



**ASGBI**

Association of Surgeons of Great Britain and Ireland



2013

# Commissioning guide:

## Groin hernia



**Sponsoring Organisation:** Association of Surgeons of Great Britain and Ireland / British Hernia Society

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## Introduction

Inguinal hernia repairs are amongst the most commonly performed general surgical operations with over 60,000 inguinal hernias repairs carried out in England in 2011/12.<sup>1</sup>

There is more than a 2-fold variation in the rate of inguinal hernia repair across the NHS. Patients and surgeons have the choice between various techniques and materials.

There is no national system of audit or follow-up, and the overall low reported recurrence rate following inguinal hernia repair makes it difficult to determine which procedure is best. However outcomes should not be judged in only terms of hernia recurrence, but also wound complications, length of hospital stay, chronic pain, patient experience, quality of life and cost.<sup>2</sup>

The British Association of Day Surgery has suggested that 80% of inguinal hernia repairs should be carried out as day case procedures. In 2011/12 67.2% of inguinal hernia repairs were carried out as a day case, and rates varied from 32% to 100% across providers.

This document has been written to present currently available best evidence in the management of groin hernia (inguinal, femoral, primary and recurrent) in order provides a resource to assist commissioners, clinicians and managers in delivering a high quality, cost-effective, evidence-based service across England and Wales, that meets the needs of the local population and takes into account patient experience.

[www.asgbi.org.uk](http://www.asgbi.org.uk)

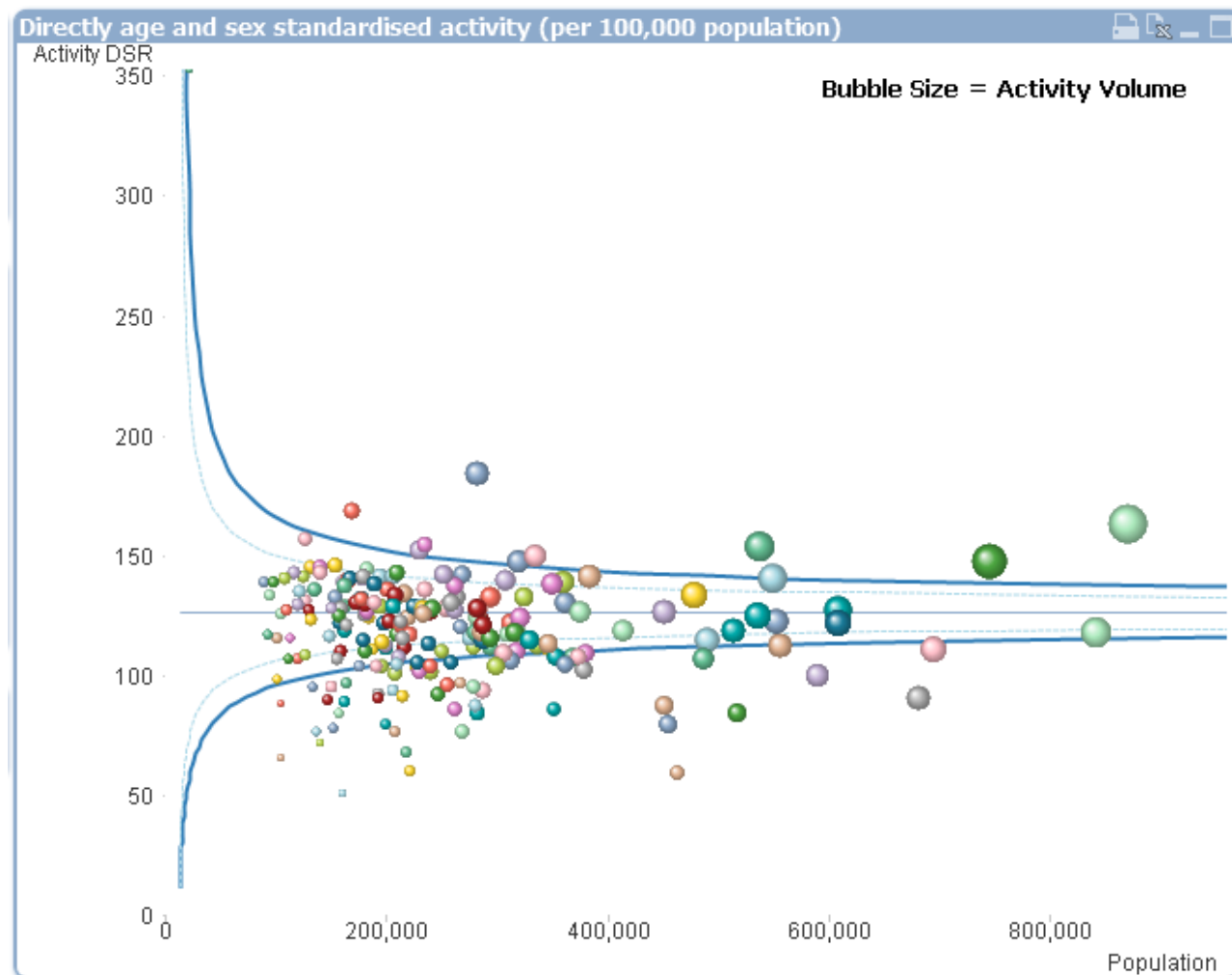
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National Variation Plot by CCG for inguinal hernia repair 2012

#### Figure: CCG Level Variation: Inguinal Hernia Repair, (2012 financial years)

This graph shows the number of inguinal hernia repair procedures per 100,000 population per CCG across England. Each bubble represents a CCG, with the size of the bubble representing the number of procedures undertaken.



# 1 High Value Care Pathway for groin hernia

## 1.1 Primary Care

GPs should refer:

- all patients with an overt or suspected inguinal hernia to a surgical provider except for patients with minimally symptomatic inguinal hernias who have significant comorbidity (ASA grade 3 or 4) **AND** do not want to have surgical repair (after appropriate information provided)<sup>3,4</sup>
- irreducible and partially reducible inguinal hernias, and all hernias in women as '**urgent referrals**'<sup>5,6</sup>
- patients with suspected strangulated or obstructed inguinal hernia as '**emergency referrals**'<sup>5,6</sup>
- all children <18 years with inguinal hernia to a paediatric surgical provider

Imaging:

- Diagnostic imaging should not be arranged at primary care level

Whom to refer to:

- Patients with primary inguinal hernias meeting referral criteria can be referred **generically** to an appropriate secondary care provider
- Patients with bilateral inguinal hernias should be referred to a surgeon who performs **both** open and laparoscopic repair
- Patients with recurrent inguinal hernias meeting referral criteria should be referred to a surgeon who performs **both** open and laparoscopic repair and where possible to the **named surgeon** who performed the first repair (providing the patient does not request otherwise)
- Patients with multiply recurrent (more than one recurrence) inguinal hernias should be referred to a **named surgeon** who has **subspecialty interest** in hernia repair **and** performs **both** open and laparoscopic repair

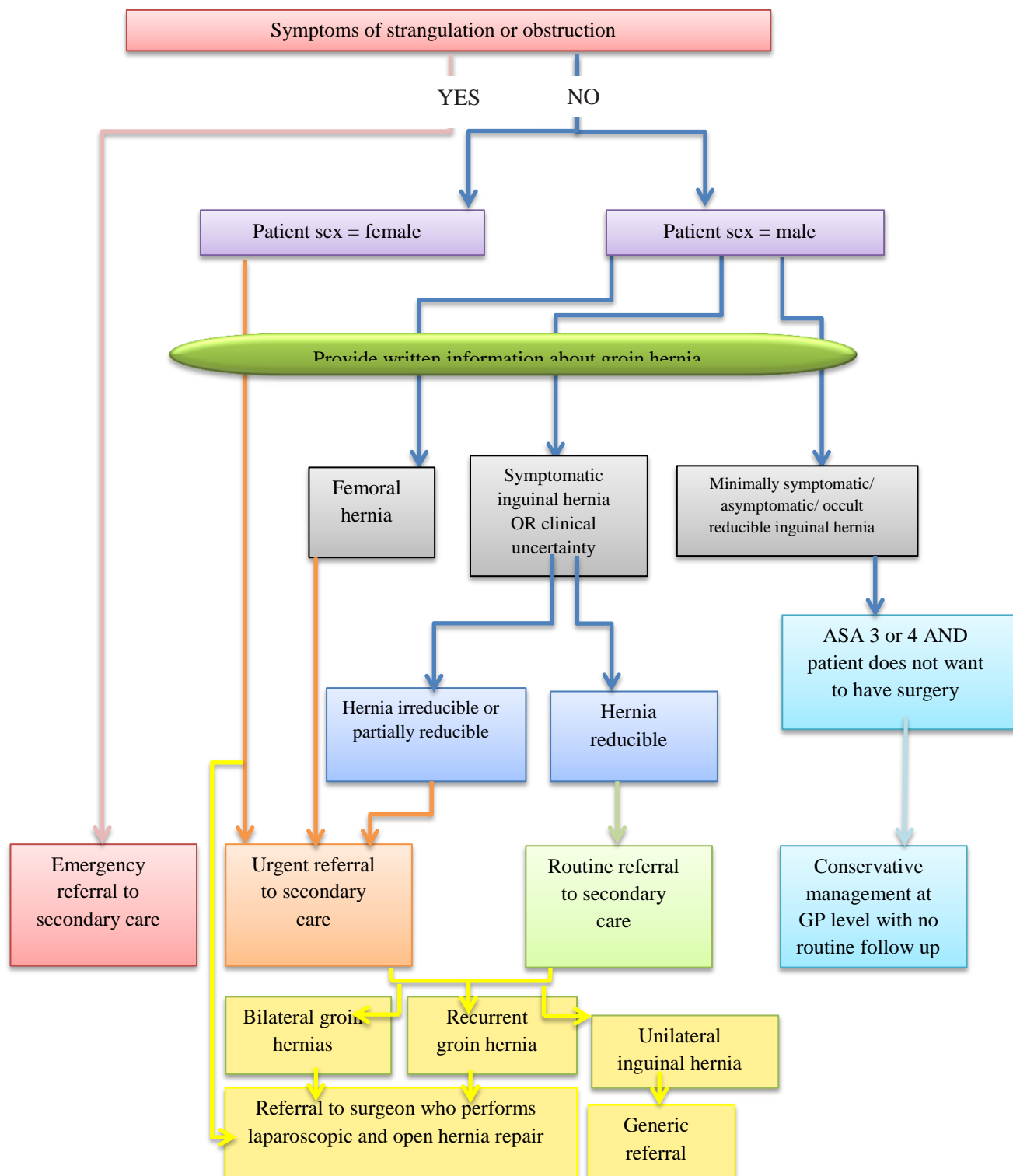
Patients should be directed to appropriate supporting patient information e.g. as available on the British Hernia Society website.



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#### Primary care flow diagram





## 1.2 Secondary Care

### Medical Imaging:

- Medical imaging should be considered in patients in whom there is diagnostic uncertainty or to exclude other pathology.<sup>7</sup>
- Ultrasound scan (USS) is recommended as the first line investigation. Herniography is rarely performed but can be utilised if local expertise is available as an alternative to USS<sup>8</sup>
- Magnetic resonance imaging (MRI) should be considered if USS is negative and groin pain persists<sup>9,10</sup>

### Which patients require an operation?

- Surgical repair should be offered to patients with a symptomatic inguinal hernia<sup>11</sup>
- Patients with asymptomatic hernias can be managed conservatively but there is a likelihood of requiring surgery in the future<sup>3,4,12</sup>
- Patients should be warned of the potential complications of repair including chronic pain. Five years after an inguinal hernia repair only a small proportion of patients, between 2% and 3.5%,<sup>13</sup> report moderate to severe chronic pain. Laparoscopic inguinal hernia repair has been reported to result in less chronic pain than open repair.<sup>13</sup>

### Peri operative management:

- All patients should be pre-assessed in keeping with NHS and NICE guidelines<sup>14,15</sup>
- All patients should be considered for day case surgery. The pre-assessment process and surgical infrastructure are important in ensuring appropriate selection and effective day case services<sup>16-18</sup>
- A small number of individuals require post-operative in-patient stay because of co-morbidity, social reasons or for complex inguinal hernias
- There is no indication for the routine use of antibiotic prophylaxis in elective open or laparoscopic groin hernia repair in low-risk patients<sup>19</sup>

### Open vs. laparoscopic repair:

- In the management of unilateral primary inguinal hernias (general population) there is conflicting information on whether laparoscopic repair reduces the incidence of chronic pain and improves other outcomes. The majority of meta analyses conclude that the incidence and severity of pain (both acute and chronic) are lower after laparoscopic repair compared to open repair but there are limitations in the studies used<sup>20-24</sup>
- The laparoscopic approach may be beneficial in patients at risk of chronic pain. This group includes





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younger patients, patients with other chronic pain problems, and patients who present with severe groin pain with only a small hernia on examination<sup>25</sup>

- Groin hernias in women should preferentially be repaired laparoscopically because of the risk of undiagnosed femoral or contralateral inguinal hernias<sup>26</sup>
- Bilateral inguinal hernias should be repaired laparoscopically from a cost-utility and patient perspective<sup>27-31</sup>
- The open approach under local anaesthesia (LA) is an acceptable and cost effective technique in suitable patients, and may be particularly beneficial in older patients or those with significant co-morbidity<sup>32,33</sup>
- The resource cost at the time of surgery is higher for laparoscopic surgery (Total extraperitoneal (TEP) and Transabdominal pre-peritoneal (TAPP)) compared to open surgery<sup>7,34</sup>
- There is no evidence supporting TEP ahead of TAPP or vice versa<sup>35</sup>
- The technique used in the index hernia repair should be taken into account when choosing the technique for repair of recurrence. If the initial approach was an open anterior repair then the recurrent operation should be a laparoscopic repair and vice versa<sup>7,36</sup>
- All adult inguinal hernias should be repaired using flat mesh (or non-mesh Shouldice repair, if experience is available)<sup>7,24</sup>
- A cost effective 'lightweight' (large pore) mesh should be used<sup>37</sup>

#### Follow Up:

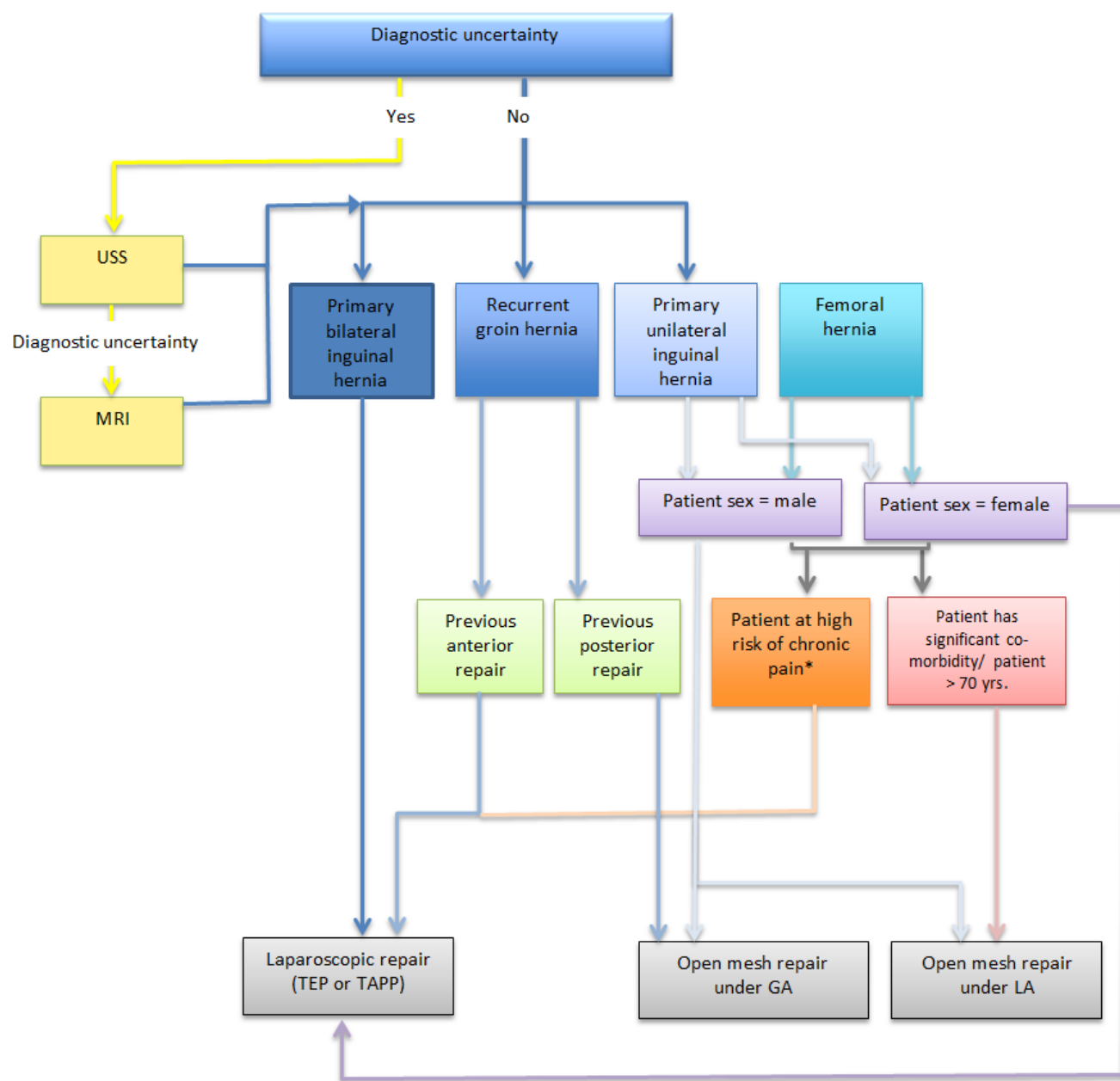
- Routine outpatient follow up is not required after inguinal hernia repair



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#### Secondary Care Flow Diagram



\*younger/ active patients, predominant symptom of pain, history of chronic pain

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## 2 Procedures explorer for groin hernia

Users can access further procedure information based on the data available in the quality dashboard to see how individual providers are performing against the indicators. This will enable CCGs to start a conversation with providers who appear to be 'outliers' from the indicators of quality that have been selected.

The Procedures Explorer Tool is available via the [Royal College of Surgeons](#) website.

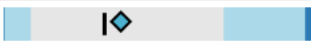



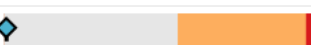

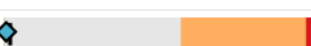

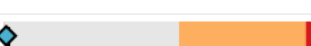

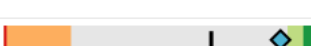

## 3 Quality dashboard for groin hernia

The quality dashboard provides an overview of activity commissioned by CCGs from the relevant pathways, and indicators of the quality of care provided by surgical units.

The quality dashboard is available via the [Royal College of Surgeons](#) website.

Below is an example Quality Dashboard for **Nottingham City CCG**:

### Primary Femoral Hernia Repair - Unilateral (Open)

| Metric   | Period     | Value | Mean  | Chart  | Trend   |
|--|------------|-------|-------|--|---|
| Age/Sex Standardised Activity (per 100,000 population) | RY Q3 1213 | 2.91  | 2.65  |  |  |
| Average Length of Stay (Days)                          | RY Q3 1213 | 0.10  | 0.44  |  |  |
| 7 Day Readmission Rate (%)                             | RY Q3 1213 | 0.00  | 0.43  |  |  |
| 30 Day Readmission Rate (%)                            | RY Q3 1213 | 0.00  | 1.04  |  |  |
| 30 Day Reoperation Rate (%)                            | RY Q3 1213 | 0.00  | 0.69  |  |  |
| Daycase Rate (%)                                       | RY Q3 1213 | 90.00 | 75.32 |  |  |



## 4 Levers for implementation

### 4.1 Audit and peer review measures

Within the current framework of the NHS the collection of good quality, accurate and relevant outcome data on the outcome of hernia repair is difficult. While randomised trials have investigated important clinical questions, they are limited in their ability to detect rare or uncommon events, and provide no information about the overall quality of the hernia service in the general population. A large national surgical registry would be an ideal source of data **BUT** would have to be carefully implemented in order to accurately and completely collect the relevant information. The information recorded would have to become part of the natural data collection process for each patient and would have to be easy to use in the NHS framework. In addition registry analyzing registry data requires sophisticated techniques, such as propensity scores or instrumental variables, to reduce the impact of confounding reports as a result of selection bias.

Only audit and peer review measures have been included which are achievable within the NHS framework and do not significantly influence the healthcare practitioner's workload. Secondary care providers must ensure that adequate outcome data is recorded at a local level in order to demonstrate the efficacy of their service. Particular emphasis should be placed on patient based outcomes and compliance with best evidence as outlined in this guidance document. This list does not include currently collected Hospital Episode Statistics (HES) data.

| Standard                               | Description   |
|--|---|
| <b>Cancellation rates</b>              | Operations cancelled by the hospital within 48 hours of surgery   |
| <b>High compliance with PROMs data</b> | Providers should aim to collect Patient Reported Outcomes Measures (PROMs) for all patients and compliance should be checked against hospital exit data |

### 4.2 Quality Specification/CQUIN

| Measure   | Description        | Data specification (if required) |
|---|--------------------|----------------------------------|
| <b>Day case rates</b>                           | ≥70% day case rate | HES data                         |
| <b>7 day Readmission rates</b>                  | <5%                | HES data                         |
| <b>30 day Readmission rates</b>                 | <5%                | HES data                         |
| <b>Reoperation (same side) within 12 months</b> | <5%                | HES data                         |
| <b>Laparoscopic rates for recurrent</b>         | ≥40%               | HES data                         |



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| <b>groin hernia</b>                                   |      |  |
| <b>Laparoscopic rates for bilateral groin hernia</b>  | ≥40% | HES data   |
| <b>Compliance rates with completion of PROMs data</b> | ≥75% | PROMs compliance rate from data collection organisations |

## 5 Directory

### 5.1 Patient Information for groin hernia

| Name  | Publisher              | Link   |
|---|------------------------|--|
| <b>National patient information leaflet on groin hernia (produced in conjunction with the commissioning guidance)</b> | British Hernia Society | <a href="http://www.britishherniasociety.org">www.britishherniasociety.org</a> |
| <b>Inguinal Hernia</b>  | NHS Choices            | <a href="http://www.nhschoices.nhs.uk">www.nhschoices.nhs.uk</a>               |
| <b>Inguinal Hernia</b>  | EMIS                   | <a href="http://www.patient.co.uk">www.patient.co.uk</a>                       |

### 5.2 Clinician information for groin hernia

| Name   | Publisher                                      | Link  |
|--|--|---|
| <b>Guidelines</b>  | Issues in Professional Practice – Groin Hernia | <a href="http://www.asgbi.org.uk/en/publications/issues_in_professional_practice.cfm">http://www.asgbi.org.uk/en/publications/issues_in_professional_practice.cfm</a>   |
| <b>European Hernia Society guidelines on the treatment of inguinal hernia in adult patients</b>                    | Hernia   | <a href="http://download.springer.com/static/pdf/620/art%253A10.1007%252Fs10029-009-0529-7.pdf?auth66=1363805022_d9137efaab6a9ef2ca38a8438e5d0c3d&amp;ext=.pdf">http://download.springer.com/static/pdf/620/art%253A10.1007%252Fs10029-009-0529-7.pdf?auth66=1363805022_d9137efaab6a9ef2ca38a8438e5d0c3d&amp;ext=.pdf</a> |
| <b>Laparoscopic surgery for inguinal hernia repair: systematic review of effectiveness and economic evaluation</b> | Health Technology Assessment                   | <a href="http://www.hta.ac.uk/pdf/execs/summ914.pdf">http://www.hta.ac.uk/pdf/execs/summ914.pdf</a>   |



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|   |  |   |
|---|--|---|
| <b>Surgical Options for Inguinal Hernia: Comparative Effectiveness Review</b> | Agency for healthcare research and quality | <a href="http://www.effectivehealthcare.ahrq.gov/ehc/products/244/1176/CER70%20Inguinal-Hernia_FinalReport_20120816.pdf">http://www.effectivehealthcare.ahrq.gov/ehc/products/244/1176/CER70 Inguinal-Hernia_FinalReport_20120816.pdf</a> |
|---|--|---|

## 5.3 NHS Evidence Case Studies

| Name                                       | Publisher               | Link  |
|--|-------------------------|---|
| <b>Pre-Operative Assessment Guidelines</b> | Royal Cornwall Hospital | <a href="http://www.rcht.nhs.uk/DocumentsLibrary/RoyalCornwallHospitalsTrust/Clinical/Anaesthetics/PreOperativeAssessmentGuidelines.pdf">http://www.rcht.nhs.uk/DocumentsLibrary/RoyalCornwallHospitalsTrust/Clinical/Anaesthetics/PreOperativeAssessmentGuidelines.pdf</a> |

## 6 Benefits and Risks

The benefits of adopting this guidance are to ensure evidence-based practice for groin hernia surgery and to reduce regional variation in the quality of service provided. This should allow access to effective management, improve access to patient information and improve the overall patient experience. Adoption of the recommendations made in this guidance should reduce unnecessary referrals, ensure that imaging and perioperative investigations and the surgical procedure are appropriate.

The risk of adoption of the guidance is that the current local framework may not have the resources or the infrastructure in place to deliver a complete service including laparoscopic and open groin hernia repair. This would require additional resource to establish a specialist provider in order to develop a patient-centric hernia service. Alternatively patients may have to travel further for treatment to a center that can offer the most appropriate service.

## 7 Further information

### 7.1 Research recommendations

We identified several gaps in available evidence in the course of conducting this guidance. The following areas should be addressed:



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- A RCT of laparoscopic vs. open inguinal hernia repair in patients with pre-operative risk factors for developing chronic pain
- A cohort study (with well-matched groups) comparing laparoscopic and open LA inguinal hernia repair in patients > 70 years
- Laparoscopic vs. open surgery for femoral hernia repair
- Mesh vs. suture open femoral hernia repair
- Use of MRI in occult hernia

## 7.2 Other recommendations

For the next update of this document in April 2016, the following areas should be addressed:

- Hernias <18 year olds
- Measuring outcome data
- Establishment of compulsory national hernia registry

## 7.3 Evidence base

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## 7.4 Guide development group for groin hernia

A commissioning guide development group was established to review and advise on the content of the commissioning guide. This group met twice, with additional interaction taking place via email.

| Name                   | Job Title/Role         | Affiliation            |
|------------------------|------------------------|------------------------|
| Mr David Sanders       | Surgeon, Co-chairman   | British Hernia Society |
| Mr Martin Kurzer       | Surgeon, Co-chairman   | British Hernia Society |
| Mr David Bennett       | Surgeon                |                        |
| Mr Andrew de Beaux     | Surgeon                |                        |
| Dr Jennifer Hislop     | Health Economist       |                        |
| Prof Andrew Kingsnorth | Surgeon                |                        |
| Miss Louise Maitland   | Nurse Specialist       |                        |
| Prof Paddy O'Dwyer     | Surgeon                |                        |
| Mr Aali Sheen          | Surgeon                |                        |
| Mr Brian Stephenson    | Surgeon                |                        |
| Dr John Tisdale        | General Practitioner   |                        |
| Ms Lynne Hall          | Commissioner           |                        |
| Mr Nigel Laurie        | Patient Representative |                        |
| Mr David Watford       | Patient Representative |                        |

## 7.5 Funding statement

The development of this commissioning guidance has been funded by the following sources:



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### Groin hernia

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- DH Right Care funded the costs of the guide development group, literature searches and contributed towards administrative costs.
- The Royal College of Surgeons of England and the British Hernia Society provided staff to support the guideline development.

## 7.6 Conflict of Interest Statement

Individuals involved in the development and formal peer review of commissioning guides are asked to complete a conflict of interest declaration. It is noted that declaring a conflict of interest does not imply that the individual has been influenced by his or her secondary interest. It is intended to make interests (financial or otherwise) more transparent and to allow others to have knowledge of the interest.

The following interests were declared by group members:

| Name             | Position             | Declared Interest   |
|------------------|----------------------|---|
| Mr David Bennett | Surgeon              | Received sponsorship from Bard Davol for attending the European Hernia Society Annual Meeting and the American Hernia Society Annual Conference |
| Dr John Tisdale  | General Practitioner | Retired from Probus Medical Centre in Cornwall which could gain or lose from the guidance   |