

# Similar success, survival at PCI centers with and without surgical backup: NCDR data in print

JUN 23, 2009 [Shelley Wood](#)

**Washington, DC** - One of the largest, "most comprehensive" studies to show no differences in outcomes between PCI facilities with and without on-site surgical backup has now been published in the June 30, 2009 issue of the *Journal of the American College of Cardiology* [1]. Moreover, say the authors, no differences were seen when they looked just at primary PCI or elective PCI procedures.

Results of the study were first presented at the **ACC 2008** meeting, as reported by [heartwire](#) at the time.

Senior author on the study, **Dr Ralph G Brindis** (Northern California Kaiser Permanente, San Francisco, CA), told **heartwire** that while there is now an important randomized clinical trial under way, known as **C-PORT Elective**, looking at the feasibility and outcomes of performing elective "off-site" PCI (angioplasty without on-site surgical backup), these new data, culled from the **National Cardiovascular Data Registry** (NCDR), may be persuasive enough to convince guideline-writing groups to reassess some of their advice. Currently, the **ACC/AHA/SCAI** 2005 guidelines give elective off-site PCI a class 3 indication—ie, don't do it—and primary angioplasty is a class 2b, meaning "probably reasonable."

"It's a catch-22 for hospitals. To have a lot of experience to do these very sick patients, they should also, possibly, have a more reasonable volume of elective angioplasties," Brindis explained. Other studies have consistently shown that higher numbers of straightforward, nonemergency procedures track well with improved success rates for emergency and higher-risk off-site procedures, he explained. Hub-and-spoke models of care, where operators spend some time in the smaller off-site centers and some time in the larger, high-volume PCI centers, has also been shown to yield better patient outcomes.

"We've actually had some outside people doing some analysis of our paper and . . . they think that, based on the data we have collected, the clinical-practice-guidelines team should look long and hard about changing their class 3 recommendations and making them either a 2a or 2b" for elective PCI, Brindis commented. That said, he continued, "I can't anticipate what they are actually going to do, and I suspect they are going to wait for C-PORT Elective before making their final recommendations."

## Comparable success and survival

The NCRD analysis, led by **Dr Michael A Kutcher** (Wake Forest University School of Medicine, Winston-Salem, NC), looked at clinical characteristics and outcomes for all PCI cases reported to the NCDR CathPCI registry between January 2004 and March 30 2005—a total of 308 161 patients from 465 hospitals. Of these, 60 institutions had no surgical backup on-site, and 8736 patients underwent PCI at these facilities during the study period.

## Dooming them to an early death or a life of CHF care is no longer an acceptable option.

According to Kutcher, Brindis, and colleagues, unadjusted procedural success rates were higher for facilities with on-site surgical backup, but this was largely driven by the fact that the bulk of off-site PCI centers focus on primary PCI, with higher-risk patients, slightly skewing the data. However, after adjusting for a wide range of risk-related factors, investigators saw no differences in mortality between on-site and off-site PCI centers and no differences between these groups when the analysis looked just at primary PCIs or elective PCIs. Indeed, risk of emergency surgery was actually statistically higher at centers with on-site surgery.

"Despite lower annual PCI procedural volumes and more patients presenting with MI subsets, off-site PCI facilities reporting to the NCDR CathPCI Registry had similar rates of procedural success, morbidity, emergency surgery, and risk-adjusted mortality when compared with on-site PCI centers," the authors conclude. "These results persisted whether PCI was performed as primary therapy for STEMI or in a less urgent nonprimary PCI setting."

Speaking with **heartwire**, Brindis pointed to several other interesting findings from the analysis: "When you actually look at the composition of the patients, the off-site facilities actually have a higher portion of patients in the setting of AMI, patients who are actually sicker, so it must be that these centers *are* meeting the needs of society, in terms of delivering primary angioplasty in the setting of STEMI, hopefully in a more timely fashion," he said. "And then the other interesting piece of data: I found it fascinating that the off-site programs actually had quicker door-to-balloon times than the on-site-surgery sites. It's kind of a comment on the commitment to quality of the centers embarking on this endeavor."

## Politics and numbers

Brindis acknowledged that there are competing pressures at play in the sometimes-acrimonious debate over the proliferation of centers offering off-site PCI: centers wanting to open PCI programs accuse larger regional centers of hogging all the patients, while the primary PCI centers fear not only that they will lose patients and the revenue they bring but also that patients will end up being treated by low-volume operators/centers and receive substandard care.

There is "some truth" to both arguments, Brindis told **heartwire**. "The debate is best decided, like most things in medicine, when it is focused on what's best for patients, [and] for any particular local community.

"What we don't want is for a small hospital to embark on doing PCI without on-site surgical backup, with small volumes of patients, when there are excellent centers in the immediate vicinity, with on-site surgical backup and excellent outcomes; that's not in anyone's best interests," he continued. "I'm hoping that, as the strategy becomes more widespread, hospitals will do this in a responsible manner and that we can focus on the needs for the patient, first."

Blogger and forum monitor for **theheart.org**, **Dr Melissa Walton-Shirley** (TJ Samson Community Hospital, Glasgow, KY) has argued passionately, for years, for expansion of off-site PCI facilities for rural and underserved communities. "Once again, this analysis confirms that for physicians who serve infarcting patients with no other options for revascularization, based on sound medical data reporting, we have a right to deliver timely and competent care without impediment from opposing state governments or hospital associations," she told **heartwire**. Her hospital is one of just a handful of institutions providing primary PCI without on-site surgery—but not elective PCI—as part of a pilot study in the state of Kentucky.

"The staggering economic implication of the NCDR data should attract the attention of any government leader with implications for savings in transfer costs, length of stay, readmit costs, and the decrease in congestive-heart-failure care that can occur with timely revascularization," she continued. "It's time for the culture of American intervention to change permanently in the best interest of our patients, who are helpless to help themselves at a time when they are most vulnerable. Dooming them to an early death or a life of CHF care is no longer an acceptable option. We should use these data to help us treat our AMI patients as we would want to be treated if we found ourselves in a similar situation."

Also commenting on the study for **heartwire**, **Dr Timothy Henry** (Abbott Northwestern Hospital, Minneapolis, MN) acknowledged that the paper supports a role for offsite PCI, but only if "done properly."

"If you pick the right place and the right cases, PCI can be done either as primary PCI or electively in a very safe way. Our group is actually doing PCI electively in a place close to use—it's not our first choice, and I don't even know if it's the best choice for patients, but I think if you're very careful, you can actually do this selectively."

He continued: "The paper itself made the point that the findings 'should not be extrapolated to encourage the widespread proliferation of PCI programs without surgery onsite to fulfill a political or economic agenda'—I agree with that. This doesn't mean we should put cath labs in every hospital, because there is still a strong message that volume matters, and surgical backup is a surrogate for volume."

Henry also pointed out that registry data are inevitably subject to selection bias—hospitals that are not following recommendations or getting good results are likely not well represented in the sample. "These are the hospitals that are sending their data in, hospitals that are committed to doing it the right way, which is an important point."

*The authors disclose no specific conflicts of interest, although several currently work at hospitals offering off-site PCI; Walton-Shirley has no relevant conflicts of interest.*

## Source

1. Kutcher MA, Klein LW, Ou FS, et al. Percutaneous coronary interventions in facilities without cardiac surgery on site: A report from the National Cardiovascular Data Registry (NCDR). *J Am Coll Cardiol* 2009; 54:16-24.

#### Related links

- [Off-site PCI comparable to PCI with on-site backup](#)  
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[Acute Coronary Syndromes > Acute coronary syndromes; Dec 12, 2007]
- [New PCI guidelines released by AHA, ACC, SCAI](#)  
[Interventional/Surgery > Interventional/Surgery; Nov 18, 2005]
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