

Initial Experience With An ULTIMAX-i Multi-Purpose Digital Radiographic-Fluoroscopic Unit



TOSHIBA's Ultimax-i System at the Kootenay Boundary Regional Hospital supports a wide variety of X-Ray examinations from GI contrast studies to general angiography.

Kootenay Boundary Regional Hospital, Trail, BC

The Kootenay Boundary Regional Hospital is a regional hospital within the Interior Health network of British Columbia, serving a population of approximately 80,000 people. It is associated with satellite hospitals located in Nelson, Grand Forks, and Castlegar. The radiology staff at Kootenay Boundary Regional Hospital includes Dr. Gonzalo Ansede, Dr. Elsabe Steenkamp, Dr. Susan Babensee, and Dr. Steven Plaa.

Dr. Ansede has advised that the services provided are those you would associate with a regional centre including CT, MRI, nuclear medicine, digital radiography, and some of the more routine interventional procedures.

Ms. Susan De Rosa is the Professional Practice Leader of the Diagnostic Imaging Department.

Ms. Thalia Vesterback is the Director of

Diagnostic Imaging for Interior Health East, making sure operations are being maintained efficiently and effectively. Ms. Vesterback works directly with the Diagnostic Imaging leadership team, on all aspects of capital and strategic planning, identifying with the future of the services provided to the Region.

VISIONS Canada visited the Kootenay Boundary Regional Hospital in Trail to interview Dr. Ansede, Ms. DeRosa and Ms. Vesterback on the acquisition of the Ultimax-i and their initial experience.

What is the role of the Ultimax-i in your imaging department?

Dr. Ansede:

We still do a lot of gastro-intestinal studies (barium swallows, meals and enemas) and the occasional fistulagram on post surgical patients. The Ultimax-i is perfectly suited for these procedures. In terms of interventional radiology, that is where we need the Ultimax-i in order to help us enhance those

"TOSHIBA's Ultimax-i multipurpose x-ray system allows us to put patients through at a much higher pace, and to conduct an increased number and range of procedures. Another important benefit is that the dose is reduced relative to the previous system, so patients get exposed to less radiation. Working with Toshiba has been a very enlightening and didactic experience – they are a great company to deal with."

*Dr. Gonzalo Ansede
Kootenay Boundary
Regional Hospital*



Ms. Vesterback:

The world of radiology is definitely changing. We are shifting from conventional fluoroscopic systems which were common in a lot of our departments, towards more of a multi-purpose system that gives you much more flexibility in terms of the type of work that can be done. Procedures such as pain management and joint injections are just one example. We were looking at the different options that would support us in this transition.

What clinical benefits have been provided to your facility?

Dr. Ansede:

We can now perform procedures such as fluoroscopic guided injections into joints which before required the patient to move into awkward positions because of the limited range

skills and services that we provide. We do a lot of fluoroscopic guided pain management procedures. It gives us very good images using a low dose. In addition to its great range of movement, it has a very small footprint. Consequently we are able to move around the table very easily. In general we are extremely happy with the system. It looks fantastic, patients like it, we like it and we have had a lot of support from TOSHIBA in setting up the software and all of the services that we need. The specific items that we wanted are on the system and we have been working with it very happily.

What were the principal reasons that persuaded you to select the Ultimax-i?

Dr. Ansede:

When Bob Small, our TOSHIBA Account Manager first approached us, there was a very clear understanding of our needs. TOSHIBA's proposal endorsed fully this understanding. The Ultimax-i and its capabilities are exactly what we need. It is a general multi-purpose workhorse that can manage all of the fluoroscopic examinations including minor interventional procedures. Because of the great images it can also be used for digital radiography of extremities.

Ms. De Rosa:

We were looking to do more interventional work. For joint injections and the interventional work we want to do, the Ultimax-i is a much better system than a basic fluoroscopy unit. The technology is moving away from these basic units.

of movement of the equipment. Patients can now have the same procedures in much greater comfort. Consequently procedures are much easier and the throughput is much higher. The patients also get exposed to less radiation. Anything that you can do to reduce the dose further is always welcome.

Ms. De Rosa:

The patients benefit because we can do more interventional work. Dr. Ansede has really taken on doing more joint injections with steroids and aspirations. With the basic fluoroscopy unit, you could do it, but it was much more difficult.

Ms. Vesterback:

With a conventional fluoroscopic unit the patient is repositioned to get the projections that you need. With the C-arm design of the Ultimax-i, the system does the repositioning for you so it is a lot easier on the patient and it is faster. It gives us more flexibility within the department and within



*Ultimax-i Clinical Site:
Kootenay Boundary
Regional Hospital,
Trail, BC*



Ms. Thalia Vesterback, Director of Diagnostic Imaging for Interior Health East and Ms. Susan De Rosa, Professional Practice Leader of the Diagnostic Imaging Department discuss their initial experience with the Ultimax-i at Kootenay Boundary Regional Hospital Trail, BC.

the region because this is now going to be the only radiographic-fluoroscopic unit that we have within the Kootenay Boundary Region. We don't have a formal pain management clinic in the Kootenay Boundary Region but my hope is that we will get there at some point and the Ultimax-i will definitely help position us to be able to support that.

How is the role of the Ultimax-i perceived in terms of the importance and position in your clinical service offering?

Dr. Ansede:

The Ultimax-i is an intrinsic part of the services that we offer. I see the main pillars of radiology in this hospital as Ultrasound, CT, MRI, some interventional procedures and routine radiography in which the Ultimax-i plays its part. Interventional procedures can be done using Ultrasound, CT or the Ultimax-i, with the Ultimax-i now accounting for approximately half of the interventional procedures that we do. The Ultimax-i is now one of the pillars of the radiology services that we provide.

Ms. Vesterback:

We are still learning what the capabilities of the system are. In addition we have to determine carefully our resources with respect to the radiologists and what they want to do, and what our physicians and specialists would like. One of our anesthetists is interested in pain management and so they are evaluating how the Ultimax-i will support them. We are also in the process of better understanding how the new system will support our organization's goals and objectives around pain management and the shift to do more interventional type work. We see more interest

from nephrologists and orthopedic surgeons, now that we have equipment in place which enables us to better support them. We need to better understand what support the overall health care team can provide in terms of patient management. What type of support you have locally dictates the level of complexity of the exams that we are allowed to perform.

What are your expectations of vendors supplying diagnostic imaging equipment?

Dr. Ansede:

It is very important that the vendor understands our needs. I expect the vendor to do everything possible to meet our objectives in terms of pricing, the capabilities of the system, follow-up in all respects, an efficient installation and competent service to ensure the machine does deliver what it says (on the box). The vendor must ensure that hospital staff understand the system and receive the training that they need to use the equipment to its full capacity and capability. The commitment to a long term high quality relationship with the hospital is also very important.

Ms. Vesterback:

One very important expectation is functionality. Does the system give us the functionality that we need, for what we need now and looking ten, fifteen years out? In the public healthcare system we expect longevity from our equipment, so "can it meet the needs?", "is it going to be reliable?", "is the service satisfactory?", "is there good communication and support from the vendor?" and of course feedback from other sites. Going on site visits and evaluating their experience is very important and helpful.

When assessing the industry today, what are your observations with respect to the vendors?

Dr. Ansede:

It is a difficult industry in terms of competition, because you have great industry leaders. I think TOSHIBA is among them, but I would not say one vendor is better than the others. There are different products and systems that you can buy, and for a particular situation you may find that one vendor suits you better than the others. In my experience with the Ultimax-i, I have found dealing with TOSHIBA very easy. It has been a learning experience in terms of understanding the procurement process for the machine, communicating what the equipment can do, and then putting the system into practice. It has been a very enlightening experience.

Ms. Vesterback:

The willingness of where the company is going with technology, recognizing that the field is changing and that user needs are changing is very important. Our selection of the TOSHIBA system was not only having the multi-purpose type functionality and the C-arm design of the Ultimax-i, but taking into account the size of this facility and the large amount of general radiography that we do, the capacity of the Ultimax-i to meet our needs in this respect was very important.

What do you believe is the biggest challenge for companies developing diagnostic imaging systems for the future?

Dr. Ansede:

I think you have many, many challenges. One is the technological challenge of developing new machines that are ever more capable. From my perspective your main challenge is to be able to communicate effectively with those that will be utilizing the equipment. Communicate with the physicians, nurses and technologists. It is essential to communicate clearly your system advancements and capabilities to those at the forefront of clinical service to enable them to put into practice new technological advancements. Communication is the key. You must have the ability to communicate with the clinical staff everything that you have available. In terms of communications channels, I think people like different avenues so you need a multi-channel approach. Some prefer email, others prefer browsing on the internet, some prefer didactic material that is printed, while others prefer the human touch through interaction at congresses such as the RSNA where they can see the equipment and talk to someone directly about it. You need to approach every individual in the way that he or she prefers.

Simplification of the information is very important. Even though we are experts in our field, if we get into technicalities, it can be difficult for us to follow all of the minutia and "little advancements" that manufacturers develop. Sometimes we can get lost with the details and technicalities.

Ms. Vesterback:

I think it is cohesive workflow, in terms of integrating with our PACS, RIS and what is included in the DICOM message, as it affects how the image is displayed and manipulated.

Of course radiation reduction is extremely important these days. It is getting a lot of attention in the eyes of the public. Balancing the amount of radiation required to achieve high quality images is really important.

The technology of the DR detectors to generate high resolution images is important. Physical size and space requirements are often an issue. Equipment with a fairly small footprint while having all of the functionality you need must be considered.

Ms. De Rosa:

Basically getting good images with lower dose radiation for me is the major challenge.

What is your personal vision in terms of where medical imaging technology is likely to go in the next ten years?

Dr. Ansede:

I work in a regional hospital where we provide "bread and butter" radiological services, which is typical of most regional hospitals all over the world. I would like to provide the best radiology that we can locally. I would love to have a 1.5T MR unit which is inexpensive to buy and run. I am not thinking about high tech stuff, but what is available and at low cost. It would be beneficial to offer reliable conventional radiological equipment at a low cost. Many centers, like ours, don't require the latest technologies or bells and whistles (one exception would be low dose strategies). Having access to low cost, relatively cheap to run radiological workhorses would be ideal.



Patient comfort and safety are a priority at Kootenay Boundary Regional Hospital. Following initial positioning of the patient, the Ultimax-i can assume any orientation required with anti-collision technology in place to protect the patient at all times.



Three systems in one – Angiography + Fluoroscopy + Radiography. The Ultimax-i incorporates a multidirectional interactive digital C-arm system offering anatomical coverage from head to toe in excess of 2 meters.

How can TOSHIBA improve?

Dr. Ansele:

My advice to TOSHIBA is to keep on going strong and to keep us informed of what is novel in your line of products. You have to keep the communications channels open. It is great to see some of the didactic lectures that your company is organizing and/or sponsoring. They are very welcome. In terms of the Ultimax-i, we would like to be kept up to date so that the Ultimax-i can remain a great service provider and continue to be used to its full capacity.

Ms. Vesterback:

One of the interesting things I have observed with the Ultimax-i is that it balances the needs of a basic fluoroscopic room with those of an interventional unit. I believe this is going to be an important niche as we shift from using conventional fluoroscopic rooms and not having them in the vast majority of sites; we are going to want to have the best of both worlds. This is a tricky combination to support in a single system. For TOSHIBA, continue to work on improving this marriage. We need a "jack of all trades" but we want it to be a "master", and at the same time inexpensive.

Ms. De Rosa:

For a site of this size, we need the general capabilities of a unit such as the Ultimax-i. This is very important. I think across Canada there are a lot of sites like us.

Ms. Vesterback:

We aren't all like Vancouver General or Kelowna General Hospitals. Having the Ultimax-i definitely supports the region and the services that can be provided geographically, increasing our attractiveness in the recruitment of specialists. We are now in a position to say these are the services we can do, and this helps the overall organization and facility.

The idea of hospitals your size having two CT scanners instead of having more radiographic-fluoroscopic facilities to help the shift in workflow, seems to be growing in popularity. What is your perspective?

Ms. Vesterback:

As radiation dose decreases, as far as trauma imaging is concerned, CT Scanners can accommodate head to toe imaging. It will be interesting to see where we are with imaging in the next ten years. The challenge with public healthcare is having the funding to take advantage of it. From a strategic planning point of view it is challenging in diagnostic imaging as we are buying for the next ten to twelve years.

How do we position ourselves best so that we can take advantage of what is out there right now? When you put together the budget projection of what your expense will be, you look at many things beyond the equipment. You look at servicing and potential downtime. This is going to be our one fluoroscopic unit in the region and we cannot afford downtime. Organizations need to balance what you pay for service with what you think you are going to need, including what you can do in-house.



The Ultimax-i manages gastrointestinal studies, interventional radiology and angiographic procedures at Kootenay Boundary Regional Hospital.