On February 24th, I spoke on the phone with Dr. Rick Pazdur, Director of the Office of Hematology and Oncology Products (OHOP) at FDA, about some of the present opportunities and challenges in cancer research and how the quickly changing landscape affects communications.

**GARRETT:** Thank you for agreeing to do this. **My first questions are very broad:** As the man overseeing oncology drug approval, what are you most excited about right now in cancer science and what do you see as the biggest stories in the next couple of years?

**PAZDUR:** In the past five to six years we’ve seen better, different kinds drugs developed in oncology than when I initially entered the field more than 30 years ago. We are seeing a change from the development of conventional cytotoxic therapies to development of drugs in two major fields that have a stronger scientific rationale for their use. The first field—immunological therapies, including checkpoint inhibitors, PD-1 and PDL-1 drugs—are treatments that “take the brakes off” the immune system. The second field includes the drugs that target specific molecular pathways. In general, these drugs have much higher response rates than we have observed with conventional cytotoxic chemotherapy drugs. These drugs have demonstrated in many cases very robust and clinically meaningful effects on overall survival.

These newer drugs are the result of decades of basic science research and underscore the importance of having a sound and strong scientific rationale to serve as the foundation for drug discovery.

I look at this as a very bright time in oncology. We simply have drugs that work better. Our jobs as drug regulators at FDA are easier. We are no longer arguing whether the drug should be approved, but how we can rapidly approve the drug to make it available to the American Public. Many of these drugs offer advantages to patients who have had few therapeutic options.

**GARRETT:** Does this mean that the sickest patients are benefiting the most from the oncology drugs that are being developed and approved today?

**PAZDUR:** Typically, drugs are first developed for refractory disease settings—for patients who have exhausted therapeutic options. When we observe impressive clinical activity, these drugs are rapidly advanced to clinical trials examining their effects in earlier disease settings, including the adjuvant therapy of malignant diseases where improving cure rates may become a therapeutic goal.

**GARRETT:** With new drugs coming on line so quickly, do you see information gaps for health practitioners caring for cancer patients?

**PAZDUR:** Yes. The pace of drug development is rapid, making it very difficult for practitioners, as well as patients, to keep track of recent advances. When I entered the field of medical oncology in the late...
1970s, there were approximately 35-40 oncology drugs. In the last two years, we’ve approved between 12 and 15 drugs per year. These are novel therapies, and these numbers demonstrates how rapidly the field is progressing. Many of these drugs have unique toxicities that have not been previously managed by oncologists. With this rapid pace, I think it’s very difficult for many to have an understanding of the basis for the drug’s approval, the efficacy of these new drugs, and their toxicities.

Many oncologists who were trained years ago did not receive training in an era where tumor genomics were an integral part of clinical practice. We have drugs that have been approved for specific mutations and are approved with companion diagnostics to identify these molecular aberrations. These companion diagnostic or genetic tests performed on tumor specimens select patients who are most likely to benefit from the new drug. The years ahead may require a “re-tooling” or education of the clinical workforce, including oncologists and allied health professionals. In general, FDA needs to increase its activities in communication and education. Our oncology office, Office of Hematology Oncology Products (OHOP), has been working to develop programs with professional societies, including AACR, ASCO and ASH, to enhance our communication with oncologists regarding newly approved drugs. The dissemination of new information that is rapidly increasing is going to become a greater challenge—not less of a problem—as oncology drug-prescribing becomes more sophisticated with regard to selecting patients who will most likely benefit through genomic testing, as well as managing unique toxicities.

**GARRETT:** Do you have any thoughts about clinical trial accrual and how we get information about trials out to patients and providers who need it?

**PAZDUR:** It’s estimated that approximately five percent of American patients accrue to clinical trials. A question we should ask is the reasons why patients are not entering clinical trials. Is the clinical system excessively bureaucratic, providing barriers for physicians from putting patients on trials? Do physicians and patients view their participation in clinical trials as answering clinically meaningful questions?

What is the number of cancer patients in the United States who should be entered on clinical trials? Should it be 10, 20, 50, or 80%? No one has the answer, other than “more is better.” We often point to pediatric oncology trials and the high participation rate in clinical trials. Most children are treated in children’s hospitals in academic settings. Most oncology care for adults is in the private practice setting.

Everyone agrees that we all want greater participation of patients on clinical trials. Rather than focusing on a number or percentage of patients who may participate, we should begin with what are the critical questions that are not being answered and how can we expedite the answers to these questions.

**GARRETT:** Given that we are in a bright time in oncology, what’s most important to tell the non-scientifically trained but highly interested public?

**PAZDUR** We need to ensure patients have the proper understanding of the risk and benefits of new drugs and how these drugs fit into conventional standard treatments for a specific disease. When speaking to lay audiences, journalists tend to have limited time segments where they lack sufficient time to present the full picture of a new therapy.
GARRETT: As you know, last spring we introduced the NCI-MATCH Trial at ASCO and launched it in the summer. This launch followed Lung-MAP and ALCHEMIST, and it precedes pediatric MATCH.

Do you have any thoughts about how the Lung-MAP, ALCHEMIST and NCI-MATCH trials are publicly perceived, in particular by patients and their families who hope they will benefit from precision oncology?

PAZDUR: We need to emphasize to patients that these are clinical trials. We don’t yet know the results of these trials. No matter how alluring the basic science may be and how hopeful investigators may be, the proof resides in the trial’s results. We’re doing the trials to develop the answers that are needed for potential treatment strategies—that is, examining molecular targets and then matching drugs to these targets.

GARRETT: Similarly, any thoughts on how we put immunotherapy into perspective or the optimism about immunotherapy into the right perspective?

PAZDUR: Here again, we’re early in the development of these treatments. There are many questions that still need answers. Although many of the immunotherapy trials have shown impressive effects on overall survival in difficult-to-treat diseases, such as lung cancer and melanoma, we still don’t know which patients may optimally respond to a given drug.

There’s also competition among companies developing immunotherapies in the same class. They may have different drug approval strategies. Also, sponsors may have different strategies for measuring and developing biomarkers to optimally select patients who may derive the greatest benefit. I would like to see a greater degree of collaboration in the pharmaceutical industry with the development of these drugs, especially in biomarker development.

GARRETT: To your point, in speaking about his Moonshot Initiative, the Vice President talks about breaking down silos. Are there any particular silos, other than the one you just mentioned, that you think need to be addressed?

PAZDUR: Oh yes!

GARRETT: So you’re glad I asked this question...

PAZDUR: “Breaking down silos” applies not only to those silos that exist between companies in the private sector or silos that exist between investigators and companies, but also silos that exist in the Federal government. I would like to see greater collaboration, communication, and transparency among Federal agencies, specifically FDA, CMS, and NCI. We routinely have monthly teleconferences with our regulatory counterparts in Europe, Japan, Canada, and Australia, to promote understanding of upcoming regulatory actions. I would like to extend this same transparency to our sister agencies in HHS. This may require some re-tooling of confidentiality agreements or MOUs, but this enhanced communication would foster greater understanding of our approvals and expedite cancer care. It would help patients with cancer.
GARRETT: This has been fascinating and very helpful. Thank you, I really appreciate your time.

PAZDUR: You’re welcome.