TABLE 99-3 CANCER INCIDENCE AND MORTALITY IN RACIAL AND ETHNIC GROUPS, UNITED STATES, 2006–2010

Site	Sex	White	Black	Asian/Pacific Islander	American Indian[a]	Hispanic
Incidence per 100,000 Population						
All	M	548.1	601.0	326.1	441.1	426.8
	F	436.2	395.9	282.6	372.0	330.8
Breast		127.3	118.4	84.7	90.3	91.1
Colorectal	M	50.9	62.5	40.8	51.7	47.3
	F	38.6	46.7	31.0	42.7	32.6
Kidney	M	21.6	23.0	10.6	30.6	20.5
	F	11.2	12.2	5.1	17.5	11.5
Liver	M	8.7	14.9	21.3	17.8	11.5
	F	2.9	4.4	8.0	8.0	6.9
Lung	M	82.9	94.7	48.8	70.2	45.9
	F	57.1	50.7	27.6	41.3	26.5
Prostate		138.6	220.0	75.0	104.1	124.2
Cervix		7.2	10.3	6.7	9.7	10.9
Deaths per 100,000 Population						
All	M	217.3	276.6	132.4	191.0	152.2
	F	153.6	171.2	92.1	139.0	101.3
Breast		22.7	30.8	11.5	15.5	14.8
Colorectal	M	19.2	28.7	13.1	18.7	16.1
	F	13.6	19.0	9.7	15.4	10.2
Kidney	M	5.9	5.7	3.0	9.5	5.1
	F	2.6	2.6	1.2	4.4	2.3
Liver	M	7.1	11.8	14.4	13.2	12.3
	F	2.9	4.1	6.0	6.1	5.4
Lung	M	65.7	78.5	35.5	49.6	31.3
	F	42.7	37.2	18.4	33.1	14.1
Prostate		21.3	50.9	10.1	20.7	19.2
Cervix		2.1	4.2	1.9	3.5	2.9

[a]Based on Indian Health Service delivery areas.

Abbreviations: F, female; M, male.

Source: From R Siegel R et al: Cancer statistics, 2014. CA Cancer J Clin 64:9, 2014.

(Table 99-5). Older patients and those with a Karnofsky performance status <70 or ECOG performance status ≥3 have a poor prognosis unless the poor performance is a reversible consequence of the tumor.

Increasingly, biologic features of the tumor are being related to prognosis. The expression of particular oncogenes, drug-resistance genes, apoptosis-related genes, and genes involved in metastasis is being found to influence response to therapy and prognosis. The presence of selected cytogenetic abnormalities may influence survival. Tumors with higher growth fractions, as assessed by expression of proliferation-related markers such as proliferating cell nuclear antigen, behave more aggressively than tumors with lower growth fractions. Information obtained from studying the tumor itself will increasingly be used to influence treatment decisions. Host genes involved in drug metabolism can influence the safety and efficacy of particular treatments.

Enormous heterogeneity has been noted by studying tumors; we have learned that morphology is not capable of discerning certain distinct subsets of patients whose tumors have different sets of abnormalities. Tumors that look the same by light microscopy can be very different. Similarly, tumors that look quite different from one another histologically can share genetic lesions that predict responses to treatments. Furthermore, tumor cells vary enormously within a single patient even though the cells share a common origin.

MAKING A TREATMENT PLAN

From information on the extent of disease and the prognosis and in conjunction with the patient's wishes, it is determined whether the treatment approach should be curative or palliative in intent. Cooperation among the various professionals involved in cancer treatment is of the utmost importance in treatment planning. For some cancers, chemotherapy or chemotherapy plus radiation therapy delivered before the use of definitive surgical treatment (so-called neoadjuvant therapy) may improve the outcome, as seems to be the case for locally advanced breast cancer and head and neck cancers. In certain settings in which combined-modality therapy is intended, coordination among the medical oncologist, radiation oncologist, and surgeon is crucial to achieving optimal results. Sometimes the chemotherapy and radiation therapy need to be delivered sequentially, and other times concurrently. Surgical procedures may precede or follow other treatment approaches. It is best for the treatment plan either to follow a standard protocol precisely or else to be part of an ongoing clinical research protocol evaluating new treatments. Ad hoc modifications of standard protocols are likely to compromise treatment results.

The choice of treatment approaches was formerly dominated by the local culture in both the university and the practice settings. However, it is now possible to gain access electronically to standard treatment protocols and to every approved clinical research study in North America through a personal computer interface with the Internet.[1]

[1]The National Cancer Institute maintains a database called PDQ (Physician Data Query) that is accessible on the Internet under the name CancerNet at *www.cancer.gov/cancertopics/pdq/cancerdatabase*. Information can be obtained through a facsimile machine using CancerFax by dialing 301-402-5874. Patient information is also provided by the National Cancer Institute in at least three formats: on the Internet via CancerNet at *www.cancer.gov*, through the CancerFax number listed above, or by calling 1-800-4-CANCER. The quality control for the information provided through these services is rigorous.