Document Title:	**GUIDELINES FOR SONOGRAPHERS PERFORMING ULTRASOUND EXAMINATION OF THE UPPER ABDOMEN**		
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Related Trust Policies (to be read in conjunction with)	04071 Infection Control Policy 04071 Standard Infection Prevention 04072 Hand Hygiene

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1.0	E Buchanan-Parker		22nd July 2010
2.0	E Sawtell		November 2012
3.0	E Buchanan-Parker		October 2014
3.1	E Buchanan-Parker		August 2015
4.0	Polly Eves	Full Review	14th December 2018

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1.0 Purpose

1.1 The purpose of this guideline is to provide staff with a specific procedure to follow. This will ensure that every abdominal ultrasound scan, undertaken by a Sonographer, is complete and standardised.

2.0 Introduction

2.1 Ultrasound is regarded as a first-line examination for a vast array of abdominal symptoms, owing to its non-invasive and to some extent accessible nature.

2.2 Consistent management of abdominal scanning by sonographers facilitates an accurate and thorough approach to the examination with accurate reporting to the referring clinician.

3.0 Definition

3.1 A full abdominal ultrasound survey includes assessment of the liver, pancreas, gallbladder, biliary tree, both kidneys, spleen and abdominal aorta.

4.0 Examination Preparation

4.1 Any patient booked for an ultrasound scan of the upper abdomen should receive a letter instructing them to fast four hours prior to the scan.

5.0 Consent

5.1 The consent process is a continuum beginning with the referring health care professional who requests the ultrasound examination and ending with the sonographer who carries it out.

5.2 It is the responsibility of the referring professional to provide sufficient information to the patient to enable the latter to consent to the ultrasound examination being requested.

5.3 It is the responsibility of the sonographer to ensure that the patient understands the scope of the ultrasound examination prior to giving his or her consent.

5.4 Verbal consent must be obtained for all examinations. Additional verbal consent should be obtained where a student sonographer undertakes part or all of the ultrasound examination under supervision.

5.5 Consent for those of an intimate or invasive nature should be recorded in the ultrasound report.

6.0 Performing the Scan

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6.1 Anatomy to be examined:

- Liver: shape, contour and echotexture. Appearances of intrahepatic vessels and ducts
- Gallbladder: size, shape, contour and surrounding area ultrasound characteristics of the wall and the nature of any contents
- Common duct: maximum diameter and contents; optimally it should be visualised to the head of pancreas
- Pancreas: size, shape, contour and ultrasound characteristics of head, body, tail
- Spleen: size, shape, contour and ultrasound characteristics
- Abdominal Aorta: Antero-posterior (AP) diameter
- Kidneys: size, shape, position and orientation, outline and ultrasound characteristics of cortex, medulla, collecting system
- Adrenals: not routinely viewed but any apparent abnormality of size and ultrasound characteristics should be noted

7.0 Images to be Stored

7.1 A series of static images should be recorded on the Radiology patient archive and communication system (PACS). This should include:

- Liver: Longitudinal sections (LS) and Transverse sections (TS) of left and right lobes.
- RUQ to demonstrate comparative echotexture of liver and right kidney.
- Common duct measurement.
- Gallbladder.
- Right kidney: LS and TS
- Left kidney: LS and TS.
- Spleen: AP measurement.
- Abdominal aorta: AP diameter.
- Pancreas.
- Any pathology identified.

8.0 Reporting

8.1 The following should be documented in the electronic report, recorded on the radiology information system:

- Description of the liver (size, shape, echotexture).
- Description of the common duct and gallbladder.
- Description of both kidneys.
- Description of the spleen.
- Description of the pancreas.
- Description of abdominal aorta, including AP measurement if aneurismal.
- State any reason for limited examination/suboptimal views.

8.2.1 Measurement of the abdominal aorta should be made in accordance with the national guidelines published by the NHS Abdominal Aortic Aneurysm Screening Programme (NAAASP). This will allow comparisons to be made with the screening programme available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/256500/23_nhs_abdominal_aortic_aneurysm.pdf

8.2.2 An abdominal aorta measuring 3cm or above in AP diameter, measured in longitudinal section (inner wall to inner wall) is considered as aneurysmal and should be documented on the report, along with the location of the aneurysm.

8.2.3 In the case of the discovery of an abdominal aortic aneurysm larger than 5.5cm in diameter, the findings should be communicated to the patient and reported directly to the vascular Clinical Nurse Specialists, on extension 4308. The patient can then be directed to the next vascular clinic where an assessment can be made by a Vascular Surgeon.

8.2.4 All reports should have a conclusion summarising pertinent positive and negative findings with interpretation and recommendations for further imaging and management as appropriate.

9.0 Staff and Training

9.1 The procedures should be carried out by suitably qualified sonographers possessing the Diploma in Medical Ultrasound (DMU), a Postgraduate Diploma in Medical Ultrasound (PG Dip) or equivalent. Ultrasound students may carry out ultrasound scans under the supervision of a qualified sonographer.

10.0 Infection Prevention

10.1 All staff should follow the Trust's guideline on infection prevention whilst performing the scan, paying particular attention to the specific ultrasound protocols relating to the cleaning of ultrasound equipment which can be found in Appendix A.

11.0 Audit and Monitoring

11.1 Compliance with the guideline is monitored as part of an ongoing audit of imaging, completed by the ultrasound department.

11.2 Feedback to all staff is given on a regular basis and presented at staff meetings.

11.2.1 Poor compliance may lead to an unnecessary change in the patient's clinical pathway. In this instance, further training will be provided for staff if needed.

12.0 Equality & Diversity

12.1 Mid Essex Hospital Services NHS Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.

13.0 Communication

13.1 Approved guidelines are sent via email to all sonographers.

13.2 Hard copies of approved guidelines are kept in each ultrasound room where sonographers scan.

13.3 After approval, a copy of the guideline is published on the MEHT intranet.

14.0 Risk Events / Error Reporting

14.1 All untoward events involving patient safety are reported to the risk management department and head of ultrasound by way of a datix form. This should be completed by the staff member(s) involved.

14.2 All errors are reported to the Radiology Clinical Director for discussion at a monthly radiology meeting.

15.0 References

Guidelines for Professional Working Standards: Ultrasound Practice. United Kingdom Association of Sonographers. October 2008.

Bates, J. (2008) Abdominal Ultrasound : How, Why and When. 2nd ed. Elsevier, Churchill Livingstone : London.

Standard Operating Procedures : NHS Abdominal Aortic Aneurysm Screening Programme (2018) http://aaa.screening.nhs.uk/getdata.php?id=345

Appendix A

Ultrasound Department
Mid Essex Hospital NHS Trust

Infection control procedure for the decontamination of Ultrasound Transducers. For intra-cavity and non-intra-cavity procedures.

Prior to vaginal ultrasound examinations

- Ensure the patient is comfortable and relaxed.
- Explain the procedure to the patient.
- Obtain verbal/written consent from the patient for this procedure.
- Confirmation of consent should be documented in the written report or in the patient's notes.
- A Chaperone must be present throughout the scan, as per Trust chaperone policy.
- If possible lock the door to maintain privacy.
- Screen the patient to protect privacy while undressing – using the ceiling mounted curtain or mobile screen.
- No one should enter the room, whilst the examination is undertaken.

Equipment

- The equipment must be thoroughly cleaned prior to use and decontaminated after use and this should be documented in the written report or patient's notes.

- The operators' hands must be washed and/or decontaminated with alcohol gel hand rub both before and after the scan.

Procedure – intra-cavity ultrasound

- Examination gloves must be worn when carrying out the scan.
- Apply a small amount of gel in the teat of the cover.
- Cover the inter-cavity transducer with an ultrasound probe cover (all covers are single use only). Document whether latex or non-latex probe cover is used in the written report or patient's notes.
- Use a non-spermicidal probe cover for infertility patients.
- Use a latex free probe cover for patients with a latex allergy.
- A single use sachet of lubricating gel is to be applied to the end of the inter-cavity transducer.
- Undertake the procedure.

Procedure – Non intra-cavity ultrasound

- Apply a small amount of gel to the surface of the transducer.
- Undertake procedure.

Decontamination of Equipment after each Procedure

Intracavity transducers	Non-intracavity transducers
1. Remove excess gel with a paper tissue	1. Remove excess gel with a paper tissue
1. Clean and decontaminate the intra-cavity transducer and cable with a detergent wipe* by: (i) Covering the surface and sides of the transducer with the detergent wipe (ii) Rotate and progress the wipe along the length of the cable. (iii) This step should be repeated with a fresh wipe until the transducer and cable are visibly clean.	2. Clean all surfaces of the transducer and cable with a detergent wipe*.
3. Next decontaminate the transducer using Tristel Duo by: (i) Depress the pump once to dispense Duo Foam onto the surface. (ii) Use a paper towel and spread evenly. (iii) Ensure all areas of the surface come into contact with foam. (iv) Leave to dry, allow 30 seconds before contact.	3. Dry the transducer with a paper tissue
4. Dispose of gloves.	4. The non-intracavity transducer is now ready for the next patient
***Detergent wipes = Sani-Cloth Multi Surface Detergent Wipes**	