


 UNY dialogue

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an educational exchange on underwriting issues

 authored by Legal & General America's medical and underwriting specialists
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"All of the pathology reports are essential in order to arrive at an accurate assessment of risk and give it an appropriate rating."

Cancer is a group of diseases characterized by unregulated multiplication of cells. This unregulated growth of cancer cells consumes space and resources at the expense of the patient, which may result in organ dysfunction or even death. Each cancer is unique in its behavior and prognosis. This is determined by the organ of origin (stomach, lung etc) and the tissue of origin (e.g., carcinoma of the stomach originates from the epithelium or the lining cells while leiomyosarcoma of the stomach originates from the muscle in wall of the stomach). Therefore, it is customary to name a cancer based on the tissue of origin and the organ of origin as follows: adenocarcinoma of the stomach, adenocarcinoma of the breast or leiomyosarcoma of the stomach, etc. Additionally, the prognosis of a given cancer is determined by the extent of spread (stage) of the cancer and aggressiveness (grade) of the cancer.

Cancer is suspected when there is a presence of one of the following symptoms: unusual bleeding (e.g., blood in the urine or stools), unexplained pain, a new lump or a lump that is changing in size or character, change in bowel habits and loss of appetite or loss of weight. In the presence of suspicious signs or symptoms studies such as blood tests (including tumor markers), chest x-rays, bowel x-rays, CT scans and MRIs are performed in order to make a diagnosis. This may be supplemented by endoscopy (e.g., colonoscopy or cystoscopy) in order to determine the exact cause of symptoms and to arrive at a diagnosis. These studies are also useful in determining the extent of spread (stage) of the cancer.

A definitive diagnosis of cancer involves obtaining a piece of tissue from the suspected site; this is referred to as a biopsy. A biopsy may be performed using a needle either by aspirating the tissue (e.g. lung) or obtaining a core or cylinder of tissue (e.g. prostate) or by surgically removing a piece of the tissue (e.g. breast). The tissue is processed and evaluated by a pathologist and the findings are detailed in the pathology report.

The pathology report contains information about the size of the cancer, whether it is encapsulated or infiltrating into the surrounding tissue, invading the lymphatic channels or blood vessels and whether it has spread to the lymph nodes. Further, it enables us to determine the exact type of cancer and provides us with information about the aggressiveness (grade) of the cancer. A pathology report is issued every time a piece of tissue is removed from the patient. Therefore, there may be more than one pathology report representing tissue removed during the different phases of diagnosis and treatment for the same cancer. All of the reports are essential in order to arrive at an accurate assessment of risk and apply an appropriate rating.

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A more extensive review of the pathology report is available at

<http://www.cancerguide.org/pathology.html>

Premalignant tumors (carcinoma in-situ) are tumors that are incapable of spreading, at this stage, as they do not have access to the lymphatic system or blood supply. If not removed, they will become infiltrative or invasive cancers that are overtly malignant and have the capacity to spread. Premalignant tumors also indicate that the particular organ has the propensity to produce malignant tumors in the future. Ductal carcinoma in-situ (DCIS) of the breast, lobular carcinoma in-situ (LCIS) of the breast, cervical carcinoma in-situ (CIN) and prostate carcinoma in-situ (PIN) are all premalignant tumors. Transitional carcinoma in-situ of the bladder is an exception to this rule; it is a highly malignant and is treated by radical cystectomy (removal of the bladder and surrounding tissues).

All malignant tumors have the capacity to spread the moment they become infiltrative or invasive cancers; this propensity to spread increases as the cancer grows. The growth rate of cancer is expressed as doubling time (the time taken for the tumor to double in volume); cancers with a shorter doubling time have a worse prognosis. The doubling time of cancers varies by organ of origin and the tissue type. For example, carcinoma of the lung has doubling time measured in days to months as compared to an average prostate cancer, which has a doubling time of two to three years. Even within the same type of cancer there is variability in doubling time. For example, a well-differentiated or low-grade prostate cancer doubles in volume in four to five years, as compared to poorly differentiated cancer or high-grade prostate cancer, which doubles in volume in only a few months. The variability of doubling time within the same type of cancer determines the aggressiveness of the cancer or the grade. Most cancers are graded as well-differentiated or low-grade, moderately-differentiated or intermediate-grade and poorly differentiated or high-grade. Another grading system in use grades I to IV; grade I corresponds with low-grade and grade IV with high-grade. Still others have their own individualized grading systems such as Gleason's grade for prostate cancer.

Cancer spreads by increasing in size, infiltrating surrounding tissues, spreading cells through the lymphatic channels to the lymph nodes and through the blood to distant organs such as lung, liver or brain. The extent of the spread of cancer at the time of diagnosis is termed by the stage, which also affects the outcome of a cancer. A frequently used staging system uses stages I to IV with stage I being the best and stage IV the worst. Staging systems for each type of cancer has evolved separately over the decades; as a result, most cancers have their own unique staging system such as

Duke's stages for colorectal cancer or AUA stages for bladder cancer. The TNM system was devised to reduce confusion and make staging easier to comprehend: T refers to tumor size (Tis for in-situ and T1 to T4), N for extent of lymph node involvement with cancer (N0 to N3)

For a more detailed explanation of staging, visit The National Cancer Institute website at

<http://www.cancer.gov/cancertopics/factsheet/Detection/staging>

and M for metastasis or spread of cancer to distant organs (M0 to M1). The number following the letter indicates the severity of each category.

Early detection is essential for a beneficial outcome when treating cancer. Therapy for cancer varies with the type of cancer, stage and grade. In general, surgery, chemotherapy, radiation therapy and immunotherapy are used alone or in combination depending on the situation. Cancer therapy has significant side effects; some are long term and even life threatening. Regular follow-up is essential to detect recurrence and monitor for side effects. The term remission is used when all cancer has been destroyed by therapy. The duration of remission is calculated from the point of completion of all therapy. Risk of recurrence of the cancer decreases as the duration of remission increases.

The pathology report is the **starting point** when underwriting a cancer case. As mentioned before, in some situations there may be more than one pathology report for the same cancer (i.e. a report for the biopsy and another one for the definitive

surgery). In other situations (e.g., lymphoma) it is customary to get a second opinion on the same specimen from a pathologist with special expertise on the particular cancer. It is the expert's opinion that is used in determining therapy and prognosis. The pathology report provides information on the organ of origin, type of cancer and the grade. This report also indicates the size, whether the capsule is intact or the cancer is infiltrating into surrounding tissues and the extent of lymph node involvement, and thereby would help determine the stage or extent of disease. Additional studies such as lab tests, X-rays and scans are needed to ascertain the presence of distant spread.

Finding the actual rate in the manual is straightforward once the organ of origin, type of cancer, stage and grade have been determined. The manual will indicate the required period of postponement before an offer can be made and also the favorable and the unfavorable factors for that particular cancer, some of which may alter the rating.

Assembling all the information needed for underwriting requires that medical records be obtained from the appropriate sources. Records must be up to date to ensure that there is no evidence of cancer recurrence, as well as to detect treatment-related complications such as heart failure, lung disease and second malignancies. The medical oncologist and/or radiation oncologist are the best sources for records that contain pathology reports and staging information. When surgical therapy is the main form of treatment, the surgeon would have the pathology and operative report. In some cases, the hospital records need to be obtained for the specific information required to classify the risk.

To find out more about cancer, go to these websites

Organization	Site Location
National Cancer Institute	http://www.cancer.gov/
Abramson Cancer Center of the University of Pennsylvania	http://www.oncolink.com
American Cancer Society	http://cancer.org/docroot/home/index.asp
Medical dictionary	http://www.nlm.nih.gov/medlineplus/mplusdictionary.html