procedure not done'** – the EVO group recognised that the Trust had a large number of patients in this category – was there perhaps a coding issue at play here?

Critical Limb Ischaemia pathway

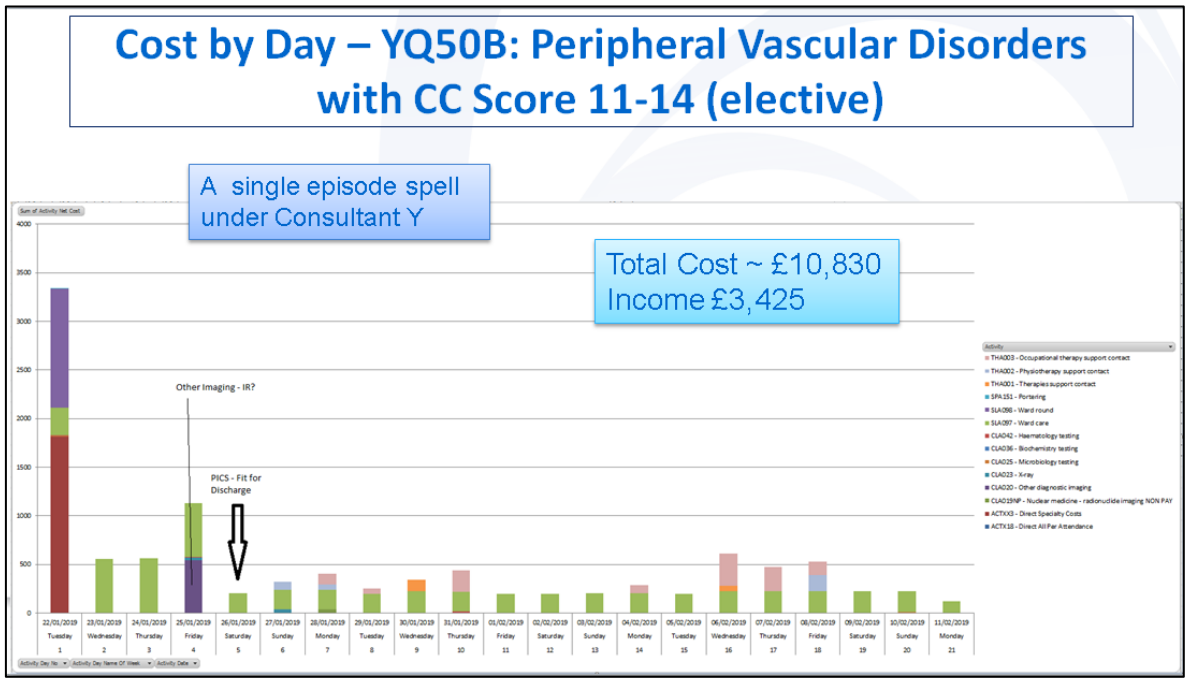
There is no specific ICD (International Classification of Disease) code for patients who have Critical Limb Ischaemia (CLI) and so the EVO pilot group discussed which data fields might help identify this patient cohort. By looking at the National Vascular Registry database, colleagues concluded which HRG codes and complication and co-morbidity scores would be needed to help pinpoint the right patients.

The Trust is part of the NHS Acute Frailty Network, and is one of six sites undertaking a pilot study to examine clinical roles (chiefly nurses and therapists) in treatment pathways for frail patients. CLI patients often fit within this group, characterised by having particular challenges in being able to be discharged back to their homes.

The vascular surgery team 'knew' it had the same issues and opportunities as T&O had identified: length of stay was reduced for CLI patients where clinical roles in the pathway were clear and operating well. A clear pathway with therapy intervention at the correct points and a pre-determined discharge plan would have a positive effect on the length of stay. Often however, especially with the amputation patients there can be delays in therapy/rehabilitation contact and an appropriate discharge plan may take time to arrange as a relevant care package needs to be in place.

The costing team presented a patient pathway chart for the third EVO session which showed, for a patient with peripheral vascular disorder (a surrogate for CLI) and a very high cc score, the apparent lack of daily therapy interventions early in the episode of care, and prolonged length of stay (figure 7).

Figure 7: Analysis of interventions for a patient with peripheral vascular disorders



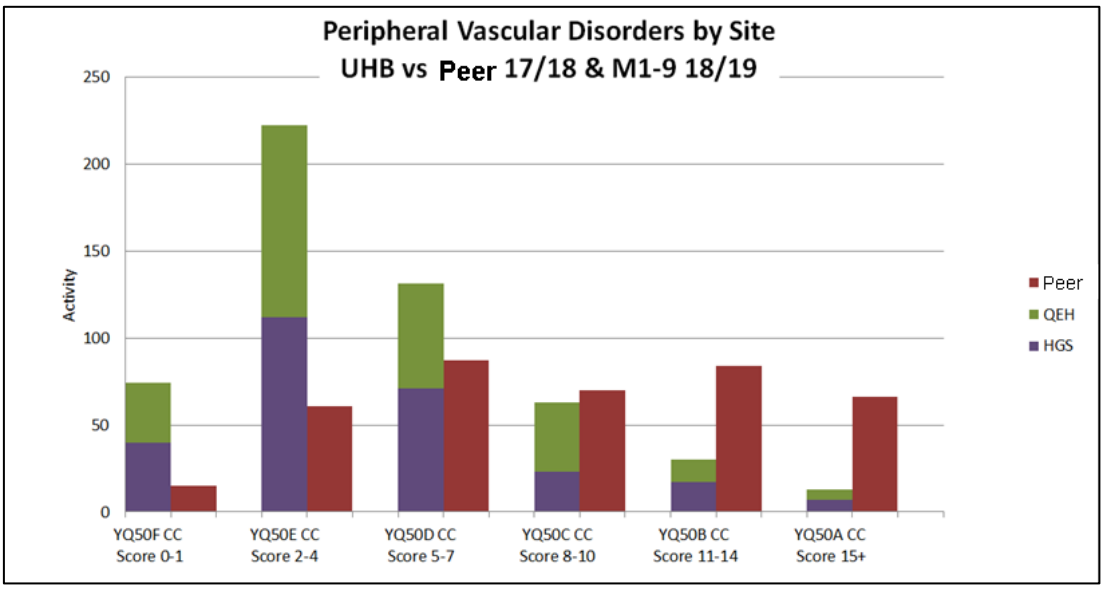
The process highlighted to clinicians, operational managers, costing leads, income and contract managers and finance colleagues the importance of having an easy to interpret, benchmarked analysis of the CLI patient pathway so that differences in practice and differences in patient experience could be examined. This would enable the impact of things like extended nursing roles for frail patients to be explored.

Coding of complications and co-morbidities

The group was able to make more tangible progress in its assessment of cc scores. Costing leads produced clear information for review, benchmarked against another trust. Figure 8 shows how Trust sites compare with the identified peer hospital in cc scores for patients with peripheral vascular disorders. This indicated that both QEH and HGS have a significantly higher proportion of patients with lower cc scores.

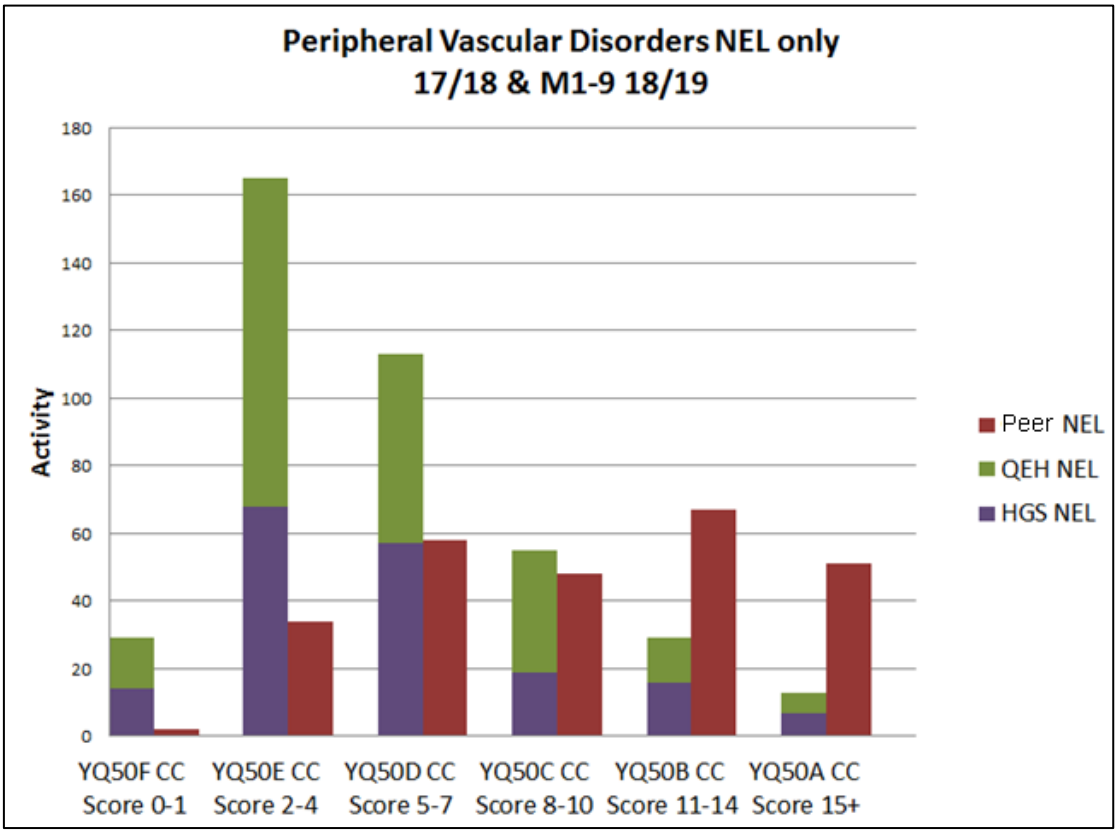
Overall this variation in coding didn't feel right. Compared with the clinical knowledge of the population the Trust serves and supported by peer benchmarking, a wider investigation into the coding of activity was required.

Figure 8: Comparison of complication and co-morbidity scores for peripheral vascular disorder



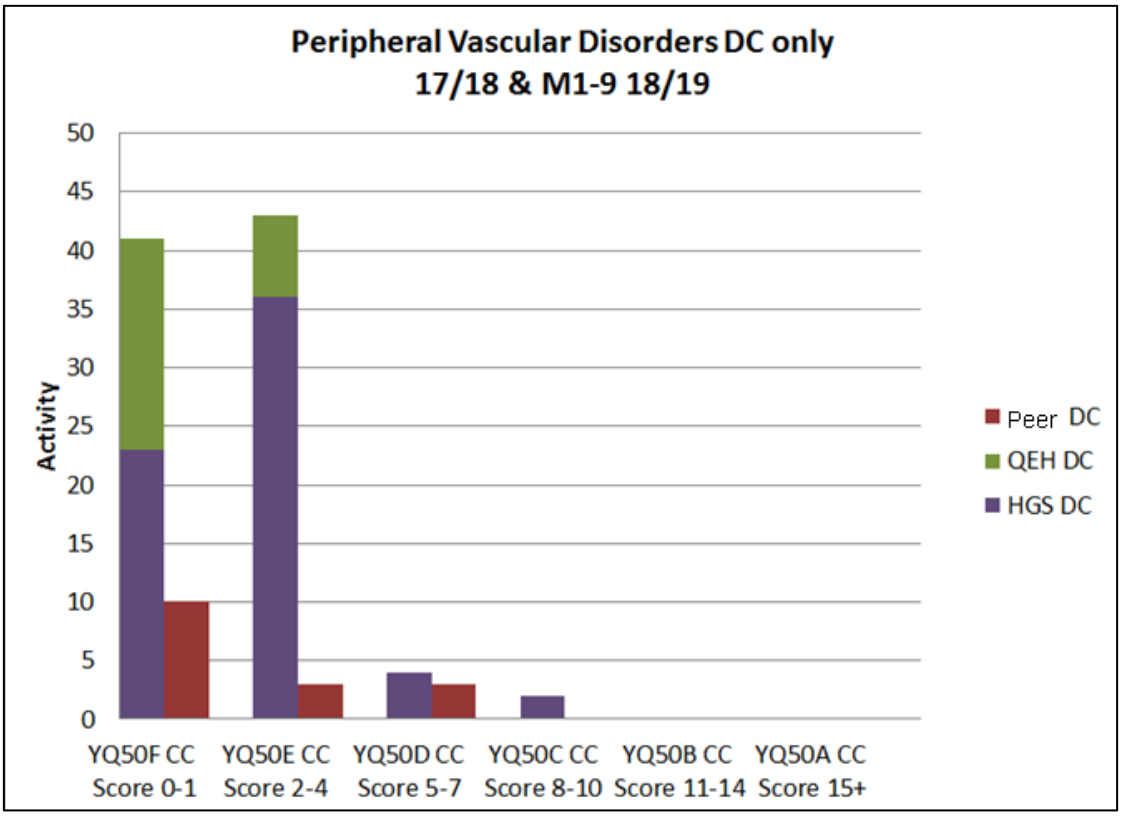
Further analysis indicated that non-elective activity had the greatest variance from peer data (figure 9).

Figure 9: Comparison of complication and co-morbidity scores for peripheral vascular disorder – non-elective only



By contrast, looking at day case activity only, analysis indicated that the Trust's coding data is richer than the peer hospital's data: a higher proportion of patients is coded as having more than one complication or co-morbidity (figure 10).

Figure 10: Comparison of complication and co-morbidity scores for peripheral vascular disorder – day case only



Patients categorised as 'procedure not carried out'

The relatively high number of vascular surgery patients categorised as 'procedure not carried out' was concerning to the EVO pilot group. Categorising the patient's outcome in this way provided nothing that colleagues could work with to understand what had happened and improve efficiency and effectiveness of care.

By the second EVO pilot session, the costing leads had identified that where procedures are recorded as not carried out, this is chiefly for one of two reasons:

- at HGS, the activity related to patients admitted to the Surgical Assessment Unit and discharged from there.
- at QEH, these were on the whole patients whose varicose veins procedures are cancelled on the day.

The group agreed that the recording of this patient activity needed to be examined especially on the HGS site to ensure activity is appropriately coded. This would also mean in the future that any improvement opportunities could be identified and appropriate action taken.

Improving data for Vascular Surgery

The vascular surgery EVO pilot group had to be creative in how it went about identifying 'good enough' data to explore. In doing so it pinpointed several areas where the quality of data – in particular accuracy, relevance and completeness – could improve.

Actions agreed included:

- developing a way of 'flagging' CLI patients so that they can be separately identified
- better defining complexity and co-morbidity scores and consistently applying these across all sites
- adding more meaningful details for patients coded as 'procedure not done'.

Conclusions and next steps

A number of important opportunities for improvement were unpacked in the EVO pilot. In building on the multi-disciplinary team approach, the group has established what it wants to achieve next:

- enabling 'at a glance' graphical analysis of a range of data so that it becomes an accessible resource for routine use by the whole department
- developing and implementing evidence-based, best practice clinical pathways for CLI patients and others with frailty, which define roles for all clinical team members
- using data to underpin business cases to support service development
- sharing data with community hospital colleagues to support better integration of service delivery – potentially using an EVO approach to look at the pathway across acute and community care
- identifying where more granular data will help in clinical decision-making and best practice
- benchmarking more widely with other trusts.

Overall conclusion from pilot sites

By developing EVO, HFMA's Healthcare Costing for Value Institute and FFF set out to promote collaborative working between clinical and finance teams, and to unlock the power of PLICS by encouraging the use of the rich data set by clinical services.

EVO strengthened working relationships between clinical services, informatics and finance at all pilot sites. One participant described the EVO framework as a 'launch pad for trusts struggling with clinical and financial engagement.'

For many clinicians – doctors, nurses, allied health professionals – this was the first time they had seen PLICS data for their own patients..

Pilot sites demonstrated that the EVO approach can lead to important action, for example improving productivity and patient care, or building the case for new models of care and prevention programmes.

EVO bridges the gap between a theoretical model of value-based healthcare and one that is embedded in the day-to-day delivery of better care for patients.

Embedding EVO

It is important that EVO is sustainable and can be used in its own right beyond the initial facilitated implementation. This is about equipping trusts with the tools to instigate positive change and incentivising them to use this framework at scale.

Pilot sites have been provided with online resources to support the roll-out of EVO. Specialties and services will have varying needs and will be looking for a variety of outcomes from EVO. The EVO Pilot Tools are designed to give teams flexibility to use them in whatever manner they feel is most appropriate.

EVO accreditation

By successfully completing EVO in three specialties/ services, the four pilot sites are the first trusts to be accredited as 'EVO Bronze' sites. If they roll out EVO further, they will have the opportunity to be accredited as EVO Silver sites.

Future plans

The EVO website EVO website will be regularly updated with new case studies and information about future plans.

If you are interested in receiving information on the upcoming beta version of EVO, please email richard.sawyer@hfma.org.uk to register your interest.

Appendix A: EVO pilot sites

Organisation	Sector	Specialty/service
Gloucestershire Health and Care NHS Foundation Trust	Community	• Diabetes • Allied Health Professionals • Wound Care
Great Western Hospitals NHS Foundation Trust	Acute	• Cardiology • Gynaecology • Trauma and Orthopaedics
North Staffordshire Combined Healthcare NHS Trust	Mental Health	• Adult Community Mental Health Teams • Crisis Care • Memory Service
University Hospitals Birmingham NHS Foundation Trust	Acute	• Dermatology • Trauma and Orthopaedics • Vascular Surgery

Appendix B: Merger of two trusts

In April 2018 University Hospitals Birmingham NHS Foundation Trust (UHB) merged with its neighbour Heart of England NHS Foundation Trust. This brought together the Queen Elizabeth Hospital Birmingham, Birmingham Heartlands Hospital, Good Hope Hospital, Solihull Hospital and Community Services and Birmingham Chest Clinic.

UHB is now one of the largest teaching hospital trusts in England, treating over 2.2 million patients each year, with more than 2,700 beds across its sites and an estimated annual turnover of £1.6bn.

The Trust is a regional centre for cancer, trauma, renal dialysis, burns and plastics, HIV and AIDS, as well as respiratory conditions like cystic fibrosis. It also has expertise in premature baby care, bone marrow transplants and thoracic surgery and has the largest solid organ transplantation programme in Europe.

The Trust also provides secondary care services to its local population across Birmingham and Solihull and neighbouring authorities, serving a local population of over 1.5 million.

Appendix C: EVO Expert Panel

We are grateful to the expert panel who contributed to the development of EVO. The panel covered three sectors: acute, mental health and community services.

Name	Job title	Organisation
Dr Sanjay Agrawal	Consultant in Respiratory and Critical Care Medicine	University Hospitals of Leicester NHS Trust
Stuart Burney	Finance Business Partner and Head of Costing	South Tees Hospitals NHS FT
Dr Jane Carlile	Consultant Psychiatrist and Group Medical Director	Northumberland Tyne and Wear NHS FT
Sheelagh Carr	Head of Costing, Systems and Projects	Greater Manchester Mental Health NHS FT
Chris Chapman	Professor of Management Accounting	Bristol University
Dr Clara Day	Renal Consultant and Associate Medical Director for Finance	University Hospitals Birmingham NHS FT
Sarah Hall	Implementation Lead IAPT Service	Dorset HealthCare University NHS FT
Scott Hodgson	Head of Costing	Nottingham University Hospitals NHS Trust
Clare Jacklin	Costing Manager	Humber NHS FT
Dr Jean MacLeod	Consultant Physician in Medicine and Diabetes	North Tees and Hartlepool NHS FT
Mike McEnaney	Director of Finance	Oxford Health NHS FT
Matt Miles	Finance Business Partner	Lincolnshire Community Health Services NHS Trust
Andrew Monahan	Policy and Research Manager	HFMA
Mike Newton	Deputy Director of Finance	North Staffordshire Combined Healthcare NHS Trust
Duncan Orme	Deputy Director of Finance	Nottingham University Hospitals NHS Trust
Alex Packard	Commercial Finance Manager	Berkshire Healthcare NHS FT
Ros Preen	Director of Finance	Shropshire Community Health NHS Trust
Jenny Richards	Senior Planning and Costing Manager	Gloucestershire Health and Care NHS FT
Hayley Ringrose	Chief Financial Analyst	Stockport NHS FT
Ben Roberts	Senior Finance Business Partner	Leeds Teaching Hospitals NHS Trust
Sheila Stenson	Executive Director of Finance	Kent and Medway NHS and Social Care Partnership Trust
Ella Worsdale	Head of Information	Pennine Care NHS FT

About the Healthcare Costing for Value Institute

HFMA's Institute champions the importance of value-based healthcare for supporting the delivery of high-quality financially sustainable healthcare. Through its member network, it supports the NHS to improve costing and make the most of patient-level cost data to drive improvements in patient care and deliver efficiencies. By bringing together senior finance and clinicians to explore what value means, the Institute helps the NHS to turn the theory of value into practice and make value-based healthcare a reality.

About Future Focused Finance

Future-Focused Finance is a national programme designed to engage everyone in improving NHS Finance to support the delivery of quality services for patients. We want to bring finance staff at all levels of the profession together with the teams we work with in our own organisations and make sure that everyone has access to skills, knowledge, methods and opportunities to influence the decisions affecting our services. We believe by working together in this way we can harness our diverse and talented NHS workforce to produce high quality services and reduce waste in NHS spending.

About the HFMA

The Healthcare Financial Management Association (HFMA) is the professional body for finance staff working in healthcare. For 70 years it has provided independent support and guidance to its members and the wider healthcare community. It is a charitable organisation that promotes the highest professional standards and innovation in financial management and governance across the UK health economy through its local and national networks. The association analyses and responds to national policy and aims to exert influence in shaping the healthcare agenda. It also works with other organisations with shared aims in order to promote financial management and governance approaches that really are 'fit for purpose' and effective.

Published in partnership by the Healthcare Financial Management Association (HFMA) and Future-Focused Finance (FFF)

The creators of EVO are Becky Vine, Catherine Mitchell and Richard Sawyer.

Engagement Value Outcome