



Advanced Cardiovascular Imaging Consortium (ACIC) – Bibliography

<https://www.beaumont hospitals.com/news-principal-blue-cross-pilot>

1: Circulation. 2008;118:S_936

Marked Radiation Dose Reduction in a Statewide Coronary CT Quality Improvement Registry

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Coronary CT angiography (CTA) is highly accurate in detecting CAD, but involves radiation exposure (RAD). Technologic advances can reduce RAD but are not uniformly applied. The Advanced Cardiovascular Imaging Consortium (ACIC) is a statewide quality improvement registry funded by Blue Cross Blue Shield of Michigan; the present study sought to decrease RAD while preserving image quality. Between July 2007 and April 2008, 3,009 CTA patients were enrolled in the ACIC at 15 IRB-approved hospital sites. Data collected included: RAD dose in milliSieverts (mSv), voltage (kVp), scan parameters, use of dose reduction methods (such as ECG pulsing) and image quality rated on 4 point scale (1 = excellent to 4 = poor/uninterpretable). Sites with high doses were counseled after the first month. After month 3, all sites received comparative reports and scanner-specific RAD reduction training that included a best-practice scanning algorithm based on heart rate and body mass index. RAD dose and image quality ratings were monitored and compared to baseline over a 6-month follow-up period. During the first month the median RAD dose for study patients was 25.0 mSv (25 to 75% range, 15 to 30 mSv). RAD dose showed a continuous decline over the 9 month period (see Figure). During the last month, median dose was reduced by 48% from baseline (13.1 mSv, range 8 to 23mSv, $p < .001$). Image quality was stable before and after intervention (mean 2.0 ± 0.9 vs. 2.1 ± 0.9 , $p = \text{NS}$). A marked reduction in radiation dose from CTA can be achieved on a large scale without impairing image quality using a collaborative quality improvement process.

2: J Am Coll Cardiol, 2007; 49:1830-1833

Coronary Angiography by Computed Tomography -- Coronary Imaging Evolves

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