

BRINGING PROACTIVE CARE FOR OLDER  
PEOPLE UNDERGOING SURGERY TO  
DARTFORD AND GRAVESHAM NHS TRUST

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<b>Project Title</b>	<b>Vanguard Programme- Vascular Workstream- Elderly Medicine</b>	<b>Request: For decision and approval</b>
<b>Directorate</b>	Vanguard/ Elderly Medicine	<b>Project Oversight:</b> General Manager, Karen Costelloe/Sarah Collins (DGT) <b>Project Lead:</b> June Okochi (Vanguard) <b>POPS Clinical Leads:</b> Dr Catherine Meilak and Dr Anna Whittle (DGT) <b>POPS Clinical lead:</b> Dr Jugdeep Dhesi (Consultant Geriatrician, GSTT)
<b>Date Submitted</b>	21 <sup>st</sup> March 2017 – Vanguard Programme Board	<b>Authors:</b> Dr Catherine Meilak and Dr Anna Whittle (DGT)  Dr Jugdeep Dhesi (Consultant Geriatrician, GSTT)  June Okochi, Vanguard Vascular Workstream Lead
<b>SECTION</b>	<b>DETAIL</b>	
<b>Summary of Proposal</b>	<p>Increasing numbers of older people are undergoing both elective and emergency surgery. This is related to changing demographics, advances in surgical and anaesthetic technique, changing patient expectations and changing healthcare professional attitudes and behaviours. The overall impact is that rates of surgical procedures in older people are now significantly higher than in any other age group.</p> <p>Whilst it is clear that older people have much to gain from surgery in terms of symptom control and life expectancy, they remain at higher risk of adverse postoperative outcome (morbidity, mortality, process) in comparison to younger people. This adverse risk profile is not a consequence of age per se but due to factors that are associated with ageing; poor physiological status, multimorbidity and geriatric syndromes such as cognitive impairment and frailty. These risk factors are particularly prevalent in the vascular surgical population; with multimorbidity in 80% of patients, cognitive impairment occurring in 70% of patients, frailty levels being at a par with those on geriatric medicine wards.</p> <p>There is emerging evidence that clinician and patient reported as well as process outcomes can be improved in frail older surgical patients. Work led by POPS at GSTT has demonstrated that geriatrician led and delivered preoperative assessment, optimisation and shared decision making with follow through of the patient on the surgical ward with POPS providing a single point of care for medical, rehabilitation and discharge planning, can reduce postoperative complications and shorten length of stay. This was initially demonstrated in orthopaedic elective patients and more recently in elective vascular surgical patients (reduced medical, surgical complications and a 40% reduction in LOS).</p> <p>The Vascular Vanguard Programme provided an opportunity to study the translation of the POPS service for vascular patients to Dartford and Gravesham Trust (DGT). Scoping work conducted in the past 4 months has confirmed the need for a POPS service at DGT. It has become clear during this work that there is a need for POPS not only for patients presenting with vascular issues but also for other surgical patient groups</p>	

This business case illustrates the need for, the cost of and the available options regards establishing POPS services for vascular and general surgical older patients at DGT. Once developed and established the aim would be to expand the service further to include other surgical specialties such as Orthopaedics and Urology.

**National context**

Increasing numbers of older people are undergoing both elective and emergency surgery with clear benefits in terms of symptomatic relief and improved survival. However, whilst older people have much to gain from surgery, they remain at high risk of adverse postoperative outcome. This is true across clinician-reported, patient-reported and process related measures. For example, the literature provides evidence that older people are more likely than younger patients to experience post-operative medical complications, functional deterioration and consequently a longer length of stay. Such data has led to the growing recognition of the need for involvement of geriatricians in the care of complex older people undergoing surgery. The NCEPOD report, An Age Old Problem, reviewed the care received by older surgical patients, noted deficiencies in care and recommended routine daily input from geriatricians. Similarly reports from the Royal Colleges of Anaesthetists and Surgeons and the Associations (British Geriatrics Society and Association of Anaesthetist of Great Britain and Ireland) support the development of collaborative care.

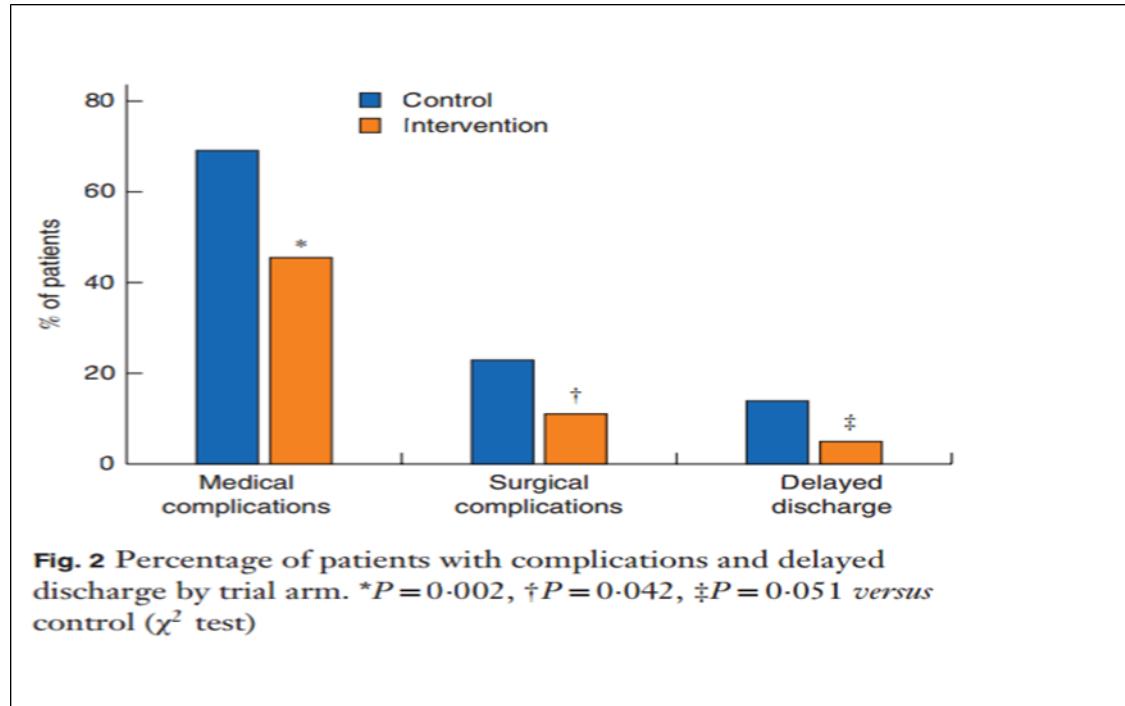
The POPS (Proactive care for Older People undergoing Surgery) team is an established multi-disciplinary team involved in peri-operative care at Guy’s and St Thomas’ NHS Foundation Trust (GSTT) and their intervention has been shown to reduce length of stay and post-operative complications. To be effective this approach needs a patient centered and a holistic approach using the skills of a multidisciplinary team to support every aspect of patient care. The POPS team is an example of true multidisciplinary working; comprising of surgeons, anaesthetists, critical care staff, geriatricians, occupational therapists, physiotherapists and social workers working together to optimise; assessment, intervention, post-operative care and discharge.

There is growing research evidence to support the implementation of teams such as POPS. In a pre and post study in older elective orthopedic patients at GSTT, those who underwent POPS had reduced medical and multidisciplinary complications and a 4.5 day reduction in length of stay despite higher comorbidities(Age and Ageing 2007).

The following table compares the cohorts’ post-operative outcomes.

	Routine preoperative care	POPS Cohort	POPS Service Improvement
Pneumonia (p=0.008)	20%	4%	16%
Delirium (p=0.036)	19%	6%	13%
Pressure sore (p=0.028)	19%	4%	15%
Delayed mobilization (p=0.012)	28%	9%	19%
Length of stay (median)	14.5 days	10 days	4.5 day reduction

In a more recent study vascular elective patients were randomised to either POPS or routine preoperative care. The intervention (POPS) group had fewer medical and surgical complications, fewer delays related to discharge and 40% reduction in length of stay (5.5 days versus 3.3 days,  $p < 0.05$ ) (BJS 2017).



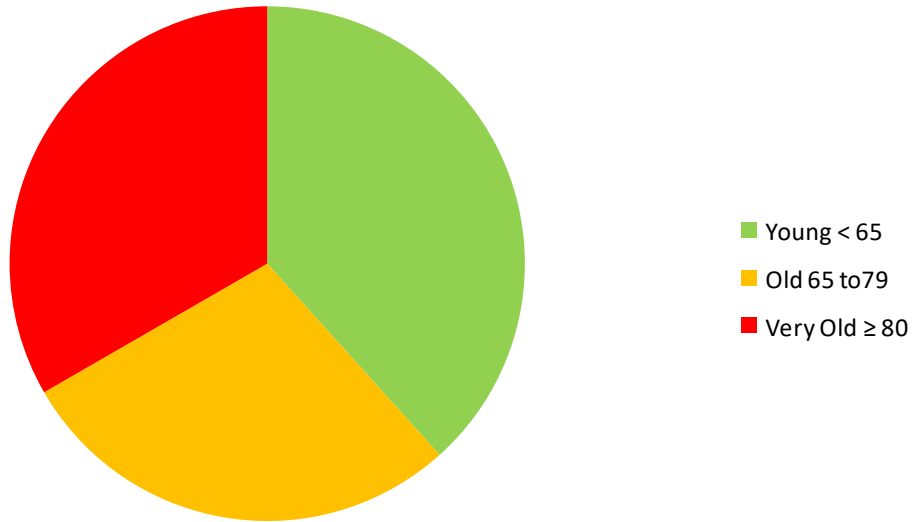
## The local context

### 1. Local Population

#### Today's population

A single day review of surgical wards at DGT on 29/11/2016 found that there were 120 inpatients. Of these 14% were elective and the remaining 86% were emergency admissions. 74 were  $\geq 65$  years old (61%) and 40 were  $\geq 80$  years old (33%)

### Surgical Inpatients 29/11/2016



#### Tomorrow's population

DGT is anticipating a significant increase in population over the next twenty years due to rapid housing developments such as the Ebbsfleet Garden City. Population projections from 2015-2025 show an increase in the population of 38% for those aged 60-79 and 45% in those over 80 years. This indicates the demand is likely to increase in the next 10 years.

#### 2. How is DGT Performing?

The National Emergency Laparotomy Audit (NELA) recommends a target of 80% of patients over the age of 70 be seen by a geriatrician. DGT were 'red' outliers in the NELA data with only 2% in 2015 and 8% in 2016 reviewed by a Geriatrician. Furthermore, the median length of stay is longer than that at GSTT in emergency general surgery (7 days versus 5 days) despite this being a younger population.

With regards the vascular surgical patients, patients are referred directly to GSTT for elective care and undergo all preoperative assessment, optimisation and follow through at GSTT incurring time and travel costs and inconvenience for the patients and their carers. In terms of DGT patients who are identified as having a vascular pathology, they wait for vascular review on a ward, without access to specialist vascular services or the associated POPS services, causing delays in treatment and missed opportunities for optimisation.

#### Objectives of proposal

##### The objectives of a local DGT POPS service is to:

- Deliver local preoperative assessment and optimisation to elective vascular and general surgery (including upper and lower GI cancer) patients in the outpatient setting
- Ensure 'fitness' for surgery and thus reduce late cancellations for surgery.
- Proactively identify in-patients requiring POPS input on the surgical wards (and on medical wards) and provide timely and evidence based in-patient assessment,

	<p>optimisation and coordinated management.</p> <ul style="list-style-type: none"> <li>• Collaborate with the vascular CNS to facilitate an effective surgical pathway to and from GSTT for both elective and emergency vascular patients.</li> <li>• Ensure early safe repatriation of patients from GSTT to DGT for post-operative care and rehabilitation, such that their care can be experienced as locally as possible.</li> <li>• Provide standardised, safe, effective care for older people undergoing elective and emergency general surgery at DGT.</li> <li>• Reduce incidence and severity of post-operative medical complications in surgical patients at DGT.</li> <li>• Identify and treat post-operative medical complications early and thus reduce the impact on functional status and cognitive status.</li> <li>• Utilise community services more effectively (establish relationships with intermediate care to facilitate early discharge).</li> <li>• Reduce length of stay for surgical inpatients at DGT.</li> <li>• Reduce readmissions.</li> </ul>
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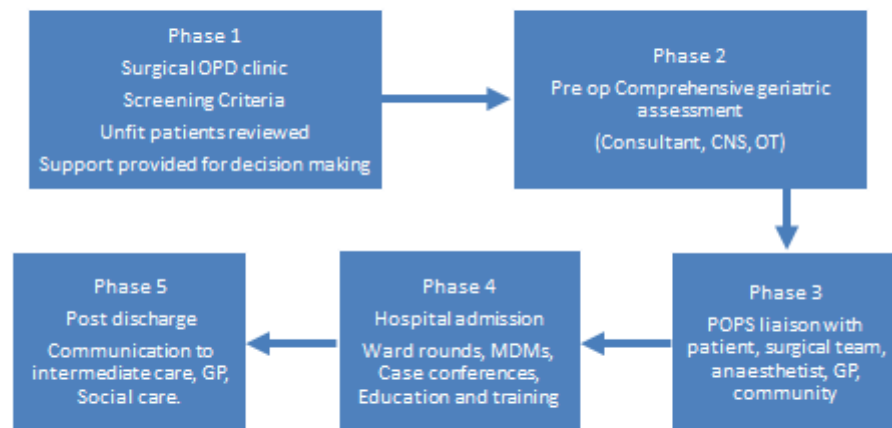
<b>Description and scope of model</b>	<p>The POPS service will provide a multidisciplinary Comprehensive Geriatric Assessment model of care for older people undergoing surgery at DGT.</p> <p>There are three specific options which are discussed in this paper.</p>					
	<table border="1"> <tr> <td>Option 1</td> <td>Do Nothing</td> </tr> <tr> <td>Option 2</td> <td>POPS service delivered and funded by DGT for vascular and general surgery patients</td> </tr> <tr> <td>Option 3</td> <td>POPS @ DGT for vascular and general surgery patients (GSTT POPS service commissioned by DGT)</td> </tr> </table> <p><b>Future model planning</b> It is apparent that there is likely to be a need to expand the POPs service further to cover other surgical specialties (orthopaedics and urology). This will require further scoping and modelling work which is out with the current proposal.</p>	Option 1	Do Nothing	Option 2	POPS service delivered and funded by DGT for vascular and general surgery patients	Option 3
Option 1	Do Nothing					
Option 2	POPS service delivered and funded by DGT for vascular and general surgery patients					
Option 3	POPS @ DGT for vascular and general surgery patients (GSTT POPS service commissioned by DGT)					

	<p><b>The POPS service model for emergency and elective general surgery and vascular surgery is outlined below;</b></p> <ul style="list-style-type: none"> <li>• Preoperative screening to identify (in and out) patients who would benefit from the POPS service.</li> <li>• Alongside screening POPS will accept referrals from GPs, Consultants, pre admission clinics, nurse specialists, therapists and social workers.</li> <li>• Identified patients will undergo a multidisciplinary comprehensive geriatric assessment based on validated tools.</li> <li>• Any identified comorbidities or syndromes will be pre-operatively optimised using evidence based guidance.</li> <li>• Education on exercise, nutrition and pain management will be provided to the patients.</li> <li>• Patients will be counselled preoperatively about their risk of post-operative complications and what they can expect of their hospital stay. (For example patients</li> </ul>
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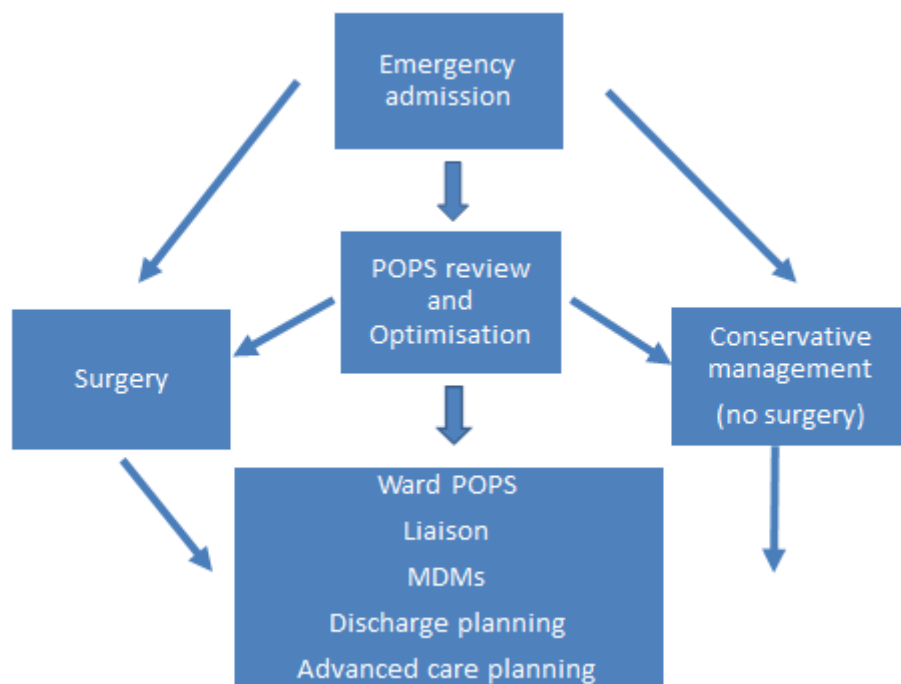
at risk of delirium are counselled with their relatives about this risk, what to expect if it occurs and what they can do to minimise severity/duration)

- Therapists will be involved and anticipate needs on discharge from hospital, such that equipment can be provided proactively. (To prevent unnecessary discharge delays).
- Post operatively surgical patients will be reviewed on the wards by the geriatrician and CNS, providing direct intervention and staff education in early detection and treatment of medical complications; delirium, functional decline, bowel/bladder dysfunction, poor nutrition.
- Regular MDMs will be held to discuss patient discharge planning with ward staff and therapists, to facilitate rapid and coordinated discharges.
- The team will liaise with the patient's local services to set up re-ablement care, rehabilitation, respite for dependents and equipment installation.
- Following discharge, the POPS team will provide outpatient clinic review in those with ongoing medical problems. Thereafter, patients will be signposted to the relevant services, eg falls programmes, continence services, other outpatient services and the voluntary sector for ongoing support.
- A joined-up approach with the POPS team liaising and collaborating with all team members involved in patient journey will be established.

## POPS Model: Elective Surgery



## POPS Model : Emergency Surgery



### Benefits of proposed model

#### Pathway Benefits

The proposed model has benefits across the patient pathway as outlined below

#### **Primary care referral to surgery**

- POPs will provide educational resources to primary care to ensure appropriate and timely referral to secondary care.
- POPs will work with primary care to develop effective referral processes that will include all relevant information (and reduce unnecessary information). This will allow effective transfer of information and reduce duplication.

#### **Surgical Outpatients Clinic**

- In-patients who are considered 'unfit' or where there is uncertainty about risk/benefit ratio of surgery, a joint review will be undertaken by the POPS and surgical team. This will provide an holistic assessment and facilitate shared decision making with the patient. Such collaborative decision-making has a greater chance of resulting in the right decision for the right patient – for example surgery may not be undertaken in some cases, whereas in others such an assessment may improve access to surgery (which may have previously declined).

#### **Pre-operative Comprehensive Geriatric Assessment**

- The POPS clinic will aim to provide a holistic medical review ensuring assessment, investigation and optimisation across a range of multimorbidity and geriatric syndromes in a 'one-stop-clinic'.
- This will reduce the need for multiple specialist appointments preoperatively as all



issues will be reviewed by the POPS team.

- Thorough review will reduce the chance of late cancellations through recognition and treatment of medical problems, with less chance of the patient presenting 'unfit' and better information provision to patients (for example when to stop particular drugs)

### **Preoperative POPS liaison**

- POPS team will coordinate patient care and liaise with all of the relevant teams to ensure an individualised care pathway. This will provide a single point of access for patients and their carers but also for health care professionals improving communication and reducing unnecessary investigations and duplication.
- POPS team will take responsibility for the care pathway and reduce chance of patients being 'lost in the system' (attending multiple appointments)

### **Hospital admission**

The POPS team will be single point of access for medical, rehabilitation and discharge processes for in-patients in general surgery and vascular surgery. This will allow the POPS team to focus on the following areas;

- Reduce incidence of post-operative complications
- Standardise management of post-operative complications (development and implementation of hospital guidelines for common complications)
- Reduce demand on general medical teams to provide medical care of surgical patients
- Improve discharge planning through establishing links with intermediate care/community
- Reduce length of stay
- Improve throughput will reduce bed occupancy and facilitate management of the waiting lists for elective surgery.
- Improve coding of medical conditions and complications
- Improve communication with patients and their relatives by providing a single point of access (supplemented with written information)

### **Post discharge**

The POPS team will aim to

- Improve communication with GPs and community teams by establishing working groups to review communication processes
- Signpost patients to relevant postoperative services (clinics, voluntary sector, long term conditions management)
- Provide education to patients and carers on self-management
- Provide signposted education to primary care services

### **Patient Benefits**

Patient satisfaction questionnaires conducted at GSTT, with high response rates (60-70%), describe very positive patient experience.

Examples of questions/comments

- Did the service help you to prepare for surgery? **93% yes**

- Would you have the POPS service again if you needed further surgery? **97% yes**

As part of the Vanguard project, feedback has been collected from pre-operative vascular surgical patients from DGT on their experience at POPS clinics. Feedback has been very positive; patients felt the consultation left them feeling more positive and reassured about their upcoming operation. All feedback is being recorded and will be reviewed every 6 months to determine how best to improve the service alongside the establishment of a patient public liaison group.

### **Examples of comments**

*"I am very happy with today's test. The staff were very friendly and professional"*

*"I found the doctor very informative and very efficient; I felt very reassured about forthcoming treatment"*.

*"Very pleased with the thoroughness and clarity of advice/information by both clinic and nursing staff"*

*"I'm sure you will have success with the POPS; such a good idea for the elderly so I hope it carries on the good work, makes us feel we are wanted and not too much a burden for people"*

### **Trust benefits**

#### **1. Education**

With increasing numbers of older patients being admitted across the trust, the entire workforce consistently requires upskilling in the management of complex older people. POPS will provide an important component of this education and training by:

- Establishing a cross disciplinary education and training programme for surgical and anaesthetic staff.
- Providing structured educational opportunities for junior doctors.
- Delivering a structured education programmes for local GPs Writing and implementing trust wide peri-operative guidelines eg perioperative management of diabetes, hypertension, cardiac devices.
- Developing quality improvement programmes which in turn will attract undergraduate medical students and postgraduate trainees.

As perioperative medicine develops as a specialist field (supported by new curricula at the RCoA and RCP), DGT will be in a strong position to attract trainees to a centre delivering quality perioperative medicine.

#### **2. Workforce satisfaction**

Improved quality of care and provision of structured education and training will lead to improved workforce satisfaction and may impact positively on staff retention.

A recent survey at GSTT demonstrated the strength of feeling across the disciplines

	<p>regarding the necessity for POPS.</p> <p><b>Ward sister</b> : <i>‘strong medical management of surgical patients with in-depth reviews and consistent plans that are clear’</i> <i>‘improves patient centered approach to patient care’</i></p> <p><b>Physiotherapy</b> <i>‘incredibly helpful in facilitating the patient along the pathway, most importantly in a timely way’</i></p> <p><b>3. Workforce development</b> Delivering a recognised POPS service at DGT will increase opportunities to attract:</p> <p>a) Out of Programme experience/training SpRs from geriatric medicine and anaesthetics (who wish to become perioperative medicine specialists) b) Nurses who wish to develop as Advanced Nurse Practitioners (with prescribing and examination skills).</p> <p>Staff questionnaires were delivered at DGT and the results clearly demonstrates the need for collaborative working and education and training (see appendix 1).</p> <p><b>4. National Impact</b> This POPS project is a national pilot for the translation of a teaching hospital initiative to a District General Hospital. It will provide the blueprint and business case for other centres to develop their own POPS services.</p> <p>Establishing POPS service at DGT will enhance the reputation of DGT as a centre delivering innovative and quality care and providing education and training. Furthermore it will provide opportunities for DGT to be involved in research (both single centre and multicentre), potentially bringing associated income.</p>
<p><b>Options Considered</b></p>	<p>The Vascular POPS service is mid-development at DGT. Currently the vascular vanguard programme pilot is funded but investment is scheduled to end in <b>M6</b> 2017.</p> <p><i>The options to be considered are:</i></p> <p><b>Option 1: Do nothing</b></p> <p><b>Option 2: POPS service delivered and funded by DGT</b></p> <p><b>Option 3: POPS @ DGT (GSTT POPS service commissioned by DGT)</b></p> <p><b><u>Option 1 – Do nothing</u></b> By doing nothing, the commissioning gap of not providing the POPS service at DGT will</p>

result in the following:

**Advantages**

- No investment required. No financial commitment to DGT or the CCG

**Disadvantages**

- No change in pathway and none of the benefits as listed above and below.

**Option 2 – POPS service delivered and funded by DGT**

Commission a DGT POPS service to vascular and general surgery.

**The advantages include**

- Service has already been established as part of the Vanguard Programme and therefore the patient pathway and benefits have been identified
- Improved care of older people undergoing surgery, with improved clinician reported, patient reported outcome and improvements in process related outcomes (reduced length of stay, late cancellations).
- Service would be developed and delivered by local hospital
- Workforce employed by DGT and hence flexible across geriatric medicine.

**The disadvantages include**

- Isolation of POPS practitioners whilst developing a new complex service potentially affecting staff recruitment and retention
- Isolation of POPS practitioners in a rapidly developing and evolving specialty
- Development of guidelines, education and training will be completed in isolation increasing the workload (rather than shared access to all resources from GSTT)
- Loss of 'brand' value of POPS@GSTT

**Proposed Service Cost**

14 PAs: GI inpatients 3PAs, GI MDM 1 PA, Outpatient clinic 3 PAs, Vascular inpatients 3 PAs, POPS MDM 1, SPA 3

1 PA POPS Consultant GSTT (Advisory Role)

Total = **£180,000 P. A**

1 WTE Band 7 POPS Nurse = £50,000

0.5 Band 7 Occupational Therapist = £25,000

1 WTE Band 4 Administrator/Medical Secretary = £30,000

Medicines, sundries and logistics = £10,000

**Total Service Cost = £295,000 P.A**

**Option 3 – POPS @ DGT: GSTT service commissioned by DGT**

Commission the service from GSTT using a service level agreement (SLA) model to be rolled out to vascular and general surgery at DGT.

### **Advantages**

#### **1) Brand value**

- A major advantage of this option includes the brand value of POPS (nationally recognised, award winning service, highlighted as exemplary service by Nuffield Trust, Health Foundation, Royal College of Anaesthetists)

#### **2) In keeping with the vanguard proposal**

- One of the 50 national Vanguard projects was awarded to DGT. The aim of this project was 'acute care collaboration,' linking local hospitals to tertiary centres.

Option 3 would ensure the Vanguard objectives were met in the following ways:

#### **a) Improve clinical viability**

- By creating the POPS service as a collaborative project between GSTT and DGT, DGT would benefit from both the GSTT and POPS brand. This improves the potential to recruit and retain highly motivated staff.
- GSTT would also provide the support and training needed to develop and nurture the service.

#### **b) Reducing variation in care**

- Providing the POPS service locally will ensure patients receive the same care at DGT as they do at GSTT.
- True integration of services will ensure there is peer review through regular MDM attendances and review of cases and letters.

#### **c) Improving efficiency**

- The POPS service will reduce the need for multiple preoperative assessments by multiple specialties, instead providing a 'one stop shop' for patients undergoing surgery.
- Providing the POPS service locally reduces the need for patients to travel long distances for multiple hospital appointments and also reduces the hospital transport costs.
- Collaboration will ensure the streamlined pathways that are being developed will be maintained and continue to evolve as demands of the service and patient population change over time.
- An integrated service would work to share information across sites, to ensure patients can transit smoothly between the two hospitals providing care. This also applies to IT and the sharing of letters and investigation results.

#### **d) Avoiding merging or acquisition**

- The POPS @ DGT approach will enable integration and collaboration between services across sites. It will promote shared learning and an ongoing relationship between the two trusts.

#### **3) Clinical Service**

- Benefits as listed above (see benefits of proposed model)
- Innovative care model in keeping with principles of Vanguard (as above)
- Single seamless pathway of care for patients from DGT across to GSTT and back
- Development of the service using the expertise and experience of an established

POPS department.

- Consistent implementation of standardized clinical guidelines
- Wider impact on geriatric medicine department (transfer of guideline across the department, cross site learning)

#### 4) Education and training

- Medical staff would be integrated with the GSTT POPS team and hence be involved in shared learning in a rapidly progressing, specialised area of medicine.
- Opportunity for all allied health staff (CNS and OT) to be trained and supported by equivalent and established staff at GSTT.
- GSTT has an established programme of teaching within the POPS unit, including Out Of Programme Experience (OOPE) registrars in Care of Elderly Medicine. This could be extended and translated to DGT.
- The POPS team have experience in developing programs for and working with research and QIP fellows. This would be used to apply for a Darzi Fellow to evaluate the introduction of the POPS @ DGT service.

#### 5) Research

- Integration with GSTT would enable research to be conducted at DGT with the POPS team. This would enhance the profile of both organisations and improve the applicability of the research to a nationwide level.

#### Disadvantages

- Risk of lack of ownership at DGT. This could be mitigated by active involvement of the POPS team in care of elderly department at DGT and shared learning eg through medical on call rota, education and training for junior doctors, involvement in departmental strategy and operations.

#### Option 3 is the recommended option

##### **Proposed Service Cost**

14 PAs: GI inpatients 3PAs, GI MDM 1 PA, Outpatient clinic 3 PAs, Vascular inpatients 3 PAs, POPS MDM 1, SPA 3

1 PA POPS Consultant GSTT (to support appraisal, mentoring, development)

**= £180,000 P.A**

1 WTE Band 7 POPS Nurse = £50,000

0.5 Band 7 Occupational Therapist = £25,000

1 WTE Band 4 Administrator/Medical Secretary = £30,000

Medicines, sundries and logistics = £10,000

**Total Service Cost = £295,000 P.A**

#### Activity and

- Income expected from commissioning arrangements for DGT

<b>Income SLA Implications</b>	<ul style="list-style-type: none"> <li>• Tariff or bundle arrangement. All patients are expected to at least be provided pathology tests, ECGs, bladder scans and 24 hr tapes as a standard level of care within their care bundle.</li> <li>• Increased activity (OP) under the elderly medicine directorate</li> </ul>
<b>Revenue Implications</b>	Maintenance of purchased kit: bladder scanner, 2 X 24 hour BP monitors, 2 X 24 hour ECG monitors
<b>Capital Implications</b>	<p>The service will require a location within the hospital to carry out clinical functions effectively. An office space and clinical area allocated to the service is recommended.</p> <p>Computers, desks, chairs, office storage and phones are required.</p>
<b>Workforce Implications</b>	<p><b><u>Workforce Benefits and Links</u></b></p> <p><b>1. Education</b></p> <ul style="list-style-type: none"> <li>• Every member of the POPS team would be actively involved in inter-disciplinary teaching to improve the overall standard of medical care received by older patients.</li> <li>• Perioperative management of older people undergoing surgery is gaining increasing prominence within both geriatric and anaesthetic specialist curriculum. DGT could become a centre for education and training within this field.</li> </ul> <p><b>2. Greater workplace satisfaction</b></p> <ul style="list-style-type: none"> <li>• Improved lines of communication with shared decision making</li> <li>• Confidence that their frail older patients have a holistic care plan tailored to the individual.</li> <li>• Greater workplace satisfaction can in turn lead to improved retention of staff and retention of training positions.</li> </ul>
<b>Other Benefits</b>	<p>Help to achieve National Service Framework aims and milestones Ensure as a trust</p> <ul style="list-style-type: none"> <li>• The Trust is compliant with national audits (NHFD, NELA)</li> <li>• Develop a workforce that invites confidence in our local population</li> </ul>
<b>Estates Implications</b>	Office space with computers, desks, chairs, office storage and phones are required.
<b>Other Support Department /</b>	<p>The preferred option will result in a geriatrics led service for older people undergoing surgery at DGT. This will lead to a more focussed patient centred approach to investigation, medication prescription and involvement of the therapies. This will not increase costings in these departments and is intended to reduce costs.</p> <p>Data collection at GSTT did not demonstrate any discernible change in radiology or</p>

<p><b>Directorate Implications</b></p>	<p>pathology requests (other than pre-operative echocardiograms which decreased due to more judicious ordering by the POPS team preoperatively.)</p> <p>The POPS team will have access their own 24 hour tapes, 24 hour BP monitors and bladder scanners which can be used to facilitate immediate investigations and again saving money.</p>
<p><b>Cost savings/ QIPP Benefit</b></p>	<p>The POPS service and care model is evidenced to see cost savings in several areas listed below. Some of these areas are more complex to measure and track through the systems specifically for a service being piloted at a DGH. The overall financial benefits will be reflected within the next 1-2 years. A thorough evaluation of the financial benefits of the service require the expertise of a health economist, as the benefits are accrued across primary and secondary care, across directorates at secondary care level and in social care .</p> <p>Costs savings not quantified include:</p> <ul style="list-style-type: none"> <li>• Reduced number of specialist appointments to optimise patients preoperatively</li> <li>• Reduced investigation costs through targeted and focussed investigations, reducing unnecessary tests</li> <li>• Reduced pharmacy costs through individualised rationalisation of patients medication</li> <li>• Reduced transportation costs through patients being seen locally and having fewer appointments</li> <li>• Reduced GP appointments to manage complex frailer older patients.</li> <li>• Reduced cancellations of surgery due to over-occupancy. (Through reduced length of stay)</li> <li>• Multidisciplinary models of care resulting in higher tariffs for out patient clinics .</li> </ul> <p>However, there are 4 main areas where the POPS service has identified potential areas of saving for the trust. These are</p> <ol style="list-style-type: none"> <li>1) Length of Stay <ul style="list-style-type: none"> <li>- Vascular diabetic feet</li> <li>- General Surgery (elective and emergency)</li> </ul> </li> <li>2) Re- admissions <ul style="list-style-type: none"> <li>- General Surgery (elective and emergency)</li> </ul> </li> <li>3) Cancellations <ul style="list-style-type: none"> <li>- General Surgery (elective)</li> </ul> </li> <li>4) Improved coding <ul style="list-style-type: none"> <li>- General Surgery (elective and emergency)</li> </ul> </li> </ol> <p><b><u>1) Length of stay(LOS)</u></b></p> <p>i) Vascular Emergency. Based on the local data for foot amputations of patients with diabetes we would expect a 40% reduction in length of stay</p>



## **ii) General Surgery**

Emergency. There are approximately 440 patients admitted annually >65 years of age. Current median LOS is 7 days compared with 5 days at GSTT. The POPS service would expect to reduce length of stay by 1 day. This would equate to 440 bed days saved.

Elective. There are approximately 240 patients admitted annually > 65 years of age. The POPS service would expect to reduce length of stay by 1 day. This would equate to 240 bed days saved.

## **2) Cancellations**

### **i) Vascular**

Cancellations of elective vascular patients at GSTT would not be expected to be affected as these cohort of patients are already reviewed and optimised preoperatively by GSTT POPS.

### **ii) General Surgery**

Elective. There are approximately 60 patients > 65 years of age/year cancelled at DGT due to being unfit on day of surgery. POPS would expect to reduce this cancellation rate by 20%, avoiding 12 unnecessary cancellations.

## **3. Readmissions**

### **i) Vascular**

Readmissions of elective and emergency vascular patients at GSTT would not be expected to be affected as these patients are already reviewed and optimised peri-operatively by GSTT POPS

### **ii) General Surgery**

Elective. There are approximately 20 patients > 65 years of age readmitted within 3 months at DGT. POPS would aim to reduce this by 20%, preventing approximately 4 readmissions annually.

Emergency. There are approximately 72 patients > 65 years of age readmitted within 3 months at DGT. POPS would aim to reduce this by 20%, preventing approximately 14 readmissions annually.

## **Projected Financial Savings**

<b>Activity Description</b>	<b>Assumptions</b>	<b>2017/18 Forecast savings</b>	<b>2018/19 Forecast savings</b>	<b>2019/20 Forecast savings</b>
<b>Length of stay (vascular diabetic feet)</b>	40% reduction	34,314	35,000	35,686
<b>Length of stay general surgery elective</b>	14% reduction = 1 day (440 patients pa)	112,000	116,480	120,960

<b>Length of stay general surgery emergency</b>	14% reduction = 1 day (240 patients pa)	67,200	68,888	72,576
<b>Cancellations General Surgery Elective and daycase</b>	12 cancellations avoided	11,568	11,800	12,030
<b>Re-admissions General surgery</b>	18 readmissions avoided	41,724	42,558	43,392
<b>Total</b>		266,806	274,726	284,644

*Total cost of potential savings resulting from commissioning the POPS service 2017/18 is projected at 266,806 across vascular and general surgery.*

#### **4) Improvements in depth of coding and recurrent income**

Salford General POPS in reach team who review all emergency general surgical patients >74 years did a pre- and post-intervention study in 2014 and 2015. The number of documented comorbidities and complications increased significantly, despite a reduction in length of stay. This was likely related to improved depth of coding and increased remuneration for the trust.

	Length of stay (Average)	Documented Comorbidity (Average)	Documented Complications (Average)
Pre POPS (2015)	12	3	0.88
Post POPS (2016)	10	5.1	2.65

Similarly, the POPS team at GSTT have also demonstrated improved coding, and as a result improved income for the trust. The team ensures accurate recording of all comorbidities and surgical procedure by working with juniors. Furthermore, the POPS consultants personally ensure correct data is provided to coders to maximise HRG information.

Increases in income as result of POPS consultant amendments at GSTT

	Oct-Dec 2007	Jan-March 2008
Trauma orthopaedics	£14,563	£51,398
Urology	£44,732	£32,894
GI	£32,000	£25,000

DGT can expect to see an increase of income associated with effective coding, further work is being undertaken to quantify this.

Activity forecast	POPS Activity Forecast			
	POPS Clinic Activity	Patients >65yrs Expected 2017/2018	2018/19 (4% growth)	2019/2020 (4% growth)
	Elective general surgery (Outpatients / Inpatients)	220 patients	228	236
	Emergency general surgery	440 patients	457	471
	Elective Vascular (Outpatients)	220 patients	228	236
	Emergency vascular (Inpatients)	104 patients	108	112
Key Performance Indicators (KPI's)	<i>Please rank, in order of priority, up to 6 objectives you expect to achieve through this investment and detail the KPI's to justify the investment.</i>			
	Objectives	Measurable Target (KPI) set at	Date to be achieved by	
	1. % of elective patients pre-optimised for vascular and general surgery at DGT	90%	April 2018	
	2. Reduction in cancellations of general surgery patients.	20%	April 2018	
	3. Patient satisfaction levels	95%	April 2018	
	4. Reduction in re-admission rates for patients undergoing general surgery after 90 days	20%	April 2018	
	6. Reduction in length of stay of general surgery elective and emergency patients	1 day reduction.	April 2018	
Key Service Milestones	Develop service under New Care Models Vanguard Programme at DGT	Oct 2016		
	Develop Business case to support service as BAU	March 2017		
	Present business case to Vanguard Programme Board and DGT Trust Board	March 2017		
	Engage and present Business Case to DGS and Bexley CCGs aligning to STPs (vascular core to WK STP plans)	April 2017		
	Recruit staff substantively subject to approval of business case	June 2017		
	Implement and launch service at DGT based on recommended option	August 2017		

	Evaluate service after a year of re-commissioning to inform commissioning intentions	August 2018
	Perform scoping work in other surgical specialties to develop a business case for POPS expansion (Urology, orthopaedics)	August 2018

DO NOT COPY

**Approvals**

**Service Lead**

Signed: \_\_\_\_\_ Print Name: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

Mobile Number: \_\_\_\_\_ Direct Line: \_\_\_\_\_

**Business Support Manager**

Signed: \_\_\_\_\_ Print Name: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

**Directorate GM/CD**

Signed: \_\_\_\_\_ Print Name: \_\_\_\_\_ Date: \_\_/\_\_/\_\_

**Director of Estates & Facilities**

Signed: \_\_\_\_\_ Print Name: \_\_\_\_\_ Date: \_\_/\_\_/\_\_

**Directorate HR Business Partner**

Signed: \_\_\_\_\_ Print Name: \_\_\_\_\_ Date: \_\_/\_\_/\_\_

All above signatures must be completed as this may delay your business case.

Additional Supporting Signatures (If impacting one another area e.g. ICT, Radiology, Pathology, Theatres):

Signed: \_\_\_\_\_ Print Name: \_\_\_\_\_ Job Title: \_\_\_\_\_ Date: \_\_/\_\_/\_\_

Signed: \_\_\_\_\_ Print Name: \_\_\_\_\_ Job Title: \_\_\_\_\_ Date: \_\_/\_\_/\_\_

**APPENDICES**

**Appendix 1 – Questionnaire delivered to surgeons**

	Strongly disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Unanswered
I am confident in the peri-operative		7	9	2		2

management of older surgical patients (ages over 65)						
My training programme delivers adequate postgraduate training in the peri-operative medical management of older surgical patients.		12	5			
I rarely need medical advice when managing older surgical patients.	8	12	5	1	1	
It can be difficult to get geriatric medicine support to help manage older surgical patients.	1	2	8	7	6	
There is no need for closer integration of geriatricians into the care of older surgical patients	6	11	2	1		1
Responsibility for the care of older surgical patients should be shared with geriatricians			2	10	13	1

DGT surgical questionnaire, conducted in General Surgical and Orthopaedic Departments Dec 2016. Responders were at various levels of seniority: 11 Consultants, 5 Registrars, 2 Staff grades, 7 SHOs, 1 FY1, 1 unknown.

#### Comments

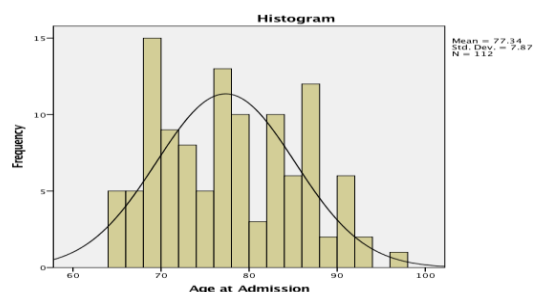
- I would strongly welcome regular Geriatric input on surgical wards
- Perhaps have similar to NOF pathway for laparotomy and have at least daily geri/medical review post-op day 1-5 then perhaps weekly at least. All in one booklet. With aim for daily ward round on surgical patients
- Thank you for doing this! You're doing an excellent job very much missed and necessary.

### Appendix 2– General surgery data

- June-August 2016 DVH General surgery data for patients aged  $\geq 65$ .
- Note – elective day case patients were not included in the data set.

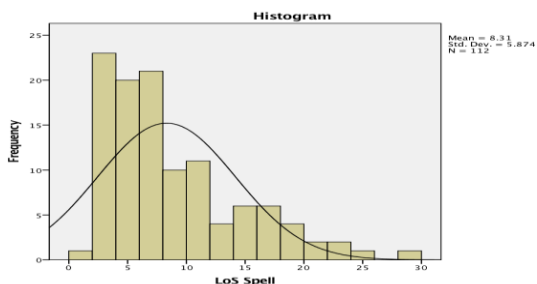
#### Emergency General Surgery - Age

Age at Admission		
N	Valid	112
	Missing	0
	Mean	77.34
	Median	77.00
	Mode	69
	Minimum	65
	Maximum	96



## Emergency General Surgery - LOS

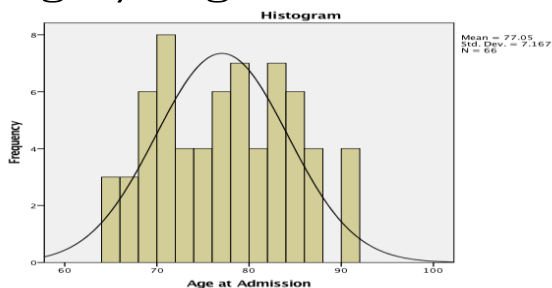
LoS Spell		
N	Valid	112
	Missing	0
Mean		8.31
Median		7.00
Mode		4
Minimum		1
Maximum		29



## Elective General Surgery - Age

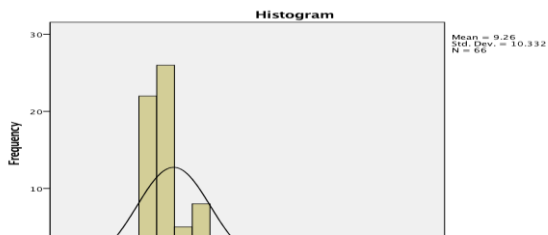
Age at Admission		
N	Valid	66
	Missing	0
Mean		77.05
Median		77.00
Mode		79 <sup>a</sup>
Minimum		65
Maximum		91

a. Multiple modes exist. The smallest value is shown.



## Elective General Surgery - LOS

LoS Spell		
N	Valid	66
	Missing	0
Mean		9.26
Median		7.00
Mode		2
Minimum		2
Maximum		68



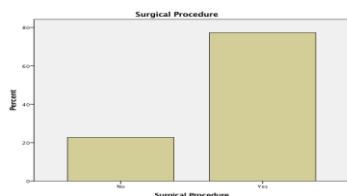
## Emergency General Surgery – Surgical Procedure?

Surgical Procedure				
Valid		Frequency	Percent	Cumulative Percent
No		83	74.1	74.1
Yes		29	25.9	100.0
Total		112	100.0	

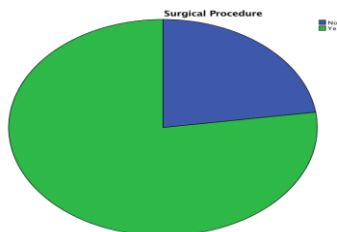


## Elective General Surgery – Surgical Procedure?

Surgical Procedure				
Valid		Frequency	Percent	Cumulative Percent
No		15	22.7	22.7
Yes		51	77.3	100.0
Total		66	100.0	

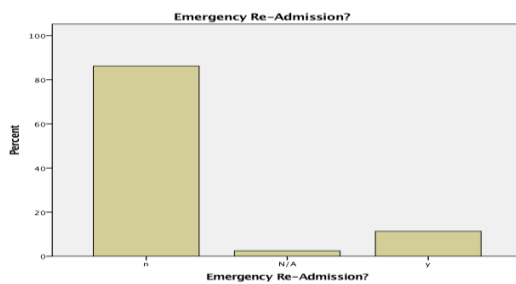


Of the 15 patients admitted electively under general surgery that did not have surgery, they were all admitted for non-surgical procedures and hence there were no cancelled elective procedures.



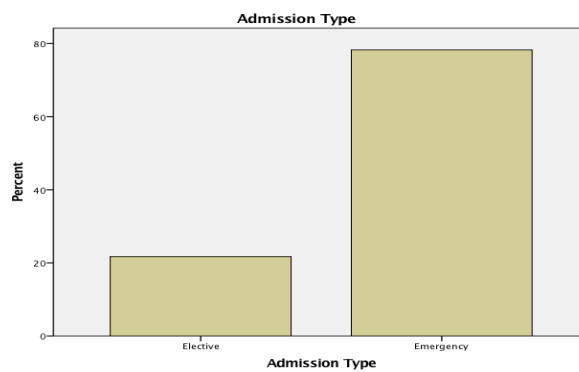
## Emergency Re-Admissions Within 3 Months

Emergency Re-Admission?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	n	175	86.2	86.2	86.2
	N/A	5	2.5	2.5	88.7
	Y	23	11.3	11.3	100.0
Total		203	100.0	100.0	



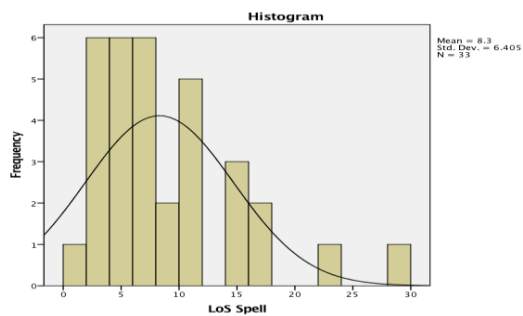
## Re-Admissions in Elective Versus Emergency Initial Presentation

Admission Type					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elective	5	21.7	21.7	21.7
	Emergency	18	78.3	78.3	100.0
Total		23	100.0	100.0	



## Emergency Admissions LOS in Those Operated on

Statistics		
LoS Spell		
N	Valid	33
	Missing	0
Mean		8.30
Median		7.00
Mode		4
Std. Deviation		6.405
Minimum		1
Maximum		29

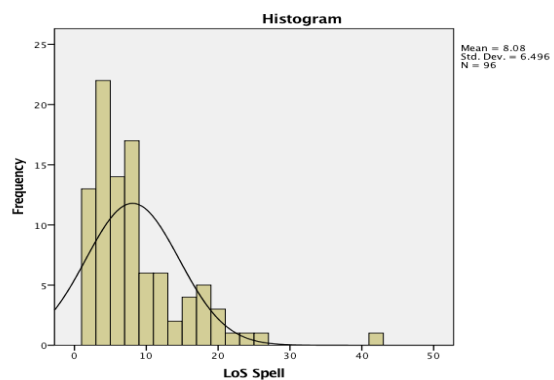




## Emergency Admissions LOS in Those Not Operated on

LoS Spell		
N	Valid	96
	Missing	0
Mean		8.08
Median		6.00
Mode		2 <sup>a</sup>
Std. Deviation		6.496
Minimum		2
Maximum		41

a. Multiple modes exist. The smallest value is shown

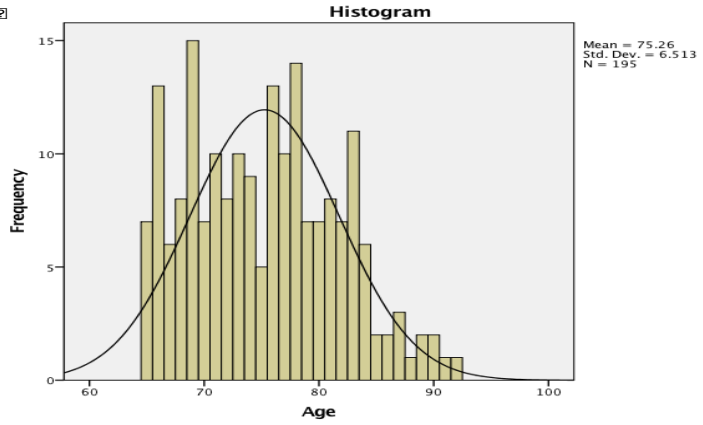


### Appendix 3 – Orthopaedic data

- June-August 2016 DVH General surgery data for patients aged  $\geq 65$ .
- Note – elective day case patients were not included in the data set.

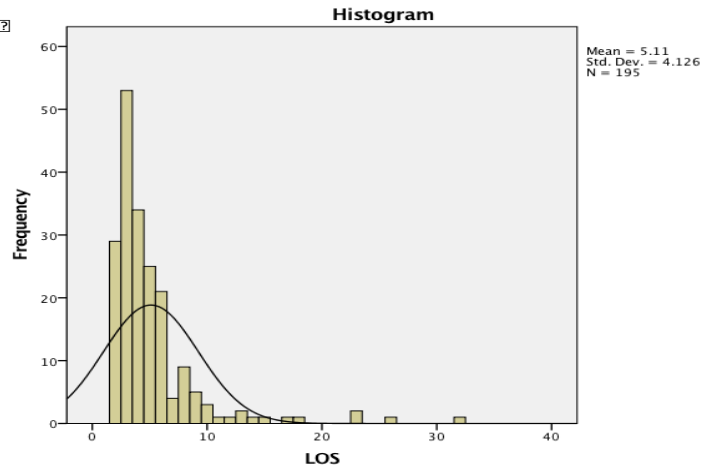
Elective Orthopedic Age range in those ≥65

Statistics		
Age		
N	Valid	195
	Missing	0
Mean		75.26
Median		75.00
Mode		69
Minimum		65
Maximum		92



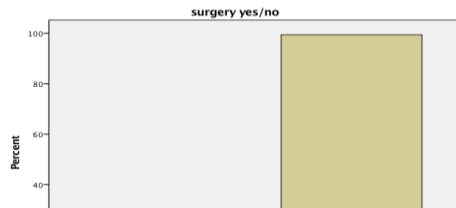
Elective Orthopedic LOS in patients ≥65  
No deaths

Statistics		
LOS		
N	Valid	195
	Missing	0
Mean		5.11
Median		4.00
Mode		3
Minimum		2
Maximum		32



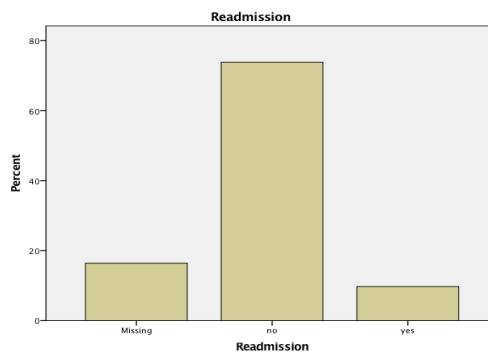
Elective Orthopedic those operated on during admission

surgery yes/no					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	.5	.5	.5
	yes	194	99.5	99.5	100.0
Total		195	100.0	100.0	



Elective Orthopedic Readmission within 3 months

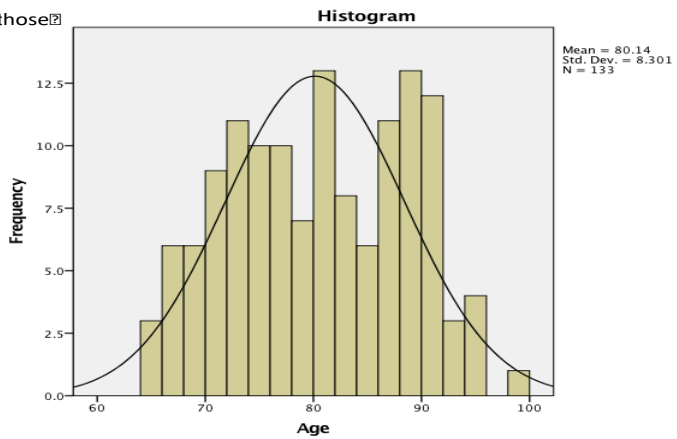
Readmission					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Missing	32	16.4	16.4	16.4
	no	144	73.8	73.8	90.3
	yes	19	9.7	9.7	100.0
Total		195	100.0	100.0	



Emergency Orthopedic age range in those ≥65

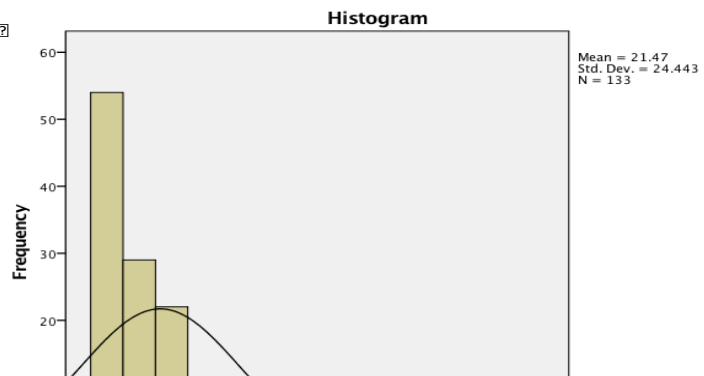
Age		
N	Valid	133
	Missing	0
	Mean	80.14
	Median	80.00
	Mode	89 <sup>a</sup>
	Minimum	65
	Maximum	98

a. Multiple modes exist. The smallest value is shown



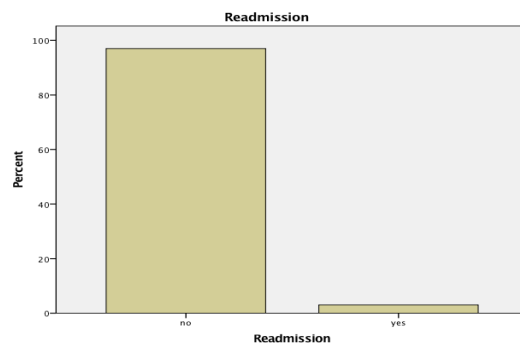
Emergency Orthopedic LOS in patients ≥65  
There were 8 deaths

LOS		
N	Valid	133
	Missing	0
	Mean	21.47
	Median	14.00
	Mode	5
	Minimum	0
	Maximum	129



Elective Orthopedic Readmission in three months

Readmission				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid no	129	97.0	97.0	97.0
yes	4	3.0	3.0	100.0
Total	133	100.0	100.0	



Emergency orthopedic - those operated on during admission

		Surgery?			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	missing	3	2.3	2.3	2.3
	no	27	20.3	20.3	22.6
	yes	103	77.4	77.4	100.0
Total		133	100.0	100.0	

