Health Technology Clinical Committee
Findings and Coverage Decision
Topic: **Hip Surgery for Femoroacetabular Impingement Syndrome (FAI)**
Meeting Date: **September 16th, 2011**
Final Adoption: **November 18th, 2011**

Number and Coverage Topic

20110916B – Hip Surgery for Femoroacetabular Impingement Syndrome (FAI)

HTCC Coverage Determination

Hip Surgery for Femoroacetabular Impingement Syndrome (FAI) is **not a covered benefit**

HTCC Reimbursement Determination

- **Limitations of Coverage**
  - N/A
- **Non-Covered Indicators**
  - Hip Surgery for Femoroacetabular Impingement Syndrome (FAI)
- **Agency Contact Information**

Agency	Contact Phone Number
Labor and Industries	1-800-547-8367
Public Employees Health Plan	1-800-762-6004
Health and Recovery Services Administration	1-800-562-3022

Health Technology Background

The Hip Surgery for Femoroacetabular Impingement Syndrome (FAI) was selected and published in December 2010 to undergo an evidence review process. The evidence based technology assessment report indicates that Femoroacetabular impingement (FAI) syndrome is a recently recognized diagnosis in primarily younger individuals where relatively minor abnormalities in the joint (orientation or morphology) are thought to cause friction/impingement and pain. It is theorized that FAI starts the breakdown of cartilage, leading to osteoarthritis. There are two types of FAI: cam impingement (non-spherical femoral head or abnormality at the head-neck junction) and pincer impingement (deep or retroverted acetabulum resulting in over coverage of the femoral head). Proponents believe that surgical correction of the impinging deformities will alleviate the symptoms and retard the progression of OA degeneration.

Hip surgery is an invasive procedure to correct FAI using either an open surgery or arthroscopic approach. The surgeon cuts off abnormal outgrowths of bone, removes damaged cartilage, and reshapes the femoral neck to ensure that there is sufficient clearance between the rim of the joint socket and the neck of the femur. After corrective surgery, avoidance of weight bearing for several weeks to months and rehabilitation is required. Surgery to correct FAI includes arthroscopy, open dislocation of the hip and arthroscopy combined with a mini-open approach. The purpose of the surgery is to remove abnormal outgrowths of bone and damaged cartilage, and to reshape the femoral neck to ensure that there is sufficient clearance between the rim of the acetabulum and the neck of the femur.

In July 2011, the HTA posted a draft and then followed with a final report from a contracted research organization that reviewed publicly submitted information; searched, summarized, and evaluated trials, articles, and other evidence about the topic. The comprehensive, public and peer reviewed Hip Surgery for Femoroacetabular Impingement Syndrome (FAI) report is 165 pages.

An independent group of eleven clinicians who practice medicine locally meet in public to decide whether state agencies should pay for the health technology based on whether the evidence report and other presented information shows it is safe, effective and has value. The committee met on September 16th, 2011, reviewed the report, including peer and public feedback, and heard public and agency comments. Meeting minutes detailing the discussion are available through the HTA program or online at http://www.hta.hca.wa.gov under the committee section.

Committee Findings

Having considered the evidence based technology assessment report and the written and oral comments, the committee identified the following key factors and health outcomes, and evidence related to those health outcomes and key factors:

1. Evidence availability and technology features

The evidence based technology assessment report indicates:

- The evidence based technology assessment report stated that there are two types of FAI: cam impingement (non-spherical femoral head or abnormality at the head-neck junction) and pincer impingement (deep or retroverted acetabulum resulting in over-coverage of the femoral head). Proponents believe that surgical correction of the impinging deformities will alleviate the symptoms and retard the progression of OA degeneration.
- The evidence based technology assessment report indicated that surgery to correct FAI includes arthroscopy, open dislocation of the hip and arthroscopy combined with a mini-open approach. The purpose of the surgery is to remove abnormal outgrowths of bone and damaged cartilage, and to reshape the femoral neck to ensure that there is sufficient clearance between the rim of the acetabulum and the neck of the femur.
- The committee also reviewed information provided by the state agencies, and public members; and heard comments from the evidence reviewer, clinical expert, HTA program, agency medical directors and the public.

2. Is the technology safe?

The committee discussed multiple key factors and health outcomes that were important for consideration in their overall decision on whether the technology is safe. Summary of committee considerations follows.

- The evidence based technology assessment reported that six comparative studies, 31 case-series and three case-reports were found that reported complications following surgical treatment for FAI in non- or recreational athletes. Altogether, 20 studies reported on arthroscopy, ten on open dislocation and seven on the mini-open procedure.
- The evidence based technology assessment report indicated reoperation for reasons other than a conversion to a total hip arthroplasty occurred 3.8% in patients undergoing arthroscopy, 4.4% in those receiving open dislocation and 8.7% in patients following a mini-open procedure. There was only one reported head-neck fracture (<0.1%) and no reports of AVN, osteonecrosis or trochanteric nonunion. Heterotopic ossification occurred in 2% to 3% of those receiving arthroscopy or mini-open, and 6% in those receiving open dislocation.
- The evidence based technology assessment report indicated neurological complications (nerve palsy, paresthesia, and neuropraxia) were rare in those receiving arthroscopy or open dislocation; however, they occurred in 22% of 258 hips undergoing a mini-open procedure. Most were transient in nature. Three case-reports described an occurrence of extravasation of fluid into the abdomen/chest during arthroscopic treatment of FAI. In one case, the fluid extravasation resulted in an intra-abdominal compartment syndrome that presented as cardiopulmonary arrest.

3. Is the technology effective?

The committee discussed multiple key factors and health outcomes that were important for consideration in their overall decision on whether the technology is effective. Summary of committee considerations follows.

- *Hip surgery (open or arthroscopic) compared with no surgery for FAI:* The evidence based technology assessment report indicated that no randomized controlled trials (RCTs) comparing

surgery with conservative care for FAI or comparing different surgical treatments for FAI was found.

- *Hip surgery (open or arthroscopic) compared with no surgery for FAI:* The evidence based technology assessment report identified one study that retrospectively compared conservatively treated patients versus those receiving FAI surgery versus patients having a total hip arthroplasty in the short-term (<5 year follow-up). In addition, the report identified four comparative studies which investigated the effectiveness of various surgical treatments for FAI: labral debridement versus labral refixation (two studies) and osteoplasty versus no osteoplasty (two studies). The first study poorly describes the selection of patients so that it was not possible to tell how the treatment and control groups were obtained. The last four studies use historical controls. There was no evidence identified that one specific treatment resulted in better outcomes than another (surgery versus no surgery, labral debridement versus refixation, osteoplasty versus no osteoplasty).
- *Hip surgery (open or arthroscopic) compared with no surgery for FAI:* The evidence based technology assessment report identified 27 case series that reported on clinical outcomes following treatment for FAI in non- or recreational athletes. All studies report improvement in pain, patient-reported and clinician-reported hip outcomes scores, patient satisfaction and return to normal activities following FAI surgery.
- *Hip surgery (open or arthroscopic) compared with no surgery for FAI:* The evidence based technology assessment report stated that approximately 8% of patients diagnosed with FAI who undergo surgery in published series go on to have a total hip arthroplasty within 3 years. There are no long-term (≥10 years) data available to assess long-term effectiveness of FAI surgery. There are no data yet published to test the hypothesis that FAI surgery prevents or delays hip osteoarthritis or the need for total hip arthroplasty.
- *Hip surgery for FAI compared with no surgery:* The evidence based technology assessment reported six comparative studies, 31 case-series and three case-reports were found that reported complications following surgical treatment for FAI in non- or recreational athletes. Altogether, 20 studies reported on arthroscopy, ten on open dislocation and seven on the mini-open procedure.

4. Special Populations?

- The evidence based technology assessment report indicated no studies were found comparing the differential effectiveness of surgery versus nonsurgical care in FAI patients. However, five studies were identified that looked at outcomes following surgical treatment for FAI in two subpopulations, those with varying degrees of osteoarthritis as assessed by the Tönnis grade and patients with varying degrees of chondral damage assessed during surgery.
- The evidence based technology assessment report indicated that outcomes following FAI surgery were consistently worse in patients with greater preoperative osteoarthritis compared with those with less osteoarthritis. In one study, the relative risk of a conversion to total hip arthroplasty (THA) in those with preoperative Tönnis grade 2–3 was 58 (95% CI: 8, 424) compared with Tönnis grade 0-1. There was no reported difference in outcomes in patients with varying degrees of chondral damage assessed during surgery. No data from other subpopulations were found.

5. Is the technology cost-effective?

The committee discussed multiple key factors that were important for consideration in their overall decision on whether the technology has value and is cost-effective. Summary of committee considerations follows.

- The evidence based technology assessment report indicated no cost effectiveness, cost utility or costing studies were found on FAI surgery.

6. Medicare Decision and Expert Treatment Guidelines

Committee reviewed and discussed the expert guidelines as identified and reported in the technology assessment report.

- The Centers for Medicare and Medicaid Services have no national or local coverage determinations or policies regarding the surgical treatment of FAI syndrome.
- Guidelines – a search of the core sources and relevant specialty groups identified three guidelines.
  - National Institute for Health and Clinical Excellence (NICE), 2007: The National Institute for Health and Clinical Excellence (NICE), (which provides guidance on health technologies and clinical practice for the National Health Service in England and Wales) concluded in 2007 that current evidence on the efficacy and safety of both arthroscopic surgery for the treatment of FAI syndrome "does not appear adequate for these procedures to be used without special arrangements for consent and for audit or research"; further publications of safety and efficacy outcomes will be needed. NICE stated that only surgeons with specialist expertise in arthroscopic hip surgery should perform this procedure for FAI and that the natural history of FAI syndrome and the selection of patients for this procedure are uncertain; further research on these issues will be useful.
  - National Institute for Health and Clinical Excellence (NICE), 2011: In July 2011, NICE published an updated report on arthroscopy for FAI syndrome in the form of a rapid review of the medical literature and specialist opinion. The review is based on approximately 1126 patients from three non-randomized controlled trials, five case-series, and one case-report. Several short-comings in the available literature were addressed such as overall poor study quality, limited prospective data collection in case-series, variability of outcome assessment scales used and lack of validation of these scales, heterogeneity in treatments making comparison between studies difficult, and descriptions of hip impingement pathology/lesions not well defined in all studies. The specialists' concluded that "there is no proof yet that this procedure is efficacious, but the technique may have a place in preventing the development of osteoarthritis of the hip in some patients". They also stated that use of this procedure will become more widespread, but should remain with the confines of the specialist dealing with hip disorders in young adults.
  - National Institute for Health and Clinical Excellence (NICE), 2011: NICE published an updated guidance report on open surgery for FAI in July 2011 stating that "current evidence on the efficacy of open femoroacetabular surgery for hip impingement syndrome is adequate in terms of symptom relief in the short and medium term. With regard to safety, there are well recognized complications. Therefore this procedure may be used provided that normal arrangements are in place for clinical governance, consent and audit with local review of outcomes.

Committee Decision

Based on the deliberations of key health outcomes, the committee decided that it had the most complete information: a comprehensive and current evidence report, public comments, and agency and state utilization information. The committee concluded that the current evidence on Femoroacetabular Impingement Syndrome (FAI) demonstrates that there is insufficient evidence to cover. The committee considered all the evidence and gave greatest weight to the evidence it determined, based on objective factors, to be the most valid and reliable. Based on these findings, the committee voted to not cover Femoroacetabular Impingement Syndrome (FAI).

Health Technology Clinical Committee Authority

Washington State's legislature believes it is important to use a scientific based, clinician centered approach for difficult and important health care benefit decisions. Pursuant to chapter 70.14 RCW, the legislature has directed the Washington State Health Care Authority, through its Health Technology Assessment program to engage in a process for evaluation process that gathers and assesses the quality of the latest medical evidence using a scientific research company and takes public input at all stages. Pursuant to RCW 70.14.110 a Health Technology Clinical Committee (HTCC) composed of eleven independent health care professionals reviews all the information and renders a decision at an open public meeting. The Washington State Health Technology Clinical Committee (HTCC) determines how selected health technologies are covered by several state agencies (RCW 70.14.080-140). These technologies may include medical or surgical devices and procedures, medical equipment, and diagnostic tests. HTCC bases their decisions on evidence of the technology's safety, efficacy, and cost effectiveness. Participating state agencies are required to comply with the decisions of the HTCC. HTCC decisions may be re-reviewed at the determination of the HCA Administrator.