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Workplace injury prevention a high priority

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There may be light at the end of the occupational injury tunnel for ultrasound technologists. A recent study found that 91 per cent experience pain or discomfort at some point during their sonography career. However, HSA has been working to expose the extent of the incidence of injuries among sonographers, and to find ways to reduce and eliminate sonographer injuries.

In 1999, Dr. Ted Milner, a kinesiologist from Simon Fraser University, received funds from WCB to develop and test an ultrasound workstation prototype at BC Womens hospital. However, due to the WCB funding ceiling, certain elements of the study were at risk of being compromised.

In December 1999, HSA approached Milner with a view to obtaining additional funds for the project through OHSAH (Occupational Health and Safety Agency for Healthcare). In concert with HSA, Milner applied for and received $25,000. This money will improve the quality of the study so that effective injury prevention prototypes will be available for use in hospitals sooner.

Milner is working with researchers at BCIT to develop a workstation with adjustable supports for the monitor, transducer and control panel. This workstation will allow the sonographer to face the patient and move around the patient while conducting diagnostic procedures.

As a result of the additional funding, the design team will be able to develop a customized remote control panel and transducer support system. As well, they will be able to involve an industrial designer in the project so that the workstations are suitable for large-scale reproduction sooner.

In developing better alternatives to current work stations, Milner studied the work habits of sonographers at four lower mainland ultrasonography departments. "We worked with 27 sonographers altogether," he said.

"We would spend the entire day with the sonographer, and follow them throughout their entire work shift. We made various measurements, such as the activities of the muscles in the neck, shoulder and hand, and measured the forces they were applying. We were also videotaping, with three cameras set up looking at them from various angles."

These studies allowed Milner to assess current workstations. "We then came up with several ideas about things we thought would work in terms of modifications to the equipment that would help with reducing the

risk of injury," he explained. "Were very optimistic."

The piloting of the workstation will take place at BC Womens Hospital between April and December of this year. The participation of BC Womens Hospital has been supported by management personnel and is due in large part to the hard work of section head Sue Jamieson.

"Its been well documented and researched that repetitive strain [injuries for sonographers] is not just an issue for Womens Hospital or in Canada, but its an international concern," she said.

Jamieson says she urged BC Womens Hospital to take part in this project because of the injury rate she saw among her staff.

"The incidence of injury with my staff was becoming more and more prevalent. Obstetric, echo-cardiograph, endo-vaginal and vascular ultrasound have the highest rate of injury, and thats just what my staff do. It has to do with the prolonged static postures in combination with the fine motor movements that are required in these scans - its a cumulative trauma that builds up over a number of years. But the issue has also come from sonography students who are already noticing some areas of strain and pain," she said.

Jamieson says that although sonographers are aware, they still get injured. "My crew are very cognisant [of the issue] and they have exercise and weight training and stretching. A lot of them have periscapular spinal injury. It affects your shoulder and your arm, and its just absolutely devastating when you can no longer do the job you love. A lot of these are young women and young mothers, and you have to balance and compromise what you can do at home and what you can do at work just to be able to maintain your health."

HSA became involved in this project to ensure that ultrasound injury research was directed toward finding real solutions to the problem. While studies describing the hazards associated with ultrasound have been slowly piling up over the last decade, very little has been done to actually alleviate the hazard.
Many have accepted that the technology does not exist that will allow the basic physical requirements of ultrasound to be adapted while maintaining the diagnostic integrity of the procedure. Milners work challenges these beliefs. First, by teaming up with the design researchers at BCIT he has been able to "re-invent the wheel" from a health and safety perspective.

Currently, most technology is designed so that the health and safety considerations are "after the fact" add-ons. As a result, Milners project represents a unique opportunity to approach the problem differently. Moreover, he has involved two of the major ultrasound manufacturers in this project (ATL and GE). This is a classic example of ergonomics in action - tools are designed to fit the worker rather than the worker being forced to fit the tool.

While it is still too early to predict the results of the study, HSA is proud to be a key part of this innovative strategy for finding long term solutions to the ergonomic hazards experienced by sonographers in BC.

Sonographers interested in joining a support group should contact Sue Jamieson (604/875.2035) or Sandra Austin (604/301.1614).

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