Sgrinio Cyn Geni Cymru
Antenatal Screening Wales

GIG CYMRU NHS WALES
Iechyd Cyhoeddus Cymru
Public Health Wales

# Ultrasound Observations Pathways: isolated echogenic bowel, isolated renal pelvis dilatation and isolated ventriculomegaly 2018

Version 1

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Following extensive consultation the following ultrasound findings (markers, observations) are the only ones that should be routinely reported on the anomaly scan in Wales from 1st August 2018.

This document contains the pathways for care for women found to have a baby with one of these findings and replaces the previous booklet 'Specific ultrasound findings, guidelines for health professionals in Wales, 2015'.

# Isolated Ventriculomegaly

This pathway is for women where only ventriculomegaly is identified on scan in the absence of any other identified structural abnormality (isolated).

### Definition

Mild ventriculomegaly is when the ventricular atrial diameter, at any gestation measures 10.1mm to 12.0mm. A measurement of the cerebral ventricle(s) of 12.1mm to 15.0mm is classed as moderate ventriculomegaly. A measurement of 15.1mm and above is classified as hydrocephalus and should be treated as an abnormality and Antenatal Screening Wales standard US24 should be followed.

***Any measurement of the ventricle(s) over 10mm will require follow up by a fetal medicine consultant.***

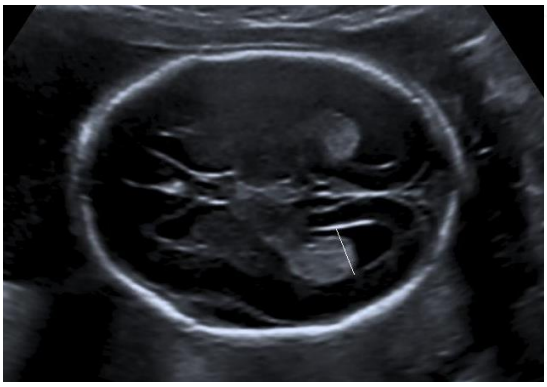
### Possible Associated Clinical Conditions

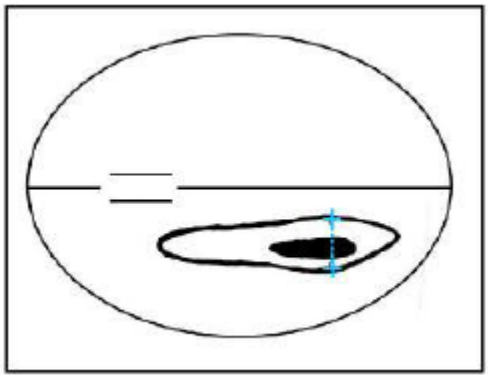
- Congenital infections – rubella, toxoplasmosis and cytomegalovirus
- Neural tube defects
- Chromosomal or genetic conditions
- Abnormal cerebral development

### Measurement

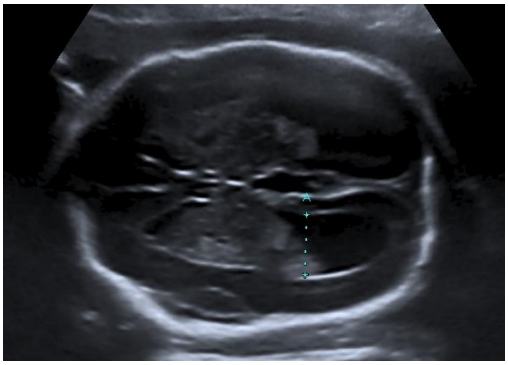
The correct plane for measurement of the ventricles requires the midline of fetal brain to be the midline of the image. The measurement at the atrium of the lateral ventricles should be taken at the level of the glomus of the choroid plexus bisecting the long axis of the ventricle. The callipers are placed to the inner margins of the echogenic ventricular wall 90° to the long axis of the ventricle.

### Normal ventricles showing correct measurement

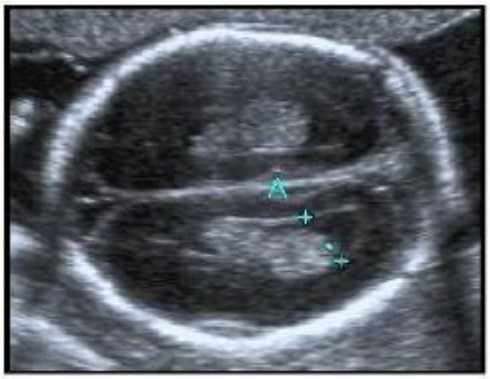




**Example of ventriculomegaly measurement**



**Example of incorrect measurement**



The callipers are not placed at 90° to the long axis of the ventricle and the plane is incorrect.

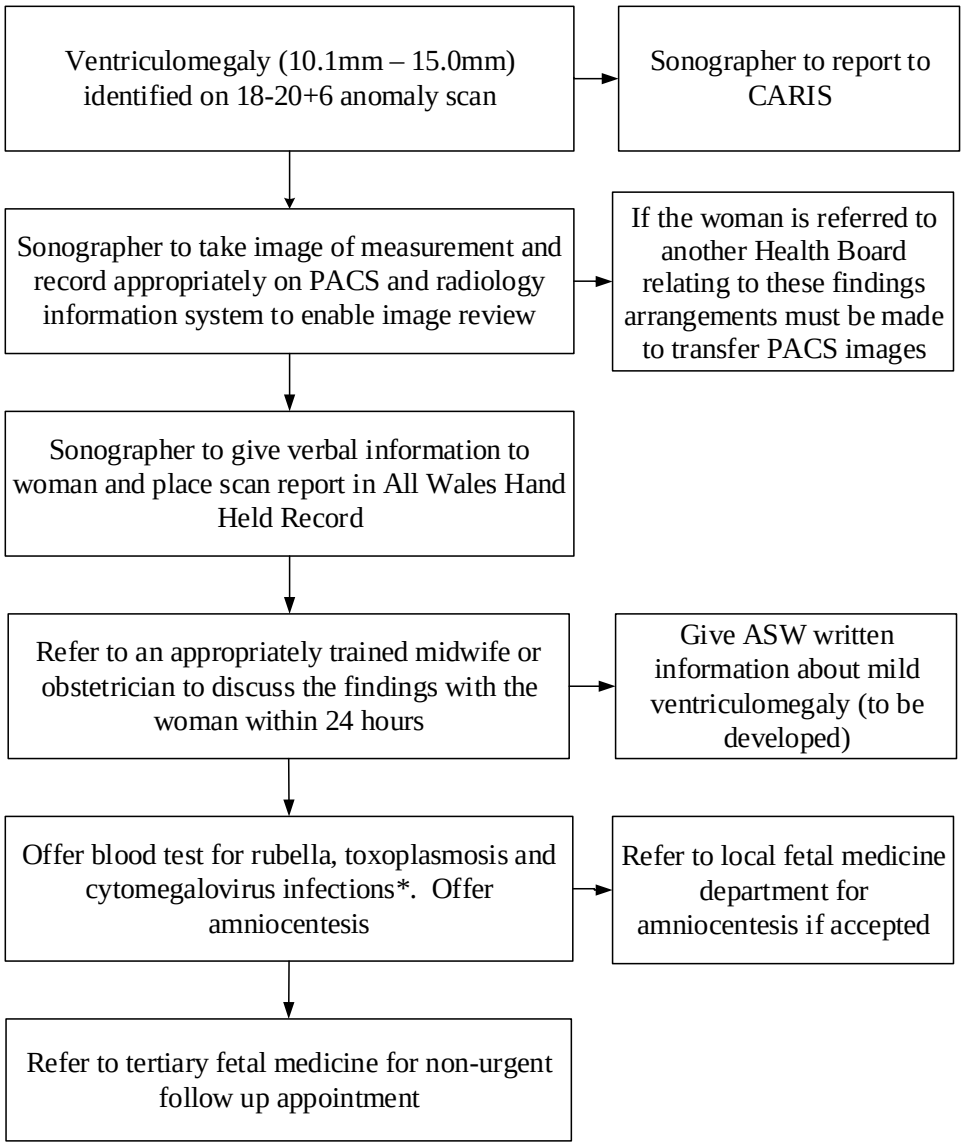
**Quality Assurance**

There must be an image from the anomaly scan stored for review by the obstetrician or fetal medicine consultant. If the woman is referred to another Health Board relating to these findings the arrangements must be made for image transfer via PACS.

An audit of images for abnormalities must be arranged by the superintendent sonographer at least once per year.

ASW is to develop and publish an All Wales pro-forma.

## Pathway ventriculomegaly




* A current sample for these infections should be taken and the laboratory should be asked to compare result with booking blood if any stored.

# Isolated Renal Pelvis Dilatation

This pathway is for women where only renal pelvis dilatation is identified on scan in the absence of any other identified structural abnormality (isolated).

### Definition

If the anterior–posterior (AP) diameter of the fetal renal pelvis measures 5.1mm or more this is known as renal pelvis dilatation (RPD), if the RPD measures 10.1mm or more the woman should be referred to an obstetrician for further discussion and follow-up, if the RPD measures 15.1mm or more the woman should be referred to a fetal medicine department.

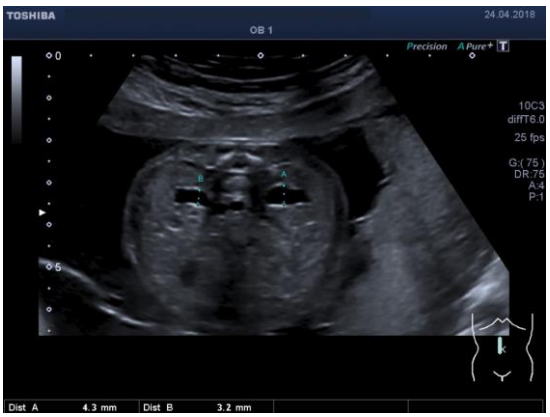
### Possible Associated Clinical Conditions

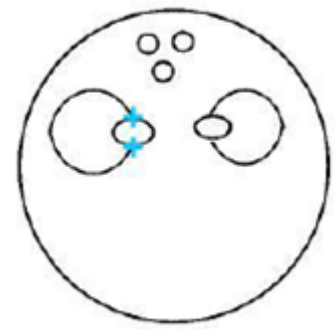
- Renal infections
- Abnormalities in the renal tract occasionally require postnatal surgery

### Measurement

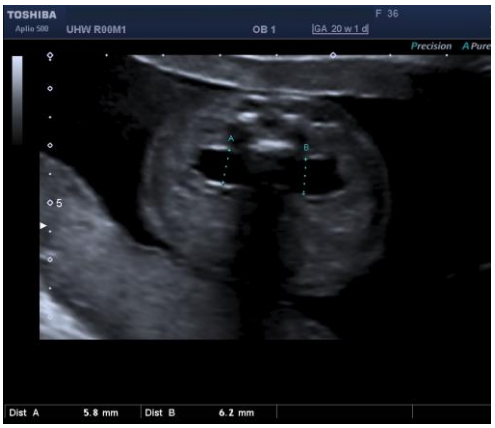
Fluid filled dilatation of the renal pelvis measured on axial section with an AP diameter of 5.1mm or more (callipers to be placed on the inner AP margins of the renal pelvis wall) measured at the level of the kidneys. This may be unilateral or bilateral.

### Normal renal pelvis showing correct measurement

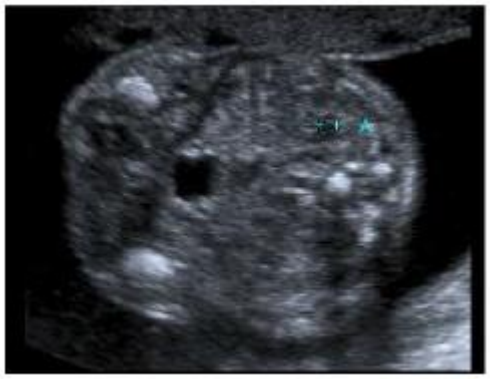


## Example of renal pelvis dilatation




## Example of incorrect measurement



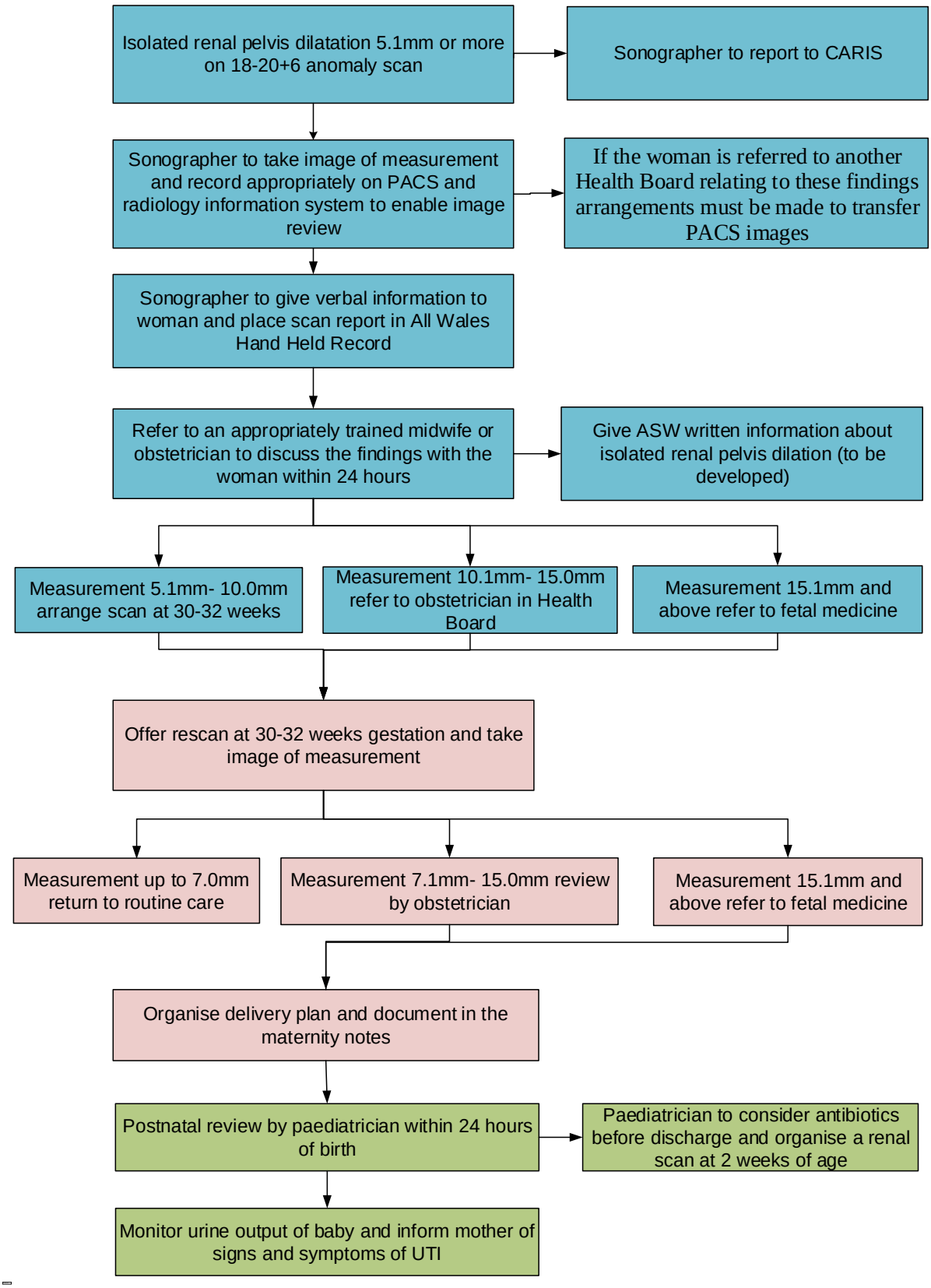
### Quality Assurance

There must be an image from the anomaly scan stored digitally for review by the obstetrician or fetal medicine consultant. If the woman is referred to another Health Board relating to these findings arrangements must be made to transfer PACS images.

An audit of images for abnormalities must be arranged by the superintendent sonographer at least once per year.

## Pathway renal pelvis dilatation

Colour Key: Anomaly Scan | Third Trimester | Postnatal Care



# Isolated echogenic bowel

This pathway is for women where only echogenic bowel is identified on scan in the absence of any other identified structural abnormality (isolated).

### Definition

Echogenic bowel is when loops of fetal bowel appear as bright as bone.

### Possible Associated Clinical Conditions

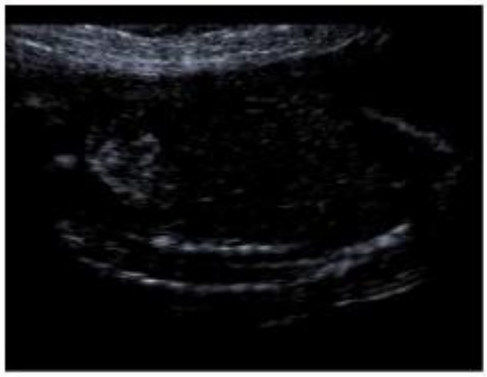
- Cystic fibrosis
- Cytomegalovirus
- Intrauterine growth restriction (IUGR)

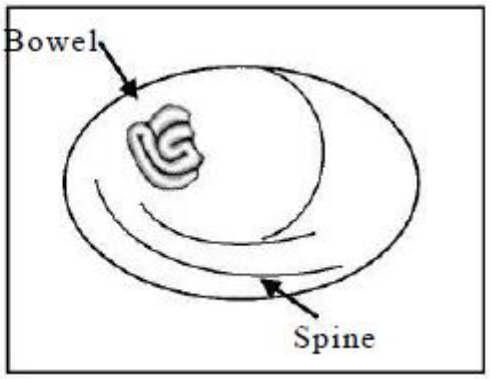
This may also be caused by a placental haemorrhage at some time prior to the scan.

### Assessment

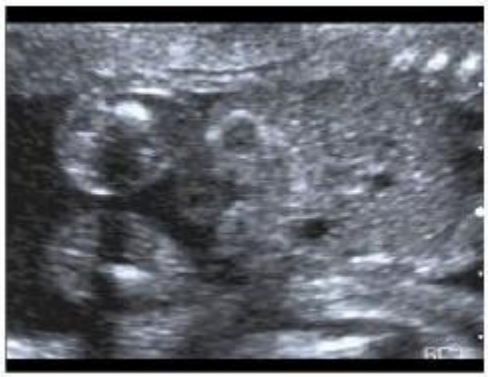
An area of increased echogenicity within the fetal abdomen that is as bright as bone. Single or multiple loops of bowel may be identified and it may be noted to be solid intraluminal echogenicity or occasionally echogenicity of the walls only (tram line).

### Example of echogenic bowel






### Example of incorrect image



The gain is too high in this image and needs to be reduced to show echogenic bowel

## Quality Assurance

The Welsh Study of Mothers and Babies demonstrated that there was a definite inter and intra operator bias when diagnosing echogenic bowel on anomaly scan. There were 78 cases of echogenic bowel reported to the study, and following the quality assurance review 55 of these cases were confirmed (70%).

To enable the quality assurance process image audit is required.

## Internal Quality Assurance

There must be two images from the anomaly scan stored for review by the obstetrician or fetal medicine consultant. One image as the echogenic bowel was first seen and one image of the echogenic bowel with the ultrasound machine gain turned down. Both images must show both the bowel and a bone to compare echogenicity. If the woman is referred to another Health Board relating to these findings arrangements must be made to transfer PACS images.

An audit of images for abnormalities must be arranged by the Obstetric Lead Sonographer at least once per year.

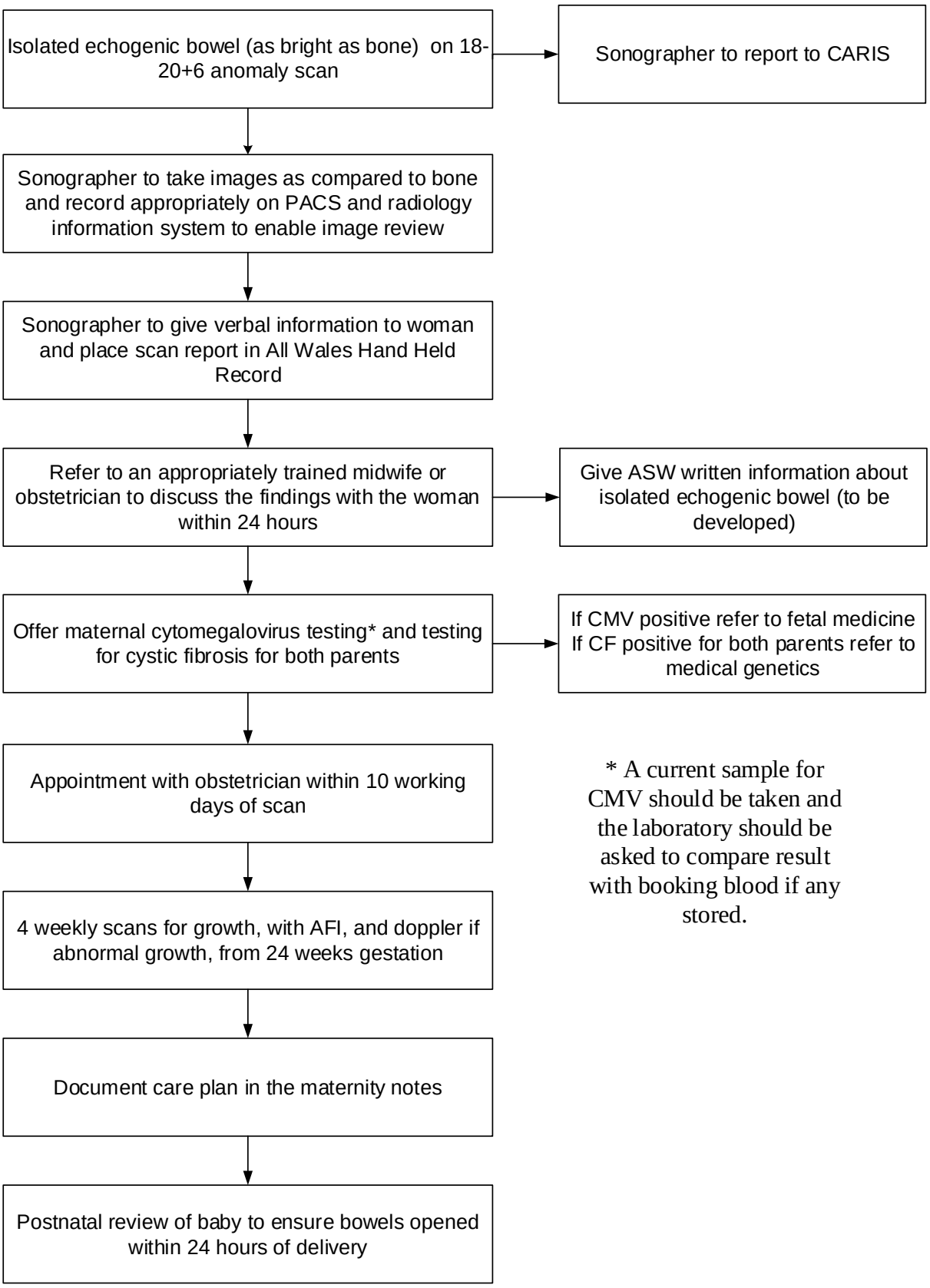
## Quality Assurance by Antenatal Screening Wales

The process for quality assurance for echogenic bowel will consist of a review of all echogenic bowel images identified on anomaly scan within Wales within a 1 year period. To identify all echogenic bowel reported Antenatal Screening Wales have agreed a process for collecting each of these images:

- The sonographer performing the scan must ensure that the images taken of the bowel are sent via PACS to Breast Test Wales PACS
- The sonographer reporting the echogenic bowel must email the woman's radIiology identification number to the ASW Obstetric Ultrasound Coordinator (OUC) at andrea.thomas9@wales.nhs.uk so that the images can be located
- The echogenic bowel must be reported to CARIS via either the RadIS reporting module or using the normal health board reporting mechanism.

A panel of experts (ASW ultrasound co-ordinator/ ASW ultrasound advisor/ obstetric lead sonographer) will then view all reported cases of echogenic bowel and make a comparison of the 2 images for each reported case (i.e. the image as first seen and the second image with the ultrasound machine gain turned down) for quality assurance. A report will be written and discussed in the Antenatal Screening Wales quality groups to assess whether education, training or a change in the pathway is required.

## Pathway echogenic bowel




* A current sample for CMV should be taken and the laboratory should be asked to compare result with booking blood if any stored.