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Improving prenatal diagnosis and management in Cumbria by telemedicine

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Background to project

- Women referred by sonographer to local specialist or Fetal Medicine Centre when problem identified during scan.
- Specialised fetal medicine services concentrated in Fetal Medicine Centre at Newcastle.
- Women from North Cumbria have significant journeys to make, often at own expense.
- Telemedicine has the potential to provide specialist obstetric ultrasound and consultation to women within their own unit.

Project aims

- To establish a videoconferencing infrastructure between the obstetric ultrasound unit at West Cumberland Hospital and the Fetal Medicine Unit in Newcastle.
- To determine the technical success of the service.
- To evaluate the success of utilising the telemedicine technology for training sonographers
- To assess women's views of using a telemedicine ultrasound service, including family costs.
- To assess the benefits and barriers to adoption of the service across Cumbria.

Potential impact of project

- Reduction in the number of women required to travel to Newcastle for specialist fetal ultrasound.
- Reduction in associated family costs.
- Enhanced standard of local obstetric ultrasound by developing local sonographers through telemedicine training.

Challenges

- Initial difficulty in establishing effective IT link.
- Directorate approval from Obstetrics AND Radiology.
- Senior level clinical approval was gained early in project. Managerial approval had to be escalated to Executive level.
- Anxiety over sonographer workload, staffing levels and pressure on other ultrasound services.

Progress

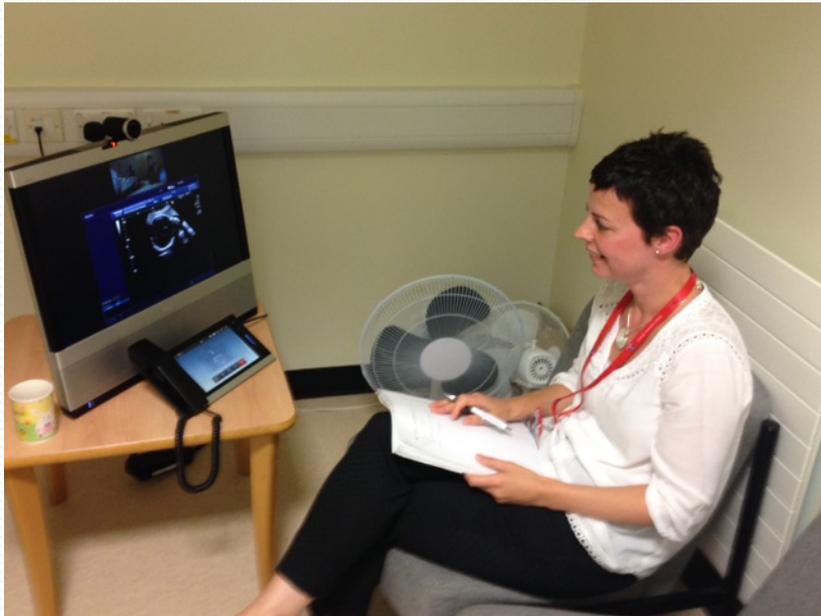
- Videoconferencing link established and functioning.
- Telemedicine service is functioning effectively within the clinical ultrasound service at WCH and Fetal medicine Unit at NuTH.
- One sonographer has completed advanced Doppler training and further two will be signed off by end March 2016.

Ultrasound scan using telemedicine



- Videoconferencing equipment (Cisco EX90) set up and connection established.
- Sonographer undertakes ultrasound scan in usual way.
- Real-time images and audio are transmitted to NuTH.
- Guidance given to WCH sonographer via link.
- Viewed by Fetal Medicine Consultant and/or sonographer via videoconferencing unit at NuTH.

Sonographer training



- Sonographers based at WCH provided with training in uterine artery and middle cerebral artery Doppler.
- After an initial tutorial (via videoconference) and assessment of baseline skills, supervised training is undertaken.
- Sonographers are deemed competent when five successful Objective Structured Assessments of Training (OSATs) are completed for each technique.
- Results in upskilled workforce, improved care for women and reduction in number of women who need to travel for ultrasound scans.

Evaluation of telemedicine service

- Number of telemedicine consultations (together with indications) as a proportion of all fetal medicine cases/ consultations referred from WCH.
- Technical success of every new consultation - success is defined as an ultrasound image quality sufficient to make a definitive prenatal diagnosis.
- Cost impact - cost components for the NHS including consultation times and staff utilisation.

Patient Evaluation

- All women who have had a telemedicine scan are asked to complete a questionnaire to assess their views, acceptability and family costs.
- Telephone interviews are being undertaken with a sub-sample of women (n=10-15) to gain greater insight of their experience.

Results

- 19 fetal medicine cases have been referred for telemedicine ultrasound and consultation (15 new and 4 return).
- 5 point Likert scale used to evaluate image and audio quality.
- Audio was scored 5 (excellent) for all cases (n=19).
- Image score ranged 3-5 (adequate, good, excellent) with majority rated 'good' (n=9).
- In all cases it has been possible to complete the consultation via the teleconferencing link.

Women's views

- Nine questions to explore women's views of acceptability of a fetal medicine telemedicine consultation.
- Likert scale scored 1- 5 (1- strongly disagree, 5- strongly agree). Maximum score 45.
- Majority of women (n=12) had a score of 44-45.
- Most women (n=12) were satisfied with the quality of the care received.
- Most women (n=12) would be willing to have a telemedicine consultation in the future.

Quotes and comments from women

I would have had to take probably a whole day off work again and driving there and everything else that would have been a lot more stressful whereas as it seemed more relaxed because it was in a familiar area.

Excellent service, all staff involved really friendly and helpful, explained everything, saved time, money, stress. Much easier than having to travel and worry about money and public transport.

Quotes and comments from women

This is a wonderful service. Not only saves time & resources for the patient but makes you feel more comfortable & confident in your care.

I mean these days we Skype or FaceTime, you know, within your personal life so why shouldn't it be used for like you know, something medical.

Fully support the telemedicine consultation. Very beneficial, time saving & cost saving.

The Stakeholder Empowered Adoption Model

University of Cumbria

- The model provides a process for stakeholder values, benefits and goals to be incorporated into an evaluative pilot so that appropriate evidence is collected to enable adoption to take place.



Qualitative adoption study

University of Cumbria

- Information on the benefits and barriers to adoption of the service has been collected using the Stakeholder Empowered Adoption Model (StEAM)
- Face-to-face interviews have been undertaken with a range of economic and users stakeholders:
 - Commissioners
 - Service managers
 - Consultants
 - Sonographers
 - IT support
- Analysis is ongoing

Early Findings

- **Initial barriers**

- The operating context at WCH
- IT - Connectivity

- **Challenges**

- Delivering a shared consultation when used to working alone –
“it’s being watched”
- Communication – knowing when an image has been satisfactorily acquired; knowing when to move on
- The need to resist scanning intuitively:

Instead of thinking right, the baby’s lying in that position, I need to go in this position to get what I need, we maybe shouldn’t be doing that until they ask us but it’s hard when you’ve done it for so long, automatically gone to that position, to stop yourself doing it.

Early Findings

- **Benefits To West Cumberland Hospital**

- Sonographers are upskilled; more involved in women's journeys and have greater access to specialist knowledge
- Health Professionals feeling less isolated
- Kudos to both hospital and trust from being involved in the innovation:

Because we've had so much negative press I would hope that this would show ladies that there is things coming back to us and this is a pioneering project that started here.

Early Findings

- Amongst stakeholders there was widespread acceptance that the innovation provides **improved services and convenience for women**
- This was backed up with anecdotal evidence from informants that women are very accepting of the telemedicine
- As a result, key stakeholders were keen to see the innovation continue and expand.

If they can come to West Cumberland; have their scan, and as long as they feel that their service has been done well and that they've had as good a scan as they could get at Newcastle well then it's worth it.

National Maternity Review

Remote and rural areas can introduce innovative working practices such as:

- Making use of technology e.g. consultations by video link between the centre and smaller unit.

Thank you for listening

Project funded by:
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