Extending the use of PROM scores in the Hip and Knee Replacement Patient Pathway in the NHS

*Enhancing response rates through patient engagement*

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Lead Consultant for Hip & Knee Surgery NOC

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The Knee Service
Nuffield Orthopaedic Centre*
Research Collaboration with Pro-Mapp#
Outcome measures

‘...to measure the success of operations as reported by patients themselves.’

High quality care for all
The Darzi Report
2008
The Oxford Orthopaedic PROMs

- Oxford Knee Score
- Oxford Hip Score
- Oxford Shoulder Score

Designed to assess outcome of joint replacement surgery

Nuffield Orthopaedic Centre & the Department of Public Health
Oxford University
Total Knee Replacement

Provisional Monthly Patient Reported Outcome Measures (PROMs) in England

April 2009 – April 2010: Pre- and post-operative data: Experimental statistics
Important Issues: Regional Variation in Joint Replacement

The NHS Atlas of Variation in Healthcare

Total Knee Replacement:
Significant Regional Variation in Pre-Operation PROM
Funnel Plot – casemix-adjusted average Health Gain
April 2014 to March 2015, finalised data

Procedure
Hip Replacement Primary

Measure
Oxford Hip Score

Organisation level
Provider

Organisation name
OXFORD UNIVERSITY HOSPITALS NHS FOUNDATION TRUST (RTH)

Series "99.8% control limits" Point "750"
(750, 20.58199718)
Response rates

- NHS PROMs response rate (RR) = 50-60%
- ePROM Swedish Registry RR = 50%

Internet-Based Follow-Up Questionnaire for Measuring Patient-Reported Outcome after Total Hip Replacement Surgery—Reliability and Response Rate

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Patient decision to have surgery
Total joint Replacement surgery
Referral for joint surgery assessment
Patient decision to have surgery
Total joint Replacement surgery
6 month outcome of surgery
Long-term Surveillance for failure

Established PROMs Use
Measuring outcome of surgery

Monitor changes in joint symptoms
Referral for joint surgery assessment
Patient decision to have surgery
Total joint Replacement surgery
6 month outcome of surgery
Long-term Surveillance for failure

Not understood by patients
Inaccessible to clinicians (silo data)
Not embedded in clinical pathway (abstract)

No benefit to the individual
Low response rates
Integrate PROMs use into the pathway as part of patient care

Monitor changes in joint symptoms

Referral for joint surgery assessment

Patient decision to have surgery

Total joint Replacement surgery

6 month outcome of surgery

Long-term Surveillance for failure

Established PROMs Use

Measuring outcome of surgery

PROM based thresholds for surgery

PROMs in Patient Decision Support

Postal PROMs at 1, 5 and 10 years

Measure change in PROM
Since 2014...

- Routine collection of OKS in clinic before consultation
- Discussion of OKS score as part of shared decision making in clinic
- Collected on day of surgery
- Yearly follow-up (personalised)

PROM – Part of Routine Care

Paper based
PROMs Data from OKG pathway

Oxford Knee Score

Time point

Pre-op | I year | 2 year
--- | --- | ---
UKA | TKA | UKA | TKA | UKA | TKA
### Participation and Response Rates

#### Oxford Knee Score Usage

<table>
<thead>
<tr>
<th>N=300</th>
<th>Participation rate</th>
<th>Response rate</th>
<th>Response rate</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time point</td>
<td>Pre-op</td>
<td>6 month</td>
<td>12 month</td>
<td>24 months</td>
</tr>
<tr>
<td>OKS (NOC)</td>
<td>100%</td>
<td></td>
<td>91%</td>
<td>92%</td>
</tr>
<tr>
<td>National</td>
<td>75%</td>
<td>53%</td>
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**Clinician and patient engagement in process**
PROMs & the use of digital technology

Patient & Public Involvement

Patients...

- Want to understand the role of PROMs
- Ask how can PROMs help the individual patient
- Support the use of digital support of care
- Support the idea of virtual follow-up/surveillance
Thought about having a knee replacement?

Benefits and risks

Decision Support

Patient information
Accessing resources
Links with wearables

Virtual follow-up ePROMs
Creating a digital platform

- Clinic
- Hospital
- Virtual follow-up

Predicting
Monitoring
Responding

Email
Apps
www.
Wearable
Tablet
Laptop
PC

PROMs
PREMs

Creating value for patients and the NHS

NHS England, National Joint Registry, Quality Health
# SURVEY – email and virtual follow-up

$N=50$

<table>
<thead>
<tr>
<th>Do you have an email account? (personal or family)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>84</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
</tr>
</tbody>
</table>

To those with email address…

<table>
<thead>
<tr>
<th>Would you be happy to take part in email follow-up?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>96</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
</tr>
</tbody>
</table>
Virtual follow-up clinic - pilot

- Implementation of virtual clinic
- Personalised: letter from treating Consultant
- Responsive: reply to individual survey
- Creates value for the individual patient

- N=50
Virtual follow-up clinic and Long Term Surveillance

- Virtual follow-up clinic
- Patients contacted by email
- Asked to complete Knee Service Follow-up survey (OKS)
Virtual follow-up clinic and Long Term Surveillance

- JAVLIN automatically responds depending on survey outcome
- A patient specific follow-up letter is sent
- Patients doing poorly are reviewed in a specific clinic
- Patients doing well are reviewed annually by JAVLIN automatically
# Participation and Response Rates

**Oxford Knee Score Usage**

<table>
<thead>
<tr>
<th>N=50</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time point</td>
<td>12 month</td>
</tr>
<tr>
<td>paper PROM</td>
<td>92%</td>
</tr>
<tr>
<td>ePROM</td>
<td>90%</td>
</tr>
</tbody>
</table>
Conclusions

- Patient engagement increases PROM uptake & response rate (paper and digital)
- ePROM follow-up appears to work (85%)
- Paper support for some (15%) - ? Change with time

Action

Wider roll-out of email based follow-up across hip and knee service at NOC ‘Normal care’
Next steps at the NOC Knee Service

Routine Collection of ePROMS in clinic

Decision Support Package
Integrate PROMs use into the pathway as part of patient care

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ACHE
Outcome measures

‘...to measure the success of operations as reported by patients themselves.’

The Darzi Report 2008

Make the collection of PROMs as useful as possible for the individual patient
The Eventual Goal

Digital pathway support through intelligent use of PROM data

Outpatient appointment  Pre-assessment Appointment  Admitted For Surgery  6 week Follow-up  Surveillance
Thank you