

# Color-Coded CT Protocols Help Reduce Dose for Pediatrics



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- Dr. Donald Frush

For over 20 years, the Broselow-Luten system has been used in emergency departments (ED) to facilitate care and reduce medical errors. The system categorizes children into one of eight color zones based on their weight and size. With these color-coded categories, clinicians can determine a safe medication dose and utilize appropriately-sized equipment.

Radiation and contrast dose remain a primary concern when conducting CT scans of pediatric patients. To address this, Donald P. Frush, M.D., Chief of Pediatric Radiology at Duke Children's Hospital and Health Center (CHC), developed the Broselow-Luten color-coding protocols for use with GE's LightSpeed® scanners, and are also available on the BrightSpeed product line. In 2001, GE became the first CT manufacturer to introduce pre-loaded pediatric protocols based on the child's color classification.

"By implementing Color Coding for Kids, GE seized a major leadership role to lower dose in children and help improve the way physicians scan children with CT," said Dr. Frush. His research with CT exams revealed the system helps medical professionals provide more expedient, standardized care while maintaining clinical confidence.

Use of GE's Color Coding for Kids CT protocols has also helped facilities conform to the standard radiation safety principle, ALARA (As Low As Reasonably Achievable), as well as the FDA's public health notification of 2001 that emphasized the importance of adjusting CT scanner parameters according to the patient's size and weight.

Today, Color Coding for Kids on GE's LightSpeed® VCT is routine at Duke's CHC. Children are first classified according to the Broselow-Luten system, for example, a 35-pound child would be classified as "white." With the "white" color classification, a nurse can use the system as a guide to administer the appropriate color-coded "white" dose of contrast and the technologist selects the "white" protocol on the CT Scanner.

Dr. Frush's experience with Color Coding for Kids on the LightSpeed VCT has made a significant impact. "Many of the questions regarding radiation dose are addressed by this method. Plus, our technologists overwhelmingly prefer this method as it helps simplify protocol selection and performance." ■



Donald Frush, M.D., is Chief of Pediatric Radiology at Duke Children's Hospital and Health Center and Professor of Radiology and Pediatrics at Duke University School of Medicine, Department of Radiology. Dr. Frush is a fellow of the National Council of Radiation Protection and Measurement, is active in the American College of Radiology and the Society of Pediatric Radiology and is Associate Editor for *Pediatric Radiology*.

About Duke Children's Hospital & Health Center

Duke Children's Hospital & Health Center, located in Durham, N.C., is nationally ranked among the best in pediatric healthcare programs. The center offers innovative procedures including stem cell and bone marrow transplants as well as a variety of support services for patients and families.

