Relationships between the Amount of Colon Cancer Surgery a Hospital Performs and Patient Outcomes

What is the problem and what is known about it so far?
Colon cancer occurs in the large intestine (colon). Treatment and outcome depend on the cancer stage. Surgery called colon cancer resection usually cures stage I colon cancer. Patients with stage II or III colon cancer need surgery for a chance to be cured, and patients with high-risk stage II cancer or those with stage III cancer also receive cancer-fighting drugs (chemotherapy). Treatment of stage IV cancer rarely leads to a cure, but it may help patients live longer than they would without treatment. How well patients with colon cancer do may depend a lot on the quality of the surgery they receive. Some studies suggest that patients who have colon cancer surgery at hospitals that perform many of these procedures (high-volume hospitals) live longer than patients who have surgery at hospitals that do fewer procedures (low-volume hospitals). However, these studies have looked only at deaths from any cause rather than at deaths specifically from colon cancer or at the frequency with which cancer returns after surgery (recurrence).

Why did the researchers do this particular study?
To see whether patients who have colon cancer surgery at high-volume hospitals have fewer cancer recurrences or deaths specifically due to colon cancer than patients who have surgery at low-volume hospitals.

Who was studied?
3161 patients with high-risk stage II or III colon cancer who were participating in a study of chemotherapy after colon cancer resection.

How was the study done?
The researchers used Medicare data to classify each hospital at which a study patient had surgery as high, medium, or low volume. Next, they compared the percentages of patients at high-, medium-, and low-volume hospitals who were still alive 5 years after surgery, who were living but had colon cancer recurrence, and who had died specifically of colon cancer. All of these comparisons accounted for differences in age and other patient factors that could influence outcomes.

What did the researchers find?
Five years after colon cancer resection, 63.8% of patients at low-volume hospitals and 67.3% of patients at high-volume hospitals were still alive. However, the percentages of patients who had colon cancer recurrence or who had died of colon cancer were not different for patients from high- and low-volume hospitals. The higher death rates of people who had surgery at low-volume hospitals were due to conditions unrelated to colon cancer or to colon cancer surgery.

What were the limitations of the study?
Since all of the patients received chemotherapy as part of a study, this study cannot tell us whether patients cared for at high-volume hospitals get more appropriate overall colon cancer treatment than those at less experienced hospitals.

What are the implications of the study?
Differences in cancer-related outcomes may not explain the shorter survival of patients with colon cancer who have their procedures at hospitals that do few of these procedures compared with patients at hospitals that do many. Patients who have surgery at less experienced hospitals may just be sicker than patients at more experienced hospitals.