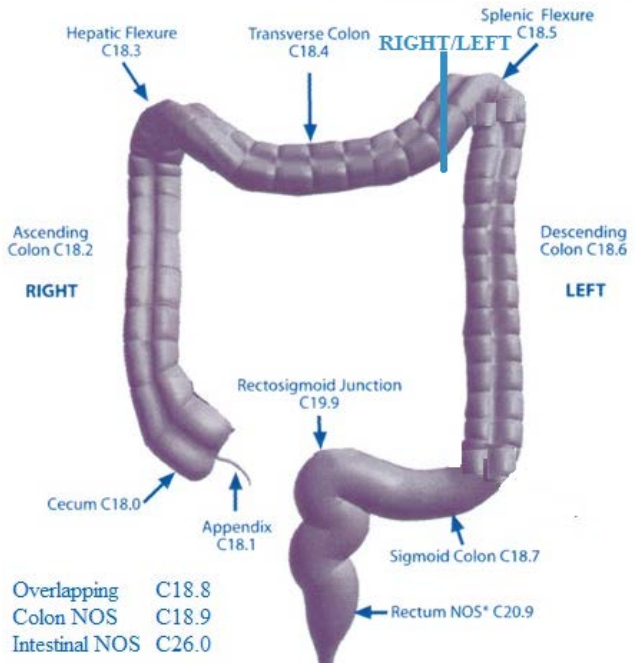
Why Collect Subsite of Origin for Colorectal Cancer that Already Metastasized?

John W. Morgan, DrPH, CPH[1] and Maheswari Senthil, MD, FACS[2]

[1]Professor Loma Linda University School of Public Health, Epidemiologist Regions 4, 5, 7 & 10 Cancer Registry of Greater California.
[2]Associate Professor Loma Linda University School of Medicine, Director Peritoneal Surface Malignancy Program, Cancer Liaison Physician, Medical Informatics Liaison Physician

Colorectal cancers having origins in the cecum through the transverse colon (C18.0-C18.4) are classified as right-sided colon cancer, with those from the splenic flexure to the rectum (C18.5-C18.7, C19.9 and C20.9) classified as left-sided (Figure 1). Using this distinction, approximately 56% of colorectal cancers in California are classified as left-sided, with about 40% having origins in the right colon. The remaining 4% of colorectal cancers defy classification as either left or right (C18.8, C18.9 and C26.0).

Figure 1. Anatomic distinction between right and left colorectal cancer.



When used in patients also receiving systemic chemotherapy, targeted biologic therapy using bevacizumab and cetuximab (BT) represents an additional mechanism that can target metastatic colorectal cancer by blocking development of blood vessels that nourish the growing cancer. Recent clinical trials have shown that BT administered to metastatic

colorectal cancer patients can improve survival for some. While this news is promising, cancer treatment is seldom as simple as it first appears. Current evidence suggests that use of BT among metastatic colorectal cancer patients, who also received systemic chemotherapy, only improves survival among patients with left-sided colorectal cancer; there is little evidence of survival improvement among patients with right-sided cancer.

While this finding is perplexing, it is not entirely without precedent. Embryology studies have long shown that the bowel forms from two distinct cell lines, with two segments joining in the left transverse colon early during gestation. Differences in these cell lines of origin guarantee some genetic differences between cancers with origins in the right and left bowel. Furthermore, these cell line differences may help to explain why people who inherit one or more of five defective DNA repair genes experience increased risk of cancer in the right, but not the left bowel. Researchers at Loma Linda University and the Cancer Registry of Greater California are conducting research using statewide California SEER data that seeks to reveal reasons for the difference in survival between patients having left *versus* right metastatic colorectal cancer that was treated with BT. This research holds promise for further improving survival among colorectal cancer patients and for improving other targeted cancer therapies. This research would not be possible without the timeless effort, attention to details and documentation provided by cancer registrars and other cancer registry staff throughout California. Together, “we are winning the war on cancer.”