

angiography. While further improvements on dose reduction are clearly warranted, these results confirm that effective DSCT doses below average diagnostic catheter doses are becoming more and more common.

### DSCT in Acute Care

A completely different approach is taken by recent publications on DSCT in Acute Care, where, next to clinical effectiveness, economical aspects are considered increasingly important for the everyday question of evaluating patients with suspected acute coronary syndrome. Researchers from the University of Pennsylvania compared conventional approaches, e.g. serial cardiac markers as well as stress testing, with the outcome of an immediate CT coronary angiography<sup>5</sup>. While the immediate CTA approach was as safe and able to identify as many patients with coronary artery disease as the other approaches, it resulted in the lowest cost and shortest length of stay. Overall, an immediate CTA reduced average costs to \$1,240 vs. \$2,318 - \$4,024.

The average length of stay could be shortened to 8.1 hours vs. 20.9–30.3 hours for the other strategies. As the number of CT systems in dedicated emergency department environments is increasing, further studies with larger patient groups are under preparation.

### DSCT and Dual Energy

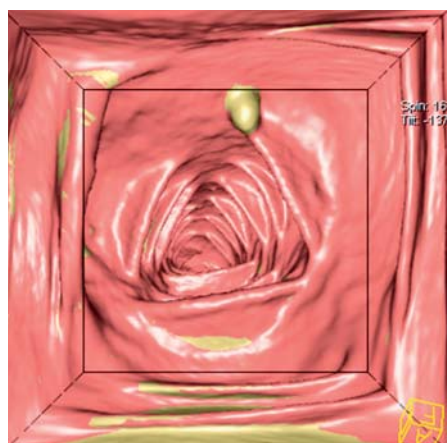
Finally, a whole new field of research was opened with the introduction of DSCT Dual Energy, made possible by applying different energy spectra (of 80 kV and 140 kV) to the two X-ray tubes simultaneously. The results are two spiral data sets acquired simultaneously in a single scan providing diverse information that permits differentiation or characterization of the imaged tissue and material. Possible applications are, e.g. an accurate subtraction of bone in CTAs or iodine removal from liver scans to generate a virtual unenhanced image. A brand-new application, the visualization of iodine content in the myocardial blood-pool to diagnose perfusion defects, has just been evaluated by Ruzsics

et al. from Medical University of South Carolina<sup>6</sup>. They evaluated this approach on 35 patients, and correlated the results with SPECT. Initial results are promising, proving 91% accuracy in comparison with SPECT (per-segment) for detecting any type of myocardial ischemia.

In the meanwhile, more than 400 Dual Source scanners have been installed worldwide, generating a rising number of publications on the cutting-edge of CT imaging.

#### Sources

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VC has been validated as a screening test for colorectal cancer and detection of large and medium-sized polyps.

According to the ACRIN\* 6664 trial, CT Colonography (CTC) – respectively Virtual Colonoscopy (VC) – was comparable to the gold standard colonoscopy for screening intermediate and large-sized polyps. Based on these results, VC has been validated as a screening test for

## First U.S. Payor Reimburses CT Colonography (CTC) for Screening

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colorectal cancer and detection of large and medium-sized polyps. Results from other VC trials (IMPACT, Munich Colorectal Cancer Prevention Trial and Wisconsin Trial) have also shown positive results for VC. Thus, the American Cancer Society (ACS) recently added virtual colonoscopy to their new colorectal cancer screening guidelines. This decision is, for the first time, triggering reimbursement for colon cancer screening in the U.S. Colon Health Centers of America (CHC), a provider of VC services for gastroenterology specialists, has signed a contract with Blue Cross Blue Shield of Delaware (BCBSDE). This agreement represents the first major commercial payor

in the United States to reimburse VC screening. BCBSDE has agreed to reimburse CHC of America's patent-pending, integrated colon screening model, followed by therapeutic colonoscopy for those with discovered polyps. They provide a single, bundled, episode-of-care payment 'per screening event'. The payor believes that it is essential to have the capability to provide same-day, same-prep therapeutic colonoscopy for patients who need it. This is the first step toward future reimbursements in the U.S.

\*ACRIN (American College of Radiology Imaging Network).