Proactive Care of Older People Undergoing Surgery

Developing the Service

Danielle.Harari@gstt.nhs.uk
Need – Policy perspective

NSF for Older People:
• Rooting out age discrimination
• Intermediate Care
• Person-centred care / Single Assessment Process
• Specialist care for older people in hospital
• Health Promotion
Need - Scientific perspective


• Older people have more post-op complications, with longer length of stay Leung 2001, Polancysk 2001, O’Toole 2002

• Preoperative comorbidity (cardiac, pulmonary, functional) more predictive than age itself of post-operative problems Liu 2000, El-Haddawi 2002

• Preoperative comorbidity more predictive than intra-operative events of poor post-operative outcomes in older people Leung 2001

• Pro-active geriatric consultation reduces post-operative delirium in hip fracture patients Marcantonio 2001

Milsen 2001,
Need – Clinical perspective

Pre-operative screening of 111 patients aged 65+ across surgical specialties

- Mean age 77 (34% aged 80+)
- 52% >2 risk factors for adverse post-operative outcomes
  - Functional dependency (42%),
  - Cardiac disease (32%),
  - Respiratory disease (23%),
  - Neurological disease (14%)
Need – Clinical perspective

Post operative complications

Cardiac arrhythmia (14%), CCF (4%)
PE/DVT (6%), Pneumonia (12%)
Delirium (20%)
Dehydration (8%)
Wound sepsis (25%)
Pressure sores (12%)
Nil by mouth >4 days (12%)
Urinary retention (14%), severe constipation (14%)
Need – Clinical perspective

Mean length of stay 18.8 days ± 22.5 (1-119)

Delayed discharge for non-medical reasons (31%) (e.g. waiting for complex social package, intermediate care assessment, OT equipment)

30-day Readmission (10%)

Death (10%)
Need - Process perspective

• Pre-admission assessment (1-2 weeks pre-op) focuses on short-term anaesthetic/surgical risk
• Surgery deferred for medical reasons with no pathway of care (patient return to GP)
• No systematic multidisciplinary assessment of at risk patients in acute or community settings
• No systematic medical postoperative follow-up (ward) or therapy follow-up (community)
Unmet Service Needs

Patient identification
- Pilot: High levels of impaired function and comorbidity
- Patients on waiting list not referred for multidisciplinary assessment
- Deferred operations for ‘medically unfit’ patients

Pre-operative
- Few referrals to, so little input from community PT/OT
- No standardised programme of cardiovascular training, muscle strengthening etc.
- Little patient/carer education regarding preoperative health promotion
- No standardised medical review

Hospitalisation
- Potentially preventable post-op complications
- Discharge delays (e.g. OT equipment, supported discharge, care packages)

Post-operative
- Delayed therapy referrals
- No funds for short-term equipment
- Unresolved post-op problems (mobility, incontinence, anxiety)

Proactive care of Older People undergoing Surgery (‘POPS’)
So….

Having identified need, and built scientific model
Obtained stakeholder support
Designed the intervention
Applied for project funding from GSTT Charity
Development - identifying the stakeholders

- Surgeons
- Anaesthetists
- Surgical/medical/district nursing staff
- Therapists (Trust/community)
- GPs
- Managers (Trust/PCT)
- Social Services (Cross borough)
- Patients
1. Do you think that older patients in your practice who are awaiting surgery would benefit from proactive geriatric assessment? If so, would any particular group benefit more?

2. Do you have older patients in your practice who have been assessed for surgery, but who have been evaluated by secondary care providers as being at too high risk for the procedure?

3. Do you have older patients who you have felt might benefit from surgery, but who you have not referred for surgical opinion as you have evaluated them as being at too high risk for the procedure?

4. Do you have any other comments on how this service may best provide care for older primary care patients?
Comprehensive Geriatric Assessment

- **Multidomain** assessment
- Uses specific *validated tools* to objectively assess medical, functional, psychological and social domains
- Assessment leads to *goal-oriented, patient-centred* intervention
- *Interdisciplinary* team to pool expertise, and work toward these common goals
- *Follow through* to achieve common goals, with regular care plan update
Comprehensive Geriatric Assessment - Evidence base

RCT’s (1980’s onwards)

- Variable interventions, variable findings
- Consistent improved survival (6 months-2 years)

Meta-analysis of 28 RCT’s (1993, Stuck et al)

- Reduced mortality
- Reduced long-term care placement
- Reduced acute admissions
- Improved cognition
- Improved physical function (hospital-based CGA)
Comprehensive Geriatric Assessment - Evidence base

Meta-analysis - factors increasing impact were:

• Patient targeting:
  – High risk for decline, but with ‘rehab potential’, neither too ill nor too well

• Clinical ‘hands-on’ care
  – Rather than consultative

• Long-term follow-up
POPS Hypothesis
Proactive, preoperative, multidisciplinary intervention in surgical patients aged 65+ with comorbidities, targeting potentially modifiable risk factors will improve post-operative outcomes in older people undergoing elective surgery

POPS Aims
Reduce post-operative complications
Reduce hospital length of stay & readmissions
Promote mobility and well-being
### POPS Service Model

#### Patients aged 65+
- Elective cases with medical/functional/psychosocial risks
- Semi-urgent cases (e.g. cancer)
- Surgery deferred for medical risk
- Referrals from surgery, medicine, anaesthetics etc
- GP referrals
- Waiting list screening

#### Pre-operative
- Multidisciplinary assessment and targeted treatment
- Patient / carer education
- Cardiovascular training, muscle strengthening (PT)
- Home visit with provision of equipment (OT)
- Planning for post-operative discharge (social worker)

#### Hospitalisation
- Consultant/nurse specialist input on surgical ward
- Therapy and social work liaison
- Discharge planning

#### Post-discharge
- Intermediate care
- Follow-up home visits
- Community ‘hand-overs’
- Ongoing medical input where needed
- Health promotion

*Proactive care of Older People undergoing Surgery (‘POPS’)*
New roles

• Liaison consultant geriatrician - CGA, surgical team education, MDT

• Specialist nurse - clinical assessment (geriatric giants), patient education, ward staff education

• Social worker - cross boundary working, grants, benefits, discharge planning

• OT - Pre-operative equipment provision (with education), Post op review of aid use and patient education

• Physiotherapist - Individual physiotherapy (balance, muscle strengthening, cardiorespiratory training, inhaler technique, community/acute post)
Identifying patients

- Patients aged 65+
- Elective cases with medical/functional/psychosocial risks
- Semi-urgent cases (e.g. cancer)
- Surgery deferred for medical risk
- Referrals from surgery, medicine, anaesthetics etc
- GP referrals
- Waiting list screening
Identifying patients

- Evidence based postal questionnaires (84% first response rate)
- Sherbrooke
  - identifies older individuals at risk of functional decline in the community
- Pra (Probability of recurrent admissions)
  - identifies older patients at low-mod-high risk of hospitalisation and mortality
Identifying patients

• Uncontrolled BP (>160/90)
• Recent MI, angina, heart failure
• Poorly controlled diabetes (BS >10mmol/L)
• Chronic lung disease limiting activities
• Stroke, recurrent falls, poor memory, dementia
• Poor nutritional status (BMI<20, recent weight loss)
• Needs help with any basic activity of daily living
• Likely to need complex discharge package
POPS Service model

• Multidisciplinary team (geriatrician, nurse specialist, physio, OT, social worker)

• *Early* CGA with stabilisation/optimisation of medical problems before surgery

• Letter with treatment plan – emailed to surgeon, cc’ed to GP

• Structured letter – CGA scores, test results, full diagnostic list, ‘fitness for surgery’ paragraph
Post-operative input

On Surgical wards
Ward rounds by Specialist nurse/geriatrician with junior doctors
Liaison with MDT and discharge planning
Case management on surgical ward (avoid transfers to EC wards)

On discharge
Follow up in clinic/community
Post-operative OT and physio home visit
Liaison with community services
Case History

• 75 year old woman with OA - planned TKR in 3 weeks
• Referred by surgical pre-admission nurse for ‘rash on legs’ - risk of deferred surgery

**POPS problem list and action**

• **Cellulitis** (antibiotics)
• **Venous eczema** (treatment plan and teaching)
• **COPD** (spirometry, inhaler with spacer, and teaching)
• **Cognitive impairment** (MMSE, dementia screen, follow-up)
• **Overactive bladder** (bladder scan, tolterodine and bladder retraining)
Case History

POPS problem list (contd)

• GERD with dyspepsia (short course PPI and teaching)
• Mild renal impairment (BP control, post-op medical plan)
• Hypertension (BP control)
• Overweight (dietary advice, reinforcement)
• Mobility impairment (physiotherapy, OT home visit with equipment provision)
• Lives alone, illiterate (social worker assessment)
Case History

**Surgery went ahead without deferment**

- Postoperative medical/nursing visits on ward to emphasise delirium precautions, pain control, medical review
- Social worker follow-up on ward (continuum of care)

**Discharged home on Day 6**

- Postoperative therapy home visit (discharged with 90° knee flexion, but on visit (Day 13) flexion down to 70-80° due to pain and tightness) - physio provided
- POPS medical/nursing clinic follow-up
Proactive care of Older People undergoing Surgery ('POPS')

**Patient Identification**
- Screening response
- Referral rates and sources
- Waiting list time
- Deferred surgery
- Screening tool validation

**Pre-operative**
- Patient function, QOL, co-morbidity, cognition, mood before and after pre-op intervention
- Process measures (description of services provided, qualitative assessment)
- Resource use

**Hospitalisation**
- Post-operative complications
- Length of stay
- Process measures (type of intervention)
- Resource use

**Post-operative**
- Readmission rates, bed-days, death
- Health/social services resource use
- Function, health, QOL, cognition, mood
- Process measures
- Satisfaction audit - users/carers/providers

Evaluation and Measures
Evaluation

- Ongoing clinical database for clinical governance and R&D
- Real-time monitoring of:
  - Deferred surgery
  - Post operative complications
  - Delayed discharges
  - Mortality
  - Readmissions
# POPS - Process outcomes

**Elective orthopaedic patients aged 65+**

<table>
<thead>
<tr>
<th></th>
<th>PRE-POPS</th>
<th>POPS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n</strong></td>
<td>54</td>
<td>44</td>
</tr>
<tr>
<td><strong>Length of stay</strong></td>
<td>15.3±10.9 (2-58)</td>
<td>11.3±5.0 (2-26)</td>
</tr>
<tr>
<td><strong>Delayed discharge</strong></td>
<td>72% (39)</td>
<td>23% (10)</td>
</tr>
<tr>
<td>- medical problems</td>
<td>37% (20)</td>
<td>11% (5)</td>
</tr>
<tr>
<td>- slow rehabn.</td>
<td>13% (7)</td>
<td>7% (3)</td>
</tr>
<tr>
<td>- wait for OT or</td>
<td>22% (12)</td>
<td>5% (2)</td>
</tr>
<tr>
<td>equipment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
POPS - Medical outcomes

Elective orthopaedic patients aged 65+

<table>
<thead>
<tr>
<th>Condition</th>
<th>PRE-POPS</th>
<th>POPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delirium</td>
<td>19% (10)</td>
<td>4% (2)</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>20% (11)</td>
<td>4% (2)</td>
</tr>
<tr>
<td>Cardiac problems</td>
<td>26% (14)</td>
<td>15% (7)</td>
</tr>
<tr>
<td>Thrombosis</td>
<td>11% (6)</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Sepsis</td>
<td>22% (12)</td>
<td>4% (2)</td>
</tr>
</tbody>
</table>
**POPS - Multidisciplinary outcomes**

Elective orthopaedic patients aged 65+

<table>
<thead>
<tr>
<th></th>
<th>PRE-POPS</th>
<th>POPS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 54</td>
<td>n = 44</td>
</tr>
<tr>
<td>Uncontrolled pain</td>
<td>32% (17)</td>
<td>2% (1)</td>
</tr>
<tr>
<td>Nil by mouth &gt;4 days</td>
<td>9% (5)</td>
<td>0</td>
</tr>
<tr>
<td>Urinary retention</td>
<td>17% (9)</td>
<td>7% (3)</td>
</tr>
<tr>
<td>Constipation</td>
<td>33% (18)</td>
<td>16% (7)</td>
</tr>
<tr>
<td>Bedridden for &gt;3 days</td>
<td>30% (16)</td>
<td>9% (4)</td>
</tr>
</tbody>
</table>
Geriatric Liaison Services

- Comprehensive Geriatric Assessment (CGA)
- Quality of care (short and long-term)
- Length of Stay reduction
- Admission avoidance
- NSF for Older People standards
Unmet needs – Older Patients Assessment and Liaison ‘OPAL’

Acute medicine wards and CDU

• Delayed discharges
• Non or late referrals of appropriate patients to Elderly Care
• Late involvement of multidisciplinary workers
• No assessment beyond primary diagnosis
• Lack of post-discharge follow-up
• High readmission rates
• Inappropriate continuing care placements
Service model - OPAL

Multidisciplinary team on medical wards and CDU screen all admissions aged 70 years and over

• Case management of patients on acute wards
• Early transfer to Elderly Care Unit
• Rapid discharges to home, intermediate care, care home
• Follow up through care pathways (e.g. falls)
• Post-acute CGA clinics in OPAU
### Pre-OPAL vs Post-OPAL

<table>
<thead>
<tr>
<th></th>
<th>Pre-OPAL</th>
<th>Post-OPAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>Mean age</td>
<td>80</td>
<td>83</td>
</tr>
<tr>
<td>Mean LOS</td>
<td>13.1±11.7 days</td>
<td>9.0±7.7 (p&lt;0.018)</td>
</tr>
<tr>
<td>Mean delay for transfer to Elderly Care Unit</td>
<td>9.0±8.2 days</td>
<td>2.4±1.8 (p&lt;0.0001)</td>
</tr>
</tbody>
</table>

#### Prevalence of problems addressed/problem identified

<table>
<thead>
<tr>
<th>Problem</th>
<th>Pre-OPAL</th>
<th>Post-OPAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional dependency</td>
<td>12/39</td>
<td>22/25</td>
</tr>
<tr>
<td>Falls</td>
<td>0/27</td>
<td>21/23</td>
</tr>
<tr>
<td>Delirium</td>
<td>1/11</td>
<td>12/12</td>
</tr>
<tr>
<td>Depression</td>
<td>1/21</td>
<td>10/17</td>
</tr>
<tr>
<td>Visual/hearing impairment</td>
<td>2/30</td>
<td>32/33</td>
</tr>
<tr>
<td>Urinary incontinence</td>
<td>2/30</td>
<td>13/16</td>
</tr>
<tr>
<td>Constipation</td>
<td>1/20</td>
<td>22/26</td>
</tr>
</tbody>
</table>
Guiding principles in developing new geriatric liaison services

• Identify unmet needs and mould service to provide these
• Imbed new service into pre-existing health-care systems
• Forge strong links with surgical, nursing, therapy, community, and commissioning leads and give regular updates (e.g. presentations, newsletters)
• Rigorous evaluation with clinical and process measures

Proactive care of Older People undergoing Surgery (‘POPS’)
Guiding principles in developing new geriatric liaison services

• Proactive and case-finding approaches
  ‘Right patient, right treatment, right time’
• Multidisciplinary team management
• Good documentation and rapid information sharing (efficient administration)
• Education with work-force development
• Continuous evaluation - be prepared to modify methods of delivery
• Stay patient-centred!
POPS Funding

• Operational Plan (during development)
• Balance cost of POPS against reduction in LOS and ward staff time
• Disease-related groups - any days beyond average LOS for surgical procedure means extra expenditure
• Reduction in LOS on surgical wards means increased surgical activity and income