**Assessing the technical quality of the Hysterosalpingography service**

**Descriptor:**

An audit to assess the HSG service within an institution.

**Background:**

Hysterosalpingograms (HSG) are recommended by NICE as the first-line investigation of tubal patency in patients with sub-fertility and no known comorbidities. There is variability in how they are performed in different trusts (both in technique and personnel). HSGs may be performed by trained radiographers, radiologists, nurses or some gynaecologists.

This audit was designed to assess the quality of an HSG service when compared to National Standards for radiation dose and locally devised standards for cannulation success and diagnostic quality of images based on a review of the published literature.

## The Cycle

**The standard:**

• Dose: National DRL = 200 cGycm2

• Screening Time: National Dose limit = 0.7 minutes

• Cervical cannulation: No National standard, Local standard set at > 95%

• Four key images should be obtained during a study - early uterine filling, late uterine / early tubal filling, late tubal filling and free spill of contrast

The key images should be of good diagnostic quality and the report should be accurate.

**Target:**

• Compliance with the dose and cannulation standards among all groups of operators -100%

• All 4 key images obtained - 100%

• Study quality - 100% diagnostic

• Report accuracy - 95% concordance with original report on review

## Assess local practice

**Indicators:**

• Average Dose

• Average Screening time

• Cervical cannulation success rate

• Key images – early uterine filling, late uterine / early tubal filling, late tubal filling, and free spill of contrast

• Study quality – scored as poor, average or good with respect to anatomical delineation during all the phases of filling

• Report accuracy – the report is deemed accurate if retrospective analysis agrees with the contemporaneous report

**Data items to be collected:**

For all patients who have undergone a HSG examination in a set time period obtain:

• Dose and screening time

• Success of Cervical cannulation - Access the report of each case, cervical cannulation can be ascertained from the report. Any doubt can be verified by assessing the radiographic images taken during the study

• Whether the key images obtained

• Study quality

• Report accuracy

**Suggested number:**

• Dose and cannulation results - at least 20 cases per operator

• Image quality - at least 20 cases per operator

• Report accuracy - at least 20 cases per operator

**Suggestions for change if target not met:**

• Screening doses and times exceeding the national reference dose

   - Are they operator or equipment related? Further action will depend on the outcome of this analysis but may require further training or change of equipment

• Cervical Cannulation: re-education of practitioners with technical skill courses could be helpful

• Image type and number

   - Awareness of both literature, review training / supervision, this may be of importance if studies principally performed by registrars on rotational basis

• Consider changing cannulation device used. Although multiple instruments are available for performing the procedure including the Leech Wilkinson Cannula, the Margolin Cannula and HSG Balloon Cannula, there is no conclusive evidence that one has superior performance characteristics over the other. This may be worth reviewing locally.

**Resources:**

• Radiology booking system for dose & screening time data

• Radiology reporting system for cervical cannulation rates

• Image review Radiologist (or radiographer)

**References:**

1. NICE guidelines [CG156]Fertility: Assessment and treatment for people with fertility problemsPublished date: February 2013, updated 2016 [http://www.nice.org.uk/guidance/cg156/chapter/1-recommendations#/#investigation-of-fertility-problems-and-management-strategies](http://www.nice.org.uk/guidance/cg156/chapter/1-recommendations#/%23investigation-of-fertility-problems-and-management-strategies)
2. National Diagnostic Reference levels 2016 <https://www.gov.uk/government/publications/diagnostic-radiology-national-diagnostic-reference-levels-ndrls/national-diagnostic-reference-levels-ndrls>
3. Simpson W, Beitia L, Mester J. Hysterosalpingography: A Re-emerging StudyRadio Graphics 2006; 26: 419-431.
4. Tur-Kaspa I, Seidma DS, Soriano D, Greenberg I, Dor J, Bider D. Hysterosalpingography with a balloon versus a metal cannula: a prospective, randomized, blinded comparative study. Human Reproduction 1998; 13 (1): 75-77.
5. Doses to Patients from Radiographic and Fluoroscopic Xray Imaging Procedures in the UK- 2010 Review. D Hart, M C Millar and P C Shrimpton HPA-CRCE-034  [http://webarchive.nationalarchives.gov.uk/20140714084352/http://www.hpa.org.uk/publications/radiation/crcescientificandtechnicalreportseries/hpacrce034/](http://webarchive.nationalarchives.gov.uk/20140714084352/www.hpa.org.uk/publications/radiation/crcescientificandtechnicalreportseries/hpacrce034/)

**Submitted by:**

Revised template by K Duncan, based on previous templates by Dr C M Sullivan,Dr R Bleehen and Dr W Davis

**Published Date:**

Thursday 6 May 2010

**Last Reviewed:**

Saturday 16 July 2022