Yale CANCER CENTER *answers*

WNPR Connecticut Public Radio

Hosts

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The Role of Oncology Pharmacists for Patients

Guest Experts:
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Welcome to Yale Cancer Center Answers with Drs. Ed Chu and Francine Foss, I am Bruce Barber. Dr. Chu is Deputy Director and Chief of Medical Oncology at Yale Cancer Center and he is an internationally recognized expert on colorectal cancer. Dr. Foss is a Professor of Medical Oncology and Dermatology and she is an expert in the treatment of lymphomas. If you would like to join the conversation, you can contact the doctors directly. The address is canceranswers@yale.edu and the phone number is 1888-234-4YCC. This evening Ed welcomes Nancy Beaulieu and Wendelin Nelson. Nancy and Wendelin are Board Certified Oncology Pharmacists at Yale Cancer Center.

Chu Nancy, I suspect many of our listeners don't realize that there's specialized training in order to become an oncology pharmacist. Can you tell us a little about what the training process involves?

Beaulieu In order to be an oncology pharmacist, first and foremost, you have to be a licensed pharmacist, which in the state of Connecticut requires six years of schooling and then from that point many of the pharmacy graduates go on to be oncology residents and that is an additional year of training that occurs postgraduate and focuses primarily on the entire oncology practice. From that, they can then go on to be Board Certified. In order to be a Board Certified Oncology Pharmacist, they have to meet certain criteria within their practice. Outside of being a licensed pharmacist, they have to have spent more than 50% of their time in an oncology practice setting for at least four years before they can even sit for this exam, or they can complete this oncology practice residency in addition to a year of practice in the field, and then they can take the exam. All Board Certified Oncology Pharmacists have to pass an initial comprehensive exam and then they have to maintain their certification through either continuing education or additional exams on every seven-year basis.

Chu Where can one get such specialized training?

Beaulieu Here at Yale we offer an oncology residency program and our program is a year long intensive training program where a pharmacist who wants to become an oncologist specialist spends that time focusing specifically in cancer care. For example, a great deal of time is spent on various cancer types and learning about specific therapies for those diseases. Additional training is also covered to cover related issues such as infectious disease and investigational clinical trials. Once an oncologist pharmacy resident has successfully completed this training, then they have gained sufficient experience and knowledge to practice independently as an oncology pharmacist.

Chu Obviously we have a program here at Yale, but where else in the state of Connecticut? If anyone is interested in becoming an oncology pharmacist are there other sites around the state? I know, for instance, when I have attended our inpatient service, we have had

3:14 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

pharmacy students from the University of Connecticut. Do they have a pharmacy program in oncology?

Beaulieu The school itself has many pharmacy students, but they do not specifically focus them on oncology. The students that you have seen on rounds are primarily students who have chosen oncology as a rotation, a short amount of time where they get exposed to a disease and then they may move on to cardiology next, or intensive care, as far as oncology residencies in the state of Connecticut….

Nelson That would be after the PharmD is completed and I believe we are the only oncology specialty program within the state of Connecticut. There are other programs throughout the country.

Chu It sounds like in my own field of medical oncology, where you go through the generalized training of general medicine, in order to then become a specialist, you have to do specialized cancer training and then be certified. It sounds like to become an oncology pharmacist one needs specialized certification and accreditation.

Beaulieu That is correct, however, there are some of us who did not actually do an oncology residency because they weren't offered back when we went to school. Many of us have done it through time and experience, more so then the residency option. Myself, for example, I have spent about 15 years primarily in just the oncology outpatient practice and from there I decided that I would put the time in to attempt to take the oncology board certification exam and pass that, and so that allowed me to use the terminology of a Board Certified Oncology Pharmacist without having a residency, and there are a number of us on staff who have gone that route.

Chu One question that we like to ask our guest experts, and I am going to throw this out to both of you, is what made you decide to go into oncology pharmacy, say as opposed to our traditional way of thinking about a pharmacist, like the pharmacist that I see quite frequently at the CVS Pharmacy on Boston Post Road in Orange? What made you decide to take a different route and get involved in taking care of cancer patients and become an oncology pharmacist? Wendelin, we can start with you.

Nelson My path to get to oncology was a fairly circuitous one. After college, I worked in a basic science research laboratory at Stanford University for a couple of years and then decided that I wanted a clinical career. So, I went back to school at the University of California, San Francisco and got my Doctor of Pharmacy degree. Initially, I worked in critical care, which I really enjoyed and actually pursued board certification in nutrition support, and to this day, I maintain a very keen interest in the impact of nutritional status on body composition and

6:15 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

overall health, certainly that affects cancer patients. Finally, however, I have come to my calling, which is oncology, and for the last 15 years I have worked with both adult and pediatric oncology, and bone marrow transplant patients. It's been a long path, but this is where I belong.

Chu Great, and Nancy?

Beaulieu I have been a long time employee of Yale-New Haven Hospital for almost 25 years now. I started as a UCONN pharmacy student and after I graduated I stayed on in multiple practice settings that included HIV, general medicine, and surgery and oncology was one of them. At that point in time, it was pretty clear there was a need for pharmacists to be devoted to oncology, and I was young and decided okay, I can take this on and started to focus right there. I became one of two primary pharmacists who covered oncology and within a few years of being here, we actually opened the bone marrow transplant inpatient unit, and that became my primary area. It was incredibly exciting to be young at that time and to be part of such a new developing program that was one of the few in our part of the country. Having worked on the inpatient unit for several years, a position then became open in the outpatient setting, which I decided to go for. This allowed me the chance to see the other side of cancer care, not just hospitalized patients, but those patients who came, got treated, and went home and back to their daily routine. And I think that's where I realized that this is where my satisfaction lies. That these are the people that I am here to serve and this is my love of this practice and this profession. I decided, like I said, to then pursue my certification and one of the things that myself, as well as the rest of us, talk about quite frequently is that one of our big reasons for staying focused here is because of the clinical trial programs and all the things that we get to learn on a daily basis. As you had mentioned, we choose not to go the route of being the CVS pharmacist, and part of that is because I think we all have this incredible desire for more knowledge on a daily basis, and that's what we get out of being here at Yale; we get to learn every single day, we are like perpetual students.

Chu I think also, and I know this is true when we speak to other health care professionals involved in taking care of cancer patients, but for whatever reason, taking care of cancer patients and their family members and loved ones is a very special experience that's extremely, speaking for myself at least, extremely rewarding, and I suspect both of you feel the same way as well.

Beaulieu Absolutely, you really feel like you are meeting a need and you are coming to help people at a time of true crisis in their lives, not only patients, but their families as well, and being able

9:37 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

to provide them with the best possible pharmaceutical care and drug education is extremely rewarding in this environment.

Chu We kind of take things for granted, but I guess one thing its important to emphasize to our listeners out there is that the whole field of medical oncology, cancer therapy, is actually still pretty young, in fact, medical oncology just officially got started somewhere in the mid to late 1980s. As you were saying Nancy, you really came at a time when oncology was just beginning. I'd imagine that just in the 15 to 20 years that you have been here at Yale, you have seen pretty significant changes and advances in cancer therapy, and in your own particular focus, cancer pharmacy.

Beaulieu Absolutely. And I laugh because when I got into the outpatient setting, I believe we had three clinical trials open, and now we have probably well over 70 to 80 clinical trials easily, at least treatment trials. Some of the additional advancements include patients getting treated more frequently. We see a lot of patients on a much more frequent time block and part of that has been the whole supportive care piece, and those are medications that help patients get treated more frequently because they address the side effects associated with it. We have patient's who take many oral medications for oncology right now and one of the things that I teach many students and one thing I always tell them, is that probably one of the most satisfying things is to see a drug go from a clinical trial study where you perhaps made the first dose in a human, to then being marketed and treating many-many patients with it, because you feel like you have had such a integral part in getting that drug from trial phase to actually being a treatment drug for cancer patients.

Chu It's interesting you say that because I am sure many people have heard of this antibody called Erbitux, also known as the Martha Stewart antibody initially approved to treat colorectal cancer and now used to treat head and neck cancer, but I think many people may not realize that in fact probably one of the very first patient's to have been tested with Erbitux was here at Yale Cancer Center.

Beaulieu Yes, I believe myself and my technician made that dose for that patient who was treated here many years ago, and now it's such a common drug used in the colorectal population on a daily basis.

Chu Its interesting, Erbitux started in what's called phase I clinical studies, and when we do these phase I studies and we don't have any idea what's going to happen, a lot of patients think well, I'm a guinea pig on something really experimental, but Erbitux highlights that you start

12:39 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

from a phase I testing and then all of a sudden, years later, it becomes part of every day standard care.

Beaulieu That's right, and its extremely rewarding to see drugs go to the point of being granted either FDA approval, or granted expanded indications, and also to see the evolutionary process where new combinations are tried within the context of a phase II or a phase III trial, many of which occur at Yale, and then we see the overall results of improved survival and improved patient outcomes and that's another aspect of this job that is extraordinarily rewarding.

Chu Wendelin, from your perspective what have been the most significant changes or advances in oncology pharmacy since you have been here at Yale?

Nelson I would agree with Nancy, over the last decade we have been using new supportive care drugs and I believe that maintaining the quality-of-life for patients and supporting them in terms of side effects, whether they are disease-related side effects or treatment related side effects, has made a huge impact on people's lives. I walk through the clinic and I don't see people who are in distress, I see people who are relaxed, reading a book, sometimes dozing. I see people coming to the clinic and receiving state-of-the-art treatment and yet they are very comfortable, and a lot of this has to do with recent advances in supportive care.

Chu A common misperception out there is that when someone is to get chemotherapy, that they are going to get sick, lose their hair, and feel lousy, and that is not really true.

Beaulieu For the most part, when people relate chemotherapy to what they know they think of the old movies where people have significant nausea, vomiting for days, and they stay in bed, but our patients are not like that at all. However, Wendelin and I, as well as my other pharmacists, work with these drugs every single day and we sometimes forget how frightening chemotherapy is to the average person and the average patient. So part of our role is to remove that fear. I sat last Friday with a woman while she was getting her chemo, she was fine with everything that had happened up until the point of where she was actually going to get her chemotherapy. So, I sat with her, we talked about the chemo, I stayed the entire time while she got her chemo, and it was essentially uneventful. She didn't really realize that it was over by the time it was over, and she was not afraid anymore. That's a huge satisfaction for me, but I think that's what we need to bring to our patient's, the fact that we know you are afraid, but we can lessen that fear through education and through the knowledge that we have of the drugs that we have to support you through this time.

Nelson Another thing patients bring back to us is communication. If things aren't going well, you

15:33 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

need to communicate with the physician, the nurse, and the pharmacist because there are other options in terms of ensuring a patient's comfort.

Chu At the other side of the break we will talk a little bit more about how the oncology pharmacy is really an integral part of the multidisciplinary team approach for taking care of cancer patients. You are listening to Yale Cancer Center Answers. I am here discussing the important role of the oncology pharmacist and oncology pharmacy support with Nancy Beaulieu and Wendelin Nelson from Yale Cancer Center.

Medical Minute *It's estimated that over 2 million men in the US are currently living with prostate cancer. One in six American men will develop prostate cancer in the course of his lifetime. Major advances in the detection and treatment of prostate cancer have dramatically decreased the number of men who die from this disease. Screening for prostate cancer can be performed quickly and easily in a physician's office using two simple tests, a physical exam and a blood test. Clinical trials are currently underway at federally designated comprehensive cancer centers like the one at Yale to test innovative new treatments for prostate cancer. The patient's enrolled in these trials and given access to experimental medicines not yet approved by the Food and Drug Administration. This has been a medical minute and you will find more information at yalecancercenter.org. You are listening to the WNPR Health Forum from Connecticut Public Radio.*

Chu Welcome back to Yale Cancer Center Answers. I am here in the studio this evening with Nancy Beaulieu and Wendelin Nelson, both Board Certified Oncology Pharmacists at Yale Cancer Center. Before the break we were talking a little bit about how the cancer pharmacist plays a very important role as part of this multidisciplinary team care approach.

Beaulieu An oncology pharmacist will review every chemotherapy order and this is a multiple step, very involved process. Every drug regimen is verified back to the primary literature or to the appropriate research protocol. In addition, at this time supportive care medications, drugs used to control symptoms and keep a patient comfortable, are also reviewed for appropriateness. At this point, we look over the most current patient laboratory data and we pay particular attention to issues relating to drug safety in terms of what we called pharmacokinetics. Pharmacokinetics is basically how the human body handles a drug that has been administered; for example, metabolism, or the chemical changing of a drug by the liver or the elimination of a drug from the body by the kidney. Specifically, we are paying attention to the functioning of the liver and the kidney and we compare that to what is known about the pharmacokinetic characteristics of each drug that is going to be administered. In addition, we review laboratory data for any signs of drug toxicity. If we have any concerns

18:37 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

or questions about any of these issues or how it may affect a patient, then we will discuss this directly with the patient's physician or with their nurse practitioner. Assuring that the drugs and the doses ordered by the physician are correct and complete and safe for each cancer patient is one of our primary responsibilities.

Chu One question that always comes up is how does one ensure that the doses of chemotherapy that a patient is getting are appropriate and correct? Obviously in the past there have been these horror stories, the one that comes to mind most vividly is a Boston Globe reporter who in fact got a massive overdose and unfortunately died. So, what are the safety measures that we have in place to hopefully avoid any of those potential complications?

Beaulieu Outside of the verification process that Wendelin spoke about, we know that we work with high-risk drugs everyday, we never forget that. That's the initial mindset that we go into our job with on a daily basis, that being said, we have multiple double check systems that are in place to ensure that through the manufacturing process the correct patient receives the correct drug, in the correct dose, at the correct time. We as pharmacists double check every single physician order that comes into us ensuring that what they have calculated is correct, ensuring that the patient is not getting treated to soon, ensuring that the dose is right for that particular patient, and as Wendelin mentioned, their lab function. Each drug dose is customized based on the regimen, the body size of the patient and the parameters. This requires many, quite often mathematical, calculations on our part. Those calculations are double checked by our technical staff that does the majority of the mixing, as well as double-checked by a second pharmacist. So, by the time the drug reaches the patient, at least four people have double-checked the amount that has been mixed in that drug against the order and that includes the oncology nursing staff as well. They also make sure that what we have given them is correct for that patient.

Sometimes, questions come about regarding the safety and drug combinations or even the use of herbal products. We add to the safety by knowing that we can speak to these issues with the patients to avoid potential drug interactions that may come up. Wendelin has done quite a bit of teaching with the GYN population in regards to herbal meds and what they can and cannot take safely while they are getting their chemotherapy to avoid potential harmful interactions. Every single day safety is our primary focus, and that being said, we are moving to new technologies that will even improve our safety. In general, pharmacy always thinks in terms of doses. We mix approximately 3000 doses of chemotherapy per month in the outpatient settings, and that ranges upwards to about 100 plus doses per day, per site of treatment, that averages into about 3600 doses of chemotherapy per year outpatient and an additional 15,000 doses of chemotherapy per year inpatient. Every single year we see that number increase. Currently, we have 12 clinical pharmacists that practice in the oncology setting. Five are currently Board Certified and three of our younger staff members are

22:28 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

actually going to sit for the exam coming this October. One of the 12 is actually a clinical professor from UCONN who works on the inpatient side, and one of them is our investigational pharmacist who is in charge of all the investigational studies within the hospital, but he is a Board Certified Oncology Pharmacist as well. Then we move to get our younger staff members, we have three going this year, and hopefully there will be more going next year as they spend more and more time. It takes a lot of preparation to sit for that exam and most people are not ready for that as soon as they have a year of practice.

Chu I am just curious, as we begin to think about moving into the new Smilow Cancer Hospital, which will open at the end of October, is there any anticipation that we will need additional oncology pharmacists to help support the hopefully increased patient volumes?

Beaulieu As of right now, actually starting today, I have a new pharmacist starting. I also have two additional positions that are being posted. We are ramping up for our move, which is going to occur within the next six months. At that point, we hope to gain some efficiency as well. We will have three sites of service essentially moving into one primary location. We may gain efficiencies, which will allow us time for our pharmacists to go spend more time with the patient's and do more education and more one-on-one focus teaching.

Chu Again, just to reemphasize the point as you are saying Nancy, that the oncology pharmacist not only plays an important part in preparing the chemotherapy, but also plays a very important role in helping to educate patients and their family members about the do's and don'ts, and what the patients need to look out for.

Nelson Also, right now we are actively involved in a process of revising a lot of our written materials that we provide to patients in terms of providing information about each specific agent whether it is a cytotoxic chemotherapy agent or supportive care medication. In addition, we are available to speak to family members and patients whenever they have specific questions. Also, a number of us periodically go to support groups and field questions in that environment also.

Chu Wendelin, I know you have also had a particular interest in clinical trials, can you tell our listeners out there how the oncology pharmacist is involved in the clinical trials process?

Nelson We are definitely an integral part of clinical trials. There is a great deal of regulatory paperwork that we have to maintain. We also attend initial initiation meetings to find out about the studies and we are responsible for reviewing each order, as patients come in, in terms of making sure that patients are qualified and that they meet specific criteria in terms of dosage modifications as the patients move to the clinical trial process.

25:48 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

Beaulieu The clinical trial process is a good example of the team approach for oncology. We work with the investigator, the sponsor, the clinical nurse, and the treatment nurse, everyone who is involved, very-very closely to assure that that patient who gets enrolled in that study has the best possible care and is fully informed from day one as to what the trial is about and assure that they take their medication correctly. We do a lot of counting of medications that come back to make sure the patient is taking it the way they are supposed to. That's a good example of a multidisciplinary function of the oncology pharmacist in that role.

Chu And the investigational new drugs that are being studied, are they separate from the kind of standard drugs that you use?

Beaulieu They are housed in the same room, but they are segregated. There are regulatory measures that force us to separate them in regards to being in double locked cabinets, completely away from the regular commercial products that are out in the market, even if it's the same drug being used for a study, they are definitely housed separately, but within a pharmacy.

Chu In the minute and a half that we have left in the show, can you give some thoughts as to where you see oncology pharmacy moving forward?

Beaulieu Our most obvious one is merging three areas into one. Location wise, we will all be in one place, which will be very positive for us. We are all very excited about moving into this new building. I think it offers us numerous opportunities to change our practice and to make it better for the patients and better for our staff. We will gain significant efficiencies. There is new technology out there, as I had mentioned, that incorporates bar coding of medications to ensure that the right drug goes in the right bag. We do that now on a manual basis, but this adds a technologic piece that will assure improved safety. We will be utilizing a new computer system and we hope that with some of these efficiencies that we will gain, the actual pharmacist can have increased patient contact, increased educational sessions, and essentially improve pharmaceutical support for all our patients.

Chu It's amazing how quickly time has gone. It was wonderful having both of you with me on the show this evening and we look forward to having you come back once you have moved into the Smilow Cancer Hospital to hear more about what's going on in the world of oncology pharmacy.

Nelson It was a pleasure speaking with you.

Beaulieu Thank you so much for having us.

28:36 into mp3 file http://www.yalecancercenter.org/podcast/sept1309-oncology-pharmacists-role.mp3

Chu You have been listening to Yale Cancer Center Answers and I would like to thank my guest experts for this evening, Nancy Beaulieu and Wendelin Nelson, for joining me. Until next time, I am Ed Chu from Yale Cancer Center wishing you a safe and healthy week.

If you have questions or would like to share your comments, go to yalecancercenter.org, where you can also subscribe to our podcast and find written transcripts of past programs. I am Bruce Barber and you are listening to the WNPR Health Forum from Connecticut Public Radio.