The profile of a modern, well equipped Breast Imaging Unit in the UK

The Peterborough Breast Imaging Unit, a part of the UK National Health Service (NHS) has been steadily gaining a high reputation in the UK. The unit provides breast screening and breast symptomatic services. Well equipped and staffed to do this, the unit was the first one in the UK to instal a specimen radiography system and is now well-established as a reference center for specimen radiography.

Diagnostic Imaging Europe wanted to find out more so we spoke to Ms. Jane Harris, Consultant Radiographer.

Q. FIRST OF ALL PLEASE TELL US ABOUT YOUR UNIT. ISN’IT PART OF THE PETERBOROUGH CITY HOSPITAL IN ENGLAND. WHERE EXACTLY IS PETERBOROUGH, HOW BIG IS THE HOSPITAL AND WHAT POPULATION DO YOU SERVE?
Yes, Peterborough is a Cathedral city approximately 80 miles north of London and 40 miles west of Cambridge. The Peterborough City Hospital opened in 2010 and has 600 inpatient beds, outpatient clinics and an Accident and Emergency department. All in all, you could describe Peterborough City Hospital as a busy district general hospital.

Q. NOW THE BREAST IMAGING UNIT. HOW ARE YOU STRUCTURED? HOW MANY PATIENTS DO YOU SEE? ARE THESE SYMPTOMATIC PATIENTS? SCREENING? WHAT ABOUT TREATMENT?
The Peterborough Breast Unit provides NHS Breast Screening and Breast Symptomatic Services to women who are referred into the service and those who are eligible for routine breast screening. (The NHS is the UK’s National Health Service, the taxpayer-funded system providing health care to the general public). Both services are managed by a Unit Manager who is responsible for the integration and co-operation of the two services.

Our screening population is approximately 50,000 and we call in women aged between 47-73 years. Our symptomatic service sees approximately 3500 new referrals per year.

We have recently appointed a new Oncoplastic Surgeon to join our existing three other Consultant Surgeons and plan to further increase the Oncoplastic work currently offered to patients.

We are also expanding the service to increase our number of Breast Care Nurses. Overall, the Breast Screening Service is led by a Radiologist, who is Director of Breast Screening and is supported by a Consultant Radiographer. The Unit has strong professional links with the hospital’s main general radiology department.

Peterborough City Hospital also has a new Radiotherapy department enabling women to undergo treatment at their local hospital. Oncology services including chemotherapy and radiotherapy are available on-site.

Q. WHAT ABOUT THE EQUIPMENT YOU HAVE TO DO ALL THIS?
The imaging service provides standard mammography, cone compression views, breast ultra-
sound imaging, stereotactic and ultrasound guided core biopsies and wire localization prior to surgical intervention.

The Breast Unit at Peterborough City Hospital is a new dedicated Unit which has digital GE Senograph Essential mammography equipment, three machines within the unit and one on a mobile breast screening unit providing service to a 25 mile radius around the hospital site. We have recently acquired two new GE Logic S8 ultrasound machines with elastography capabilities. We have a GE 3 Tesla MRI unit on-site to provide breast MRI examination.

In addition to all this, we also have the Bard Vacora device for large gauge vacuum-assisted biopsies. We use the lightweight disposable Achieve needle for routine 14 gauge core biopsies. and e the Homer Mammolok ‘J’ wire for the pre-operative wire localization. All core biopsy specimens taken for microcalcifications within the breast are imaged in our Kubtec Xpert 40 specimen radiography unit. The Kubtec unit is also as used for imaging the operative breast specimens to ensure accuracy of excision.

Q. WHAT ABOUT THE PERSONNEL YOU HAVE TO RUN ALL THIS?

Our imaging team consists of Assistant Practitioners who provide the mammography service in the Breast Screening programme, and also radiographers who carry out mammography in both screening and symptomatic services as well as specialised views at breast assessment clinics. We have also three Advanced Practitioners who are trained in mammography image interpretation for the screening service, one Advanced Practitioner trained to perform stereotactic guided interventional procedures and one Advanced Practitioner who undertakes breast ultrasound and ultrasound guided interventional procedures.

In addition, we have one Consultant Radiographer who is trained and experienced in all mammographic and ultrasound procedures and performs the tasks that used to be carried out by the Consultant Radiologist. Four of the staff are also trained to inject radioactive isotopes prior to carrying out sentinel lymph node biopsy procedures.

This staff structure is in fact the recommended ‘Four Tier’ system designed to provide continuity of breast imaging services in the UK in view of the national shortage of breast-experienced Radiologists.

Planning and scheduling are carried out by our Office Manager and a team of office administration staff while the Breast Unit Manager oversees the running of the whole breast service.

Q. THE ROLE OF PRACTITIONER OR ADVANCED PRACTITIONER SOUNDS INTERESTING. IT’S NOT A POSITION THAT EXISTS IN ALL EUROPEAN COUNTRIES. WHAT EXACTLY IS THE ROLE OF THE PRACTITIONERS? TRAINING REQUIRED? HOW DO THEY FIT INTO THE TEAM?

As for training, the Assistant Practitioners undertake a two year foundation degree in breast imaging to acquire the skills and knowledge needed to perform routine screening mammography to the standard required by the National Breast Screening Programme.

The Radiographers are state-registered and undertake a one year post graduate certificate in breast imaging to enable them to perform mammography and generate specialised mammographic images.
in both the screening and the symptomatic services.

Advanced Practitioners are qualified to the same level as the Radiographers but, in addition, they undertake further Masters-level post graduate qualification in their chosen field of interest such as image interpretation, breast ultrasound, clinical breast examination or interventional techniques.

Consultant Radiographers will have achieved all the above qualifications and in addition they are experienced in all the advanced practice roles. A Consultant Radiographer is able to work autonomously in breast screening assessment and in one-stop symptomatic clinics. The training for the position of Consultant Radiographer can take 3-5 years to complete.


Yes in fact we are quite proud that in 2006, Peterborough Breast Imaging Unit acquired the first Xpert 40 specimen radiography unit in the UK. These systems are manufactured in America by the Kubtec company and distributed by Medical Imaging Systems Limited. Peterborough is now well established as the reference site for this specimen radiography system.

The advantages of this equipment were soon realized. The speed of specimen image acquisition during stereotactic interventional procedures has reduced examination time by almost 10 minutes. This has led to a more pleasant — or less stressful — experience of stereotactic core biopsy for the woman, as well as having the advantage for us of reducing waiting lists.

We have a 10cm x10cm digital detector which has proved adequate size for our surgical specimens. The core biopsy specimens can be geometrically magnified up to four times to produce excellent resolution of the resultant digital image.

The high specification X-ray source in the KubTec system, together with the really user-friendly software package enables us to obtain ready visualization of microcalcification within the breast specimens. The cabinet is connected to the hospital PACS system so the digital images can be visualized instantly in the operating theatre; this means that surgical procedure times are reduced.

Q. HOW DO YOU SEE THE FUTURE DEVELOPMENTS IN YOUR UNIT?

The whole field of image technology is developing rapidly so we are keen to make sure that we keep up with the advances by introducing them into our units in Peterborough in the future, not just for the sake of having new technology but more importantly to continue to offer the best possible service to the women we see in our unit. For example, we are very interested in the work being done elsewhere in the UK in tomosynthesis and contrast enhanced spectral mammography.