**Document Control**

**Title**
EXETER VIRTUAL KNEE CLINIC – PROTOCOL FOR NORTH DEVON RADIOLOGY DEPTS
Standard Operating Procedure

**Author**

**Author’s job title**
Surgical Care Practitioner RD&E/ Supt Radiographer/Clinical Practice Facilitator

**Directorate**
Planned Care Division

**Department**
Radiology Department

**Version**

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<th>Date Issued</th>
<th>Status</th>
<th>Comment / Changes / Approval</th>
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<td>Dec 13th 2016</td>
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**Lead Director**
Lead Clinician for Clinical Radiology

**Document Class**
Standard Operating Procedure

**Target Audience**
Radiographers
Radiologists
Specialist Physiotherapists Surgical Practitioners Knee and Hip clinics

**Distribution List**
Radiographers

**Distribution Method**
Trust’s internal website

**Superseded Documents**
None

**Issue Date**
February 2017

**Review Date**
February 2020

**Review Cycle**
Three years

Consulted with the following stakeholders: (list all)

- Clinical Audit Lead Radiology
- Health and Safety Representative Radiology
- Lead Clinician for Clinical Radiology
- Radiographers
- Assistant Practitioners
- Radiology Clinical Support Worker

Contact responsible for implementation and monitoring compliance:
Clinical Practice Facilitator

Education/ training will be provided by:
N/A
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<td>- Radiology Clinical Governance Group</td>
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1. **Background**

1.1. Due to the increase in the number of total knee replacements being performed, coupled with a diverse catchment area for the Royal Devon & Exeter Hospital orthopaedic department, it became necessary to investigate alternative means of reviewing patients. The aims of this were to reduce pressure on the RD&E’s orthopaedic outpatient / X-ray department and car parking capacity, and also to provide timely patient review (with x-rays) at the recommended intervals, closer to the patient’s home address.

1.2. The Virtual Knee Clinic has been running for patients in the Exeter and East Devon locality (from Okehampton to Axminster), with high levels of success and patient satisfaction, for over two years.

1.3. However there are a number of patients who have travelled in for surgery at the RD&E from outside its traditional catchment area, some of whom reside in the North Devon locality. Until recently we were only able to offer North Devon locality patients a review at Tiverton or Okehampton X-ray departments, which still represents a significant travel distance for some patients. It is therefore very helpful to utilise the facilities in north Devon for this small number of patients.

2. **Purpose**

2.1. The Standard Operating Procedure (SOP) has been written to:

- Identify the procedure for the routine radiographic review of Total Hip Replacements (for the Virtual Hip Clinic) and Knee Implants (for the Virtual Knee Clinic) by Surgical Care Practitioners based at the Royal Devon and Exeter Hospital (RD&E)
3. **Scope**

3.1. This Standard Operating Procedure (SOP) relates to the following staff groups who may be involved in the assessment and delivery of imaging:

- Registered radiographers
- (Trainee) Assistant Practitioners
- Support workers

4. **Location**

4.1. This Standard Operating Procedure can be implemented in X-ray Departments in Barnstaple and Bideford where competent staff are available to perform the required imaging procedures, but NOT Ilfracombe due to the limitations of current X-ray equipment.

4.2. Staff undertaking this procedure must be able to demonstrate continued competence as per the organisations policy on assessing and maintaining competence.

5. **Equipment**

- Surgical Practitioner signed Imaging Request forms (Exeter request forms)
- X-ray imaging equipment
- Heel support pads

6. **Procedure**

**Patient reported outcome measures (questionnaire forms):**

6.1. Patients will receive copies of these in the post prior to their appointment. They will be directed to complete them and bring them into the department to hand in to reception on arrival. We would be grateful if you would return completed forms via the internal mail system to Laurence Sinclair, PEN017, PEOC, RD&E Wonford, Barrack Road, Exeter EX2 5DW. 20 spare copies of the questionnaire will be supplied to each X-ray department in case a patient forgets to bring their own copy in.

**X-ray:**

6.2. X-rays are used in the usual fashion to monitor implant position, detect radiolucency or fracture. In Virtual Knee Clinic they are also used to measure range of motion. The process for this is straightforward, with a routine weight-bearing AP of the affected knee, followed by two unloaded lateral views – one in full active knee extension, and one in full active knee flexion. A step-by-step work flow is included in Appendix 1. From this the clinician will use the Cobb angle feature of PACS to measure knee extension and flexion, and therefore arrive at a range of motion. This process has been validated and published.
7. **References**


8. **Associated Documentation**

8.1. Northern Devon Healthcare NHS Trust Policies for:

- NDHT Radiation Policy
- NDHT Radiology Patient Identification Policy
Appendix 1 – Exeter Virtual Knee Clinic (VKC) Workflow

Exeter VKC X-ray request received by the patient’s nearest X-ray department – request will be marked “AS PER VIRTUAL KNEE CLINIC PROTOCOL PLEASE”

X-ray dept. to book appointment for patient to attend and send appointment letter / phone call

- Patient attends for X-ray appointment
- Patient to hand in knee questionnaire

X-ray performed as per following guidelines:

- Weight-bearing antero-posterior view of the specified knee, with views including the tips of stemmed components where indicated;
- Unloaded true lateral horizontal beam view of the specified knee with the patient positioned in the supine or semi-supine position and the knee extended as far as the patient can manage actively (without any external influence). The heel should be supported by a bolster. Enough tibia /fibula and femur should be visible to allow accurate positioning of a Cobb angle marker of approx. 5cm to be placed along the cortex of the posterior femur and the anterior tibia (see image below).
- Unloaded true lateral horizontal beam view of the specified knee with the patient positioned in the supine or semi-supine position and the knee flexed as far as the patient can manage actively (without any external influence). Enough tibia, fibula and femur should be visible to allow accurate positioning of a Cobb angle marker of approx. 5cm to be placed along the cortex of the posterior femur and the anterior fibula (see image below).

Patient will then complete and hand in their “What Went Well...Even Better If?” satisfaction survey.

Knee questionnaire and satisfaction survey to be posted to Laurence Sinclair, PEN017, PEOC, RD&E Hospital (Wonford), Barrack Road, Exeter EX2 5DW via internal mail. (Feel free to keep a copy of the satisfaction survey responses if it helps with personal development reviews or service evaluation locally).
Radiology positioning protocols

Example of extension view (with Cobb angle markers)
(This example may not be quite as true lateral as we’d prefer!)

Example of flexion view (with markers)
Appendix 2 – Radiographic Examination Protocol

RADIOGRAPHIC EXAMINATION PROTOCOL

VIRTUAL HIP CLINIC

Common Clinical Indication
- All requests will be written by RD&E Surgical Care Practitioner Sabrina Sokolowski on RD&E request forms
- ‘Due to routine review of THR (or bilateral THR)’

Invalid Reasons
- Requests not written by the designated referrer
- Non recognised referral forms (i.e not on RD&E or NDHT forms)
- Request not for routine follow-up of Total Hip Replacement (THR)

Standard Projections

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Additional Projections

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Comments
- All requests will require a low-centred pelvis and a turned lateral of the specified hip (both hips if both hips are specified).
- Patients will bring a questionnaire to their appointment, radiographer or receptionist must ensure that the questionnaire is returned to the Virtual Hip Clinic in PEOC at the RD&E.

Protocol Written by: Scott Burnett East and Mid Devon Community Radiographer / Viv Easton
Clinical Practice Facilitator NDDH
Protocol Verified by: Dr Mark Meller Consultant Radiologist
Protocol Release date: April 2018