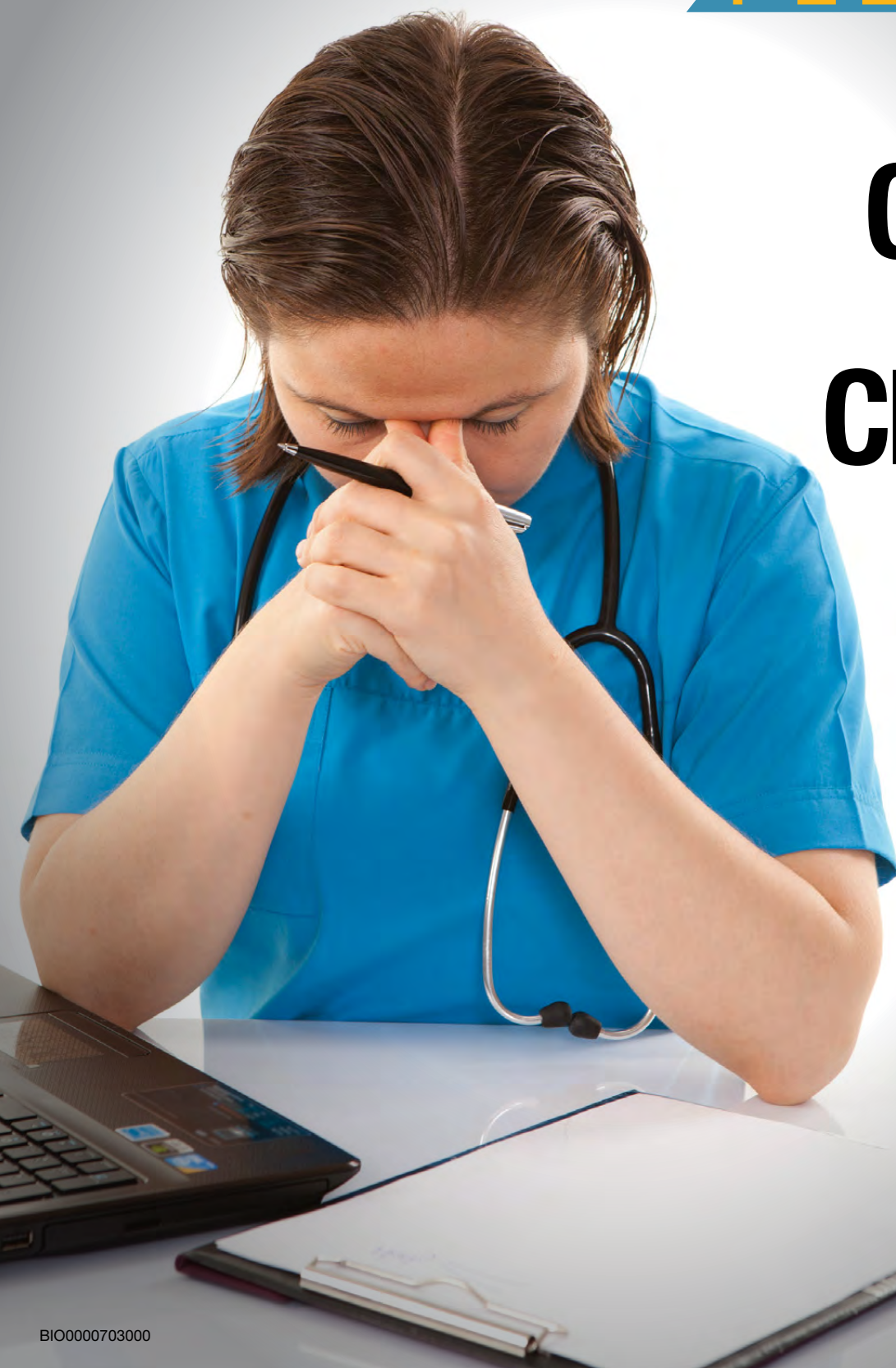


# ONCOLOGY

FELLOWS

## When Cancer Hits Close to Home



Public Speaking Tips  
for Fellows

How to Perform the  
Perfect Bone Marrow  
Biopsy

Loan Repayment  
Programs for Oncology/  
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*“ Thank you for providing this incredible resource. It has really helped us immensely! ”*

– **Benny, diagnosed age 52**  
*Squamous cell carcinoma*

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# When Cancer Hits Close to Home

*By Josephine Feliciano, MD*

When I confessed to my parents that I wanted to pursue a career in oncology, they both expressed concern about my ability to emotionally handle cancer patients and their families. My mother, a child psychiatrist, worried that I would get “too involved or too upset” treating cancer patients and could easily burn out.

During medical school, my mother had been diagnosed with localized breast cancer and had undergone a mastectomy with adjuvant chemotherapy. But by now surely she was cured and the disease was out of sight and out of mind. I hadn’t gotten too upset as a result of my mother’s initial diagnosis, even though I was 800 miles away at the time, so how would what was to come be any different?

## **Grim News**

On the week before my first interview for a hematology and oncology fellowship, however, my mother was diagnosed with metastatic breast cancer. She had hit that magical 5-year mark just 1 month prior and thought she was cancer-free from her original diagnosis when she felt “funny” as she slept on her left side, so she brought this to the attention of her doctor. The cancer had spread to her lungs and bones. I completely fell apart at the news and wasn’t sure how this diagnosis was going to change my future.

After much discussion with my family I decided to continue the interview process and complete the application for fellowship, for better or for worse. I am

## **“The experience of losing a loved one to cancer...fundamentally shaped my understanding of the concerns, needs, and fears of patients and their families.”**

not sure how I came across on my first interview 2 days after receiving the news but soon after I matched into a fellowship program.

The 3 years of my fellowship were spent trying to balance the duties of being a mother, wife, and physician, all while trying to help my parents maneuver to and from multiple medical facilities to obtain cancer care and ultimately make difficult decisions with them at the end of my mother's life, which came during the third year of my fellowship. The experience of losing a loved one to cancer during this pivotal time in my oncology training fundamentally shaped my understanding of the concerns, needs, and fears of patients and their families as they navigate the unpleasant realm of cancer diagnosis and treatment.

Most patients and families are filled with anxiety and fear prior to follow-up oncology visits, particularly when awaiting test results. When my mom first noticed a discomfort while lying on her side and thought she felt some axillary fullness, my entire family knew deep down that this represented recurrent, metastatic disease. Even though we knew what was about to come, we prayed that her CT scans would just show scar tissue, an infection, or

any other etiology for what my mom was feeling in her body. When my mother's first physician explained there were “shadows” on her lungs and bones, we were overcome with a second wave of fear and anxiety, and yet we again prayed that the biopsy results would show anything but cancer. I even tried to read my mom's CT scans and fought back the tears when I read “innumerable pulmonary nodules” and “multiple sclerotic lesions.” I was amazed that for every follow-up visit that my mom had, we could usually tell what the test results were going to show by how she was doing clinically. Yet the anxiety of seeing the results in print was overwhelming. Most of the time the anxiety we endured while awaiting a test result was far worse than the emotions we felt after receiving bad news.

Patients and their families often see only what they want to see; they look for any possible reason for a patient's decline other than the prospect of disease progression. My mom had done quite well clinically for about 2.5 years, until about May 2010. I was on my way to the NCCN conference when my dad called 3 times in a row and didn't leave a message. I knew that meant he was upset. My parents had found out that day that her follow-up CT scans showed 3

new lesions in her liver. She had otherwise been feeling well. Her doctors decided to switch chemotherapy. Although scared, I was not completely discouraged since she had responded to 1 chemotherapeutic regimen for those 2.5 years. However, in the following months, she began to lose weight and feel more fatigued. In retrospect, I believe that even as a physician who was trying to be the voice of reason, I looked for any explanation for her decline other than metastatic cancer (because that's what a good internist should do). I had decided that maybe it was depression.



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The screenshot shows the OncLive.com homepage. At the top, there is a navigation bar with categories like HOME, BONE METS, BREAST, GI CANCER, GU CANCER, HEAD & NECK, HEM-ONC, LUNG, SKIN, PROSTATE, PATHWAYS, NURSES, HENNESSY'S HIGHLIGHTS, PATIENTS, SUPPORTIVE CARE, WOMEN'S CANCER, TOOLS, MEETINGS, ONCLIVE TV, BLOGS, and PUBLICATIONS. A search bar and 'Login | Register' link are also present. The main content area features a large banner for 'The 2011 European Multidisciplinary Cancer Congress' with a video player and text: 'The 14th ESMO, 36th ESMO, 30th ESMO Congresses from the 2011 European Multidisciplinary Cancer Congress in Stockholm, Sweden, September 23-27.' Below this, there are sections for 'Oncology News/Insights: Should cancer care teams include dietary experts?' and 'Conference Corner: 3 Upcoming Physicians' Education Resource Conferences'. A 'VIEW THE LATEST POSTERS' section highlights 'Open access to the growing repository covering hundreds of international conferences...' with a 'View Posters' button and 'F1000 Posters Open Access' logo. The 'Latest Oncology Headlines' section includes articles such as 'Synchronous Radiotherapy With Chemotherapy Improves Local Control in Early Breast Cancer Patients' and 'Afibratecept Improves Survival in Metastatic Colorectal Cancer Patients'. At the bottom, there are 'Oncology Resources' including 'The JobCure Oncology Careers' and an 'Editors' Corner' with profiles for Andrew Pecora, MD and Maurie Markman, MD.

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**“In retrospect, I realize that even those of us with medical training can have a very different perspective when it comes to our own loved ones.”**

I was convinced that she had heard the news of a new metastatic lesion and assumed this was an immediate death sentence and that this fear caused her to lose significant amounts of weight and energy. She was also found to have elevated blood sugar on multiple occasions, and I thought that this uncontrolled diabetes was surely contributing to her decline.

One week before my mom died, my dad called me to ask about her worsening shortness of breath. They had planned a trip to Florida for the following day. I hadn't seen her in a few weeks, and my first thought was that she had reaccumulated pleural fluid and that they should have taken care of this before the Friday afternoon of a holiday weekend. I asked, “Are you sure she looks okay to get on a plane?” and my dad (a physician himself) responded, “I think so. It doesn't seem too bad, it's just noticeable, and she really wants to go to Florida.” I was to meet them there 2 days later but the morning I was to depart, my dad called from an emergency room in Florida saying that my mom couldn't wait and needed a thoracentesis right away. When I arrived in Florida I saw a completely different person from 3 weeks prior. My mom was now wheelchair-bound, had ascites and pitting edema, and had to sit completely upright to breathe, despite the thoracentesis. I couldn't believe that my father had not seemed to notice my mother's dramatic decline.

### **Differing Perspectives**

In retrospect, I realize that even those of us with medical training can have a very different perspective when it comes to our own loved ones. I had a hard time accepting that her weight loss and fatigue could be signs of worsening cancer, and my father had a hard time seeing that my mother was actively dying in front of him. This experience made me understand how my patients' and their families' perspectives may differ. It also reminded me of the patience required to help a family deal with life and death.

Many times it is harder for those who will be left behind than for the patient with cancer. Prior to my mother's diagnosis of metastatic disease, Elizabeth Edwards, the wife

of former Senator John Edwards, was diagnosed with metastatic breast cancer. My father hid every single newspaper in their house because he didn't want my mom to be reminded that she was sick. When my mom was diagnosed with leptomenigeal disease 6 weeks before her death, I recommended to my dad that they should consider rearranging the house and getting a hospital bed in the living room to make it easier for her to get around. I also tried to talk to them about hospice care. However, he didn't want her to “feel more sick by seeing all of that equipment” or feel like they were

giving up. Two days before my mom died she finally decided to enroll in hospice. But even then my father asked me, “Do you think Mom might change her mind and get more treatment?” Watching my dad losing his life partner of 43 years was incredibly eye opening for me. Because even after my mom had tried to spend the last months enjoying her life, being with family, and accepting that she was dying, my father just couldn't bear to do this.

Finally, I have learned that the cancer experience doesn't end when the patient completes treatment, is deemed cured, or dies. Just over a year has passed since my mom died on September 11, 2010, and not a day goes by that I don't think of her. My dad often expresses various regrets, such as wondering whether my mom should have seen a different surgeon at the original diagnosis. What has been an invaluable lesson to me as an oncologist is that this experience still continues even though we are no longer in contact with my mom's doctor.

So do remember that your patients and their families live with the cancer experience well beyond the time they spend in your office or in the infusion suite. I don't regret pursuing oncology, and I feel that now, more than ever, I have a unique perspective on helping people because I have experienced the impact of a cancer diagnosis and cancer death in my own family. Fellows are not immune to the effects of these types of diagnoses when cancer hits home, but we can grow from these experiences and provide even better care to those who seek our help. ■

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*Josephine Feliciano, MD, is a junior faculty member at the University of Maryland's Marlene and Stewart Greenebaum Cancer Center in Baltimore.*

Interested in contributing to *Oncology Fellows*? If you'd like to submit an article for consideration in an upcoming issue, please e-mail John Eichorn at [jeichorn@onclive.com](mailto:jeichorn@onclive.com).



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Feature

# Public Speaking Tips for Fellows

*By Laura Bruck*



**A**long with death and taxes, public speaking is one of the most common fears known to man (and woman). For some it can take on phobic proportions.

As an oncology fellow you've chosen an intensely research-driven field, in which the very lives of patients depend upon the sharing of information via both the written and spoken word. In other words, public speaking is almost certainly in your future.

The good news is that even those who anticipate a speaking engagement with as much enthusiasm as they do a root canal can learn to become competent or even excellent speakers. To this end, the following tips will help to put you on the road toward viewing public speaking as an opportunity rather than a curse.

### **Know Your Audience**

When it comes to presentations at medical meetings, one size definitely does not fit all. Indeed, knowing your audience (and tailoring your talk accordingly) is the first commandment of public speaking. Let's assume that your subspecialty is radiation oncology. Over the course of your career you'll likely be called upon to speak to audiences of your true peers (ie, other radiation oncologists) as well as to medical oncologists, surgical oncologists with a variety of subspecialties, nononcologist physicians, nonphysicians (eg, nurses, physician assistants), and audiences that include all of the above. Adding another layer of complexity is the likelihood that your audiences will often include clinicians with a broad range of experience and expertise, from residents to fellows to veteran staff physicians.

The best speakers are those who provide audience members with information they want and need, and do so without speaking over their heads or, arguably worse, speaking down to them by dwelling on information considered common knowledge.

The old you-can't-please-everyone adage notwithstanding, seasoned speakers are adept at handling all possible eventualities. If your

audience consists primarily of your true peers it's fairly safe to assume that their expertise and knowledge are similar to your own. If, however, you're speaking to oncologists from other subspecialties, they'll likely need additional background and explanations of some subspecialty-specific terminology. Presentations given for nononcologists will require more of such explanations and background, and in more detail. In all cases, avoid jargon; by using it you run the risk of losing or even alienating at least some of your audience.

Finally, keep in mind that the majority rules, and your talk should be geared primarily to meet their needs. You can do this and still acknowledge your minority audience members with brief explanations or references to what most listeners know as common knowledge.

### **Trick of the Trade**

*Track down some colleagues who are representative of those in your audience and ask them to serve as a focus group. Give your talk and invite constructive criticism.*

### **Respect the Guidelines**

If you've already written for a peer-reviewed journal or trade publication you're familiar with the need to adhere closely to author guidelines.

In most cases, clinicians invited to speak at medical meetings are also provided with guidelines, and the need for adherence is equally important.

In addition to specifying requirements such as presentation length, these guidelines can be used as a template, of sorts, for writing your talk—as will a syllabus and published proceedings from previous meetings.

Once you've determined the content of your talk, keep in mind that every speaking opportunity is different with regard to attendees, expected content, time restrictions, venue, tone, degree of formality, and so on. While not written in stone, smaller meetings tend to be more relaxed while larger meetings tend to have an air of formality that necessitates a different tone and demeanor.

### **Trick of the Trade**

*Ask a colleague whose speaking abilities you respect to critique your written presentation and slides. Then, audit a meeting similar to the one at which you'll be presenting or access a video of previous speakers. Doing so will give you a sense of the tone of the meeting. It will also give you an opportunity to listen to excellent and less-than-stellar speakers, and to determine what they're doing right—and wrong.*

### **Learn the Art of Presenting Your Art**

Some of the most respected presenters earn that reputation, in part, because of their visual aids. These presenters know how to ensure that those visuals enhance, rather than distract from, their talks. (See "Visual Aids: Take It Slow, Keep It Simple.")

As in medicine, presentation technology is only as effective as the person using it. Furthermore, using technology for technology's sake is always a bad idea; unless it helps to illustrate your spoken words, walk away and go with what you know.

### Exorcise the Jitters

There's no better way to calm your nerves than to practice—and to do so over and over again. When you've lived with your talk for as long as possible, giving your presentation becomes almost second nature,

even if you're battling a case of nerves. Practice in front of family and friends, ask to present at grand rounds, and conduct several "dress rehearsals" (visuals included) in front of colleagues.

And there's more good news. Many seasoned speakers will tell you that it's easier to speak in a large room before a large audience than it is to talk to a small group in an intimate setting, since standing on a stage with the lights dimmed provides a comfortable sense of distance.



## Visual Aids

### Take It Slow, Keep It Simple

With so many options available, it's tempting to use the latest and greatest technologies to illustrate your data and present your clinical art. If you're a true techie who grasps new programs quickly and easily, go forth and enhance! If, however, your strengths lie in other areas, stick to what you know unless you have more than enough time to familiarize yourself with the technology and become 100% comfortable with every aspect of its use. A few common sense tips follow:

- If you've opted for computer-generated visuals, the first step is to learn to create a document formatted specifically for presentations. A Web browser search will lead you to instructions for screen captures, regardless of your operating software. Available presenter programs are Microsoft PowerPoint, Mac's Keynote, and a free presenter program from OpenOffice.org called Impress. Whichever program you choose, don't be afraid to embrace the Help button. Also useful to pros and newbies alike are online communities and blogs that feature discussions about the software you're using. These venues allow you to access solutions to problems and other topics of interest while seeing what others are saying about the programs you're considering.
- Anticipate a learning curve for whatever program you use, and give yourself ample time to work through any rough spots. Start by learning how to save the presentation you create, then move on to learning how to type text on a slide, add additional text, insert an image, and create new slides. Once these skills have been mastered you can move on to learning about basic slide transitions.
- Keep your visuals simple. Too much text on a single slide and cluttered clinical photo backgrounds distract from the topic at hand. Simplicity is also the rule of thumb when it comes to slide transitions.
- Never attempt to increase the size of a small image. More often than not you'll wind up with a blurry image or one that appears highly pixelated.
- Practice, practice, practice. The last thing you need to worry about is a technology malfunction. While some such mishaps are beyond the speaker's control, most can be averted by practicing with your visuals as much as you practice the talk itself. The speaker ready room is a great place to do a final check and work out any bugs. (Your hotel room will do in a pinch.)

### Trick of the Trade

*On the day of your talk, do whatever normally helps you to relax (going for a walk, talking to a friend, and so on). Even more important is not doing something you normally don't do. If, for example, you're not a coffee drinker, the last thing you want is to find out how caffeine affects you right in the middle of your talk. (The tried-and-true advice of picturing your audience members naked is probably dubious at best!)*

### Use Your Notes Wisely

While no one expects you to give your talk from memory, watching a speaker whose head is buried in a stack of note cards or obscured by a computer screen can be distracting—or even annoying. Notes should be used as an aid rather than a crutch. If you've practiced sufficiently you probably *do* know your talk by heart. Even so, use your notes as a "just in case" to be glanced at when needed.

### Trick of the Trade

*Make sure your notes are legible (preferably typed or computer-generated) and large enough to be easily read by the small light of the podium. Highlight or enlarge potential problem areas and, if needed, insert reminders such as "slow down," as well as any needed cues related to your visuals.*

### Heed the Clock

Unlike those making acceptance speeches for Oscars and Emmys,

you won't be played off the stage by annoying music when you reach the time limit for your presentation. You will, however, be given such a limit. At larger meetings a gentle reminder might take the form of a light that begins to flash, or one that changes from green, to yellow, to red.

Think of your talk as a 2000-word article that needs to be cut to 1000. As you edit you'll find that you're eliminating extraneous verbiage and unnecessary information—precisely what you want to do.

#### Trick of the Trade

*Two of the most commonly made public speaking mistakes are the tendency to speak too quickly or too softly—usually without even knowing it. Make your talk 20 seconds shorter than the time allotted. This way, you can speak at a comfortable pace without feeling rushed and will have plenty of time for end-of-*

*talk acknowledgments. Also remember to stand sufficiently close to the microphone to be heard by all attendees (or be sure your wearable mic is working perfectly). Whenever possible, sneak in beforehand for a sound check.*

#### Anticipate a Q&A

As long as you're well prepared and confident in your material, questions from the audience should be no problem. Keep your answers brief and to the point, remember that questions are more often an indication of interest than a sign of challenge, and don't be afraid to say "I don't know" if that's the case. (If appropriate, you can offer to retrieve the requested information at a later date.)

#### Trick of the Trade

*Use your focus group to practice fielding questions.*

#### Seize All Opportunities

Take advantage of every opportunity to speak before an audience, whether at grand rounds, regional meetings, or large national meetings. Every speaking opportunity is a chance to share your knowledge, hone your skills, and give your confidence a boost. Remember that everyone who stands behind a podium will someday lose his or her place or stumble over a word; it's simply part of the process.

#### Trick of the Trade

*Inspire yourself. Think about how much you've learned from other speakers, and how much your colleagues stand to learn from you. ■*

*Laura Bruck is a Cleveland, Ohio-based freelance writer and editor who has specialized in healthcare since 1987.*

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# How to Perform the Perfect Bone Marrow Biopsy

By Cyrus Khan, MD, and Casey Moffa, DO

“**T**he bone marrow aspirate is dilute and cell morphology cannot be adequately determined. The biopsy specimen is inadequate to determine cellularity.” This is not the kind of result you’re looking forward to after putting your patient through an ordeal that’s best described by his comment: “Doc, this is the closest I’ll ever come to experiencing the pain of childbirth as a 45-year-old man.”

A successful bone marrow aspirate and biopsy require not only experience and good technique, but also patience and perseverance. The procedure can be challenging for you and the patient, but being cognizant of some important issues can lead to better-quality biopsies and make the experience more tolerable for the patient. The intent of this article is not to provide an expansive review of how to perform a bone marrow biopsy, as this can be found in many texts, but rather to emphasize some important tips in order to successfully perform the perfect bone marrow biopsy.

### Plan Ahead

In Alan Lakein’s words, “Failing to plan is planning to fail.” As with any medical procedure, being well prepared cannot be overemphasized. Realizing that some important equipment is missing during the procedure or that the patient is not in the proper position can be very unsettling. It is also crucial that you determine in advance whether the biopsy will be taken from the more common and easily accessible posterior superior iliac spine, or from the sternum when there is difficulty in getting samples from the iliac spine (eg, such as in an obese patient or one with anatomical deformities).

### Know the Indications for the Biopsy

It is important to be familiar with the patient’s history and understand why the biopsy is necessary. Just as important as the biopsy itself is ensuring that you order the correct studies on the specimen, which in turn depends on what diagnosis is being entertained. It is also equally

imperative to know when *not* to do a biopsy. There are a few circumstances that are considered absolute contraindications, such as hemophilia, severe disseminated intravascular coagulation (DIC), and other bleeding disorders. Thrombocytopenia is usually not a contraindication. Also, remember that while a sternal aspirate is possible, a biopsy should never be attempted in this case due to the close proximity to vital structures of the thorax and the fact that only a thin bony plate is separating your needle from these structures.

*“It is important to choose a block of time in which you can carry out the procedure in an unrushed fashion.”*

### *Choose the Right Time and Place*

It is generally understood that fellowship training is exceptionally busy and finding adequate time for the biopsy can be very challenging. It is important to choose a block of time in which you can carry out the procedure in an unrushed fashion. It is counterproductive to schedule a biopsy half an hour before an important conference or another important task; it is typically recommended to allocate at least 45 minutes for the procedure. The time it will take you to do a biopsy can be unpredictable. Some will be only 20 minutes while others may require an hour if complications arise. Make sure you give advance notice to the patient and their nurse and ensure that they are not scheduled for any other procedures during the dedicated time. Ideally, the biopsy should be done in a private patient room where there is more space and privacy; however, this may not always be possible in the hospital setting. Check that the patient's bed is in working order and see that enough personnel are available to help in order to keep interruptions to a minimum.

### *Bring the Correct Equipment*

Familiarize yourself with the specific biopsy kit that is used at your institution and gather any other necessary material that is not provided with the kit. Make a checklist. In general, the following equipment is needed: aspirate and biopsy needles, syringes with needles, sterile gloves, antiseptic swabs, gauze material, lidocaine, heparin, collection tubes and pathology specimen cups to send off the required samples (usually, these are aspirates for morphology, immunohistochemistry, flow cytometry, and cytogenetics, as well as a biopsy specimen for pathology), slides, and the necessary request forms. This list is a general guideline and should be modified to meet specific institutional needs.

### **Prepare the Patient**

Many patients cringe at the notion of having to go through a bone marrow biopsy, as they have inadvertently heard that it is a “horrible” procedure. It is important that you prepare the patient for the procedure to help ease his or her preconceived

ideas. A conscious effort should be made to not trivialize the procedure, since it is probably the patient's first experience.

Appropriately counsel the patient beforehand and go through each planned step in detail. Explain why the biopsy is necessary and what to expect during each step. Never say that the biopsy is painless, as this is typically not the case. Tactfully reiterate that you will do your best to minimize pain and discomfort and that the procedure is generally well tolerated with adequate use of local anesthesia. Obtain informed consent and be sure that you describe the possible complications, which are generally very rare.<sup>1</sup> Prepare the patient for what to expect afterward, such as pain and discomfort in the area and how to care for the biopsy site. Tell the patient how long it usually takes for test results to become available at your institution. Ensure that the patient understands your instructions completely, will be able to cooperate during the procedure, and will answer any questions.

### **Minimize Pain and Anxiety**

It is virtually impossible to completely eliminate pain from the biopsy procedure, but certain measures can help reduce the discomfort or at least the perception of pain. People have different pain thresholds, which is illustrated by the very different comments made by various patients post-procedure. One patient may feel very little pain (“I must be one of the lucky ones. I didn't feel much pain (maybe a 4 or 5), mostly just a lot of pressure”), while another may have a completely different experience (“That was the most pain I have ever experienced in my life. When they broke through the bone into the marrow, a pain shot down my legs that caused me to break a sweat and curse like a drunken sailor”). In a study of 235 patients undergoing a bone marrow biopsy, 56% reported moderate pain while 32% reported severe pain.<sup>2</sup> Another factor that may augment a patient's perception of pain is the anxiety associated with the procedure. Up to 75% of patients in 1 study reported moderate to severe procedural anxiety.<sup>3</sup> It is important that you are mindful of these facts and that you make an effort to individualize each patient's pain and anxiety management. It cannot be overemphasized that the specimen obtained may be of much better quality if the patient is comfortable and cooperative.

Most patients do well with only local anesthesia but there may be some who need premedications, usually



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narcotic analgesia, anxiolytics, or even conscious sedation. If only local anesthesia is used, an adequate amount should be given. Anesthetize a wide area and don't hesitate to use additional anesthetic if the adequacy of pain control is not optimal. Do not continue to poke and prod while trying to comfort the patient with words like "It's going to be over soon" while the patient cries in pain. There is no reason why more local anesthetic cannot be given.

The choice and dose of the premedication may vary based on personal experience, but generally an IV or oral morphine derivative and lorazepam can be used to both provide some sedation and help with pain. If possible, the premedications should be given at least 30 minutes before the planned time of the procedure. A study of 138 patients undergoing a bone marrow biopsy reported that using 1 mg of lorazepam preprocedure did not reduce pain significantly but enhanced cooperation of the patient and his or her willingness to undergo another procedure.<sup>4</sup> Another study evaluated 84 patients who had either 10 mg of oral oxycodone and 2 mg of lorazepam or placebo administered 30 minutes prior to the procedure. Compared with placebo, the combination regimen provided a 14% decrease in the perception of pain ( $P \leq .05$ ).<sup>5</sup>

There is no conclusive evidence that premedicating a patient necessarily reduces procedural pain, but it may be helpful under certain conditions and help get the actual procedure done more effectively and efficiently.

### Know the Correct Technique

It is important that you learn correct biopsy technique early in your fellowship, because it is difficult to unlearn poor technique later on in your career. Before beginning to perform biopsies under supervision, observe attending physicians or other senior fellows who have developed a good technique. Once you have advanced to performing biopsies on your own, have them observe you until you have become proficient. There is a lot of variation among each procedure and while the first 10 biopsies may go smoothly, the 11th one may be challenging and require the help of a more experienced colleague. Another good way to learn is to watch a video (available to subscribers) at the *New England Journal of Medicine* Website.<sup>6</sup>

Another testament to a good overall procedure is the quality of the sample provided. If you're sending the aspirate specimen directly to the lab instead of preparing slides at the bedside, ensure that spicules are present. Getting a good-quality aspirate may not be possible under certain circumstances. When this situation is encountered a touch imprint can be provided to the pathologist to assist with the diagnosis. It is also critical to get a good-length biopsy specimen; it is generally accepted that a 2-cm specimen has greater diagnostic yield.<sup>7</sup> Remember to collect adequate specimens for the various studies that will be ordered. In the situation where you cannot get good, adequate samples or find the correct location, try to switch sides, obtain a sternal

aspirate, or even consult radiology to perform the procedure under radiological guidance. Toward the end, apply a pressure dressing and instruct the patient to lay supine for 20 to 30 minutes to allow for adequate hemostasis.

### Dealing With Complications

Take comfort in the fact that complications are quite rare. In a report published in 2003, there were only 26 adverse events out of a total of 55,000 procedures.<sup>1</sup> In the event that a complication does occur, you will need to be prepared. Some common complications are bleeding from the biopsy site and local infections. Bleeding can generally be controlled with adequate and prolonged pressure to the site. Infections can be prevented by good antiseptic technique and are usually limited to the skin. Other complications are even rarer and can include needle breakage, transient neuropathy, or fracture due to underlying osteoporosis.

At the conclusion of the procedure, ensure that all sharps are discarded properly. Thank the patient and clean up behind yourself. You don't want to be known as the notoriously sloppy fellow in nursing-gossip circles. Double-check that all samples are labeled correctly and sent to the correct departments.

Hopefully, by following these general guidelines you will become more comfortable at performing bone marrow biopsies and every one of them will be perfect. ■

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### REFERENCES

1. Bain BJ. Bone marrow biopsy morbidity and mortality. *Br J Haematol*. 2003;121(6):949-951.
2. Liden Y, Landgren O, Arner S, Sjolund KF, Johansson E. Procedure-related pain among adult patients with hematologic malignancies. *Acta Anaesthesiol Scand*. 2009;53(3):354-363.
3. Brunetti GA, Tendas A, Meloni E, et al. Pain and anxiety associated with bone marrow aspiration and biopsy: a prospective study on 152 Italian patients with hematological malignancies [published online ahead of print February 2, 2011]. *Ann Hematol*. DOI:10.1007/s00277-011-1166-7.
4. Park SH, Bang SM, Nam E, et al. A randomized double-blind placebo-controlled study of low-dose intravenous Lorazepam to reduce procedural pain during bone marrow aspiration and biopsy. *Pain Med*. 2008;9(2):249-252.
5. Talamo G, Liao J, Bayerl MG, Claxton DF, Zangari M. Oral administration of analgesia and anxiolysis for pain associated with bone marrow biopsy. *Support Care Cancer*. 2010;18(3):301-305.
6. Malempati S, Joshi S, Lai S, Braner DA, Tegtmeier K. Videos in clinical medicine: bone marrow aspiration and biopsy. *N Engl J Med*. 2009;361(15):e28.
7. Campbell JK, Matthews JP, Seymour JF, Wolf MM, Juneja SK. Optimum trephine length in the assessment of bone marrow involvement in patients with diffuse large cell lymphoma. *Annals Oncol*. 2003;14(2):273-276.

# Caring for Our Uninsured Patients

By Sheetal M. Kircher, MD

**A**s fellows, we have all encountered uninsured patients in either the hospital or the clinic setting. Depending on the type of practice where you are training (eg, private vs university, urban vs rural), there will be a different proportion of patients who lack insurance coverage. According to the Kaiser Commission on Medicaid and the Uninsured, in 2009 there were 50 million people in the United States under the age of 65 who lacked health insurance. In many parts of the country, the stereotype of the uninsured homeless patient has been replaced by uninsured working families, who now make up more than three-fourths of the uninsured population. The increase in uninsured patients crosses age and ethnic boundaries and affects their health because they are unable to receive both the preventive and therapeutic care they need. In the case of our patients, the need both emotionally and financially will be high if they have a new diagnosis of cancer.

Unfortunately, the number of uninsured patients is increasing at a time when the cost of cancer care continues to rise. According to the National Cancer Institute, in 2006 cancer care accounted for an estimated \$104.1 billion in medical care expenditures in the United States. As we develop advanced molecularly targeted therapies, this number continues to rise. To an individual patient, there is variability in the cost of cancer therapy, but when you consider the cost of chemotherapy, surgery, radiation, and supportive medications, it's easy to reach tens of thousands of dollars per treatment regimen. For all but the wealthiest patients, this becomes cost prohibitive without insurance coverage or another means of financial support.

As medical students and residents, we often are able to defer insurance status issues to a team of support staff, such as social workers and case managers. As we transition to attending positions, the issues of insurance coverage become increasingly apparent and important to understand because of the potential interference in our ability to provide excellent care. By understanding the unique challenges of the uninsured and the resources available to them it is—in most cases—possible to provide them with the same excellent care as their insured counterparts.

## Unique Challenges of the Uninsured

Throughout my fellowship, one of the main observations was the similar challenges that are faced by patients with cancer. Patients of every age, socioeconomic status,



religion, gender, and insurance status are subject to the same disappointments and fears that accompany a cancer diagnosis. In addition to similar human emotions, uninsured patients have an additional set of worries that is unique to this population. An example that has left a lasting impression on me during training was a middle-aged patient who was battling advanced pancreatic cancer. Her poor prognosis and declining health were obvious to me, the attending physician, the patient, and her family as she progressed through treatment. As we aggressively treated her symptoms of pain, nausea, and weight loss, we found that we could not treat her biggest worry: losing her insurance if she was forced to stop working. Despite her symptoms, she continued to work 2 jobs in order to pay for medications and maintain her insurance for her family as she reached the end of her life. For uninsured patients, in addition to the obvious stresses of a cancer diagnosis and the effects of therapy, they are burdened with bills that may be difficult or impossible to pay.

Many patients may feel embarrassed or self-conscious about the fact that they cannot afford their medications. For example, while rotating through my gastrointestinal oncology clinic, I had a patient with locally advanced rectal cancer undergoing neoadjuvant treatment with concurrent capecitabine and radiation. Despite extensively educating this patient on the importance of compliance with twice-daily capecitabine, he consistently missed doses. As I discussed the case with my attending, I was frustrated and angry at this patient, as I felt he had a potentially curable cancer but was compromising his care by not complying with his medications. My attending was able to further explore why he was noncompliant, and the true

*“In this depressed economic environment, there is no doubt that the number of uninsured and underinsured patients may increase.”*

reason was that he was forced to choose between paying for his medications or food for his family. Because he was underinsured, he could not afford his medications and therefore was rationing them by taking them every other day. He was too embarrassed to admit that he did not have enough money and was therefore willing to compromise his care. This situation could have been avoided with better communication with the patient. As fellows, we may sometimes feel unequipped to deal with these treatment-cost issues and may avoid asking our patients if they need financial help.

### Utilizing Resources

As insurance coverage becomes increasingly more complex, we have all learned that some of our best allies in the hospital and clinic are our social workers. As fellows, many times the responsibility falls on us as the junior members of the team to communicate with the social workers to ensure that the patient has adequate insurance. There are services through government agencies, the American Cancer Society, drug companies, private funds, and other organizations to help our uninsured patients. Utilizing these resources can require patience, time, and paperwork, all of which can be made easier if you have a good social worker helping you through the process.

Another unique barrier I have encountered in the uninsured patient is the challenge of adequate transportation. Cancer care requires frequent physician visits, which can be as often as every day if a patient is receiving radiation therapy. It is easy to view missed appointments and cancellations as irresponsible and noncompliant, but transportation can be expensive and the patients may need assistance simply getting to their appointments. Again, a social worker or case manager can usually help find a community or hospital resource to provide this essential service.

### Patient Care and Insurance Status

In my experience as a fellow, I have been fortunate enough to be surrounded by physicians who provide excellent care regardless of a patient's ability to pay. I am idealistic enough to believe that the treatment plan of an uninsured patient should be of the highest quality and equal to that of his or her insured counterpart. I am realistic enough, however, to know that in today's healthcare environment there are limitations to what a hospital or clinic can

provide patients who do not have insurance. In my experience, if a patient cannot receive treatment due to inability to pay despite all the resources available, we refer to the local county hospital, which is able to treat the patient at no cost. While this may feel like you are abandoning him or her, ultimately

the goal is to provide the therapy our patients need and it may not be possible depending on where you work.

In the United States, we are fortunate that, in most areas, offering substandard oncologic care solely due to lack of insurance is not acceptable. We have clinics and hospitals that are state and federally funded to help patients who do not have insurance. Unfortunately, even with these services, an uninsured patient's care may be negatively affected in many ways if they cannot access the care they need. Even with free care, there can be significant difficulty in transporting the patient to clinics, which may be a great distance from his or her home, and treatment delays that plague many county healthcare systems. If the number of uninsured patients continues to increase, there is no doubt that these systems will be flooded and the challenges to provide adequate healthcare will be magnified.

### The Future of Insurance and Oncologic Care

In this depressed economic environment, there is no doubt that the number of uninsured and underinsured patients may increase. President Obama has made dramatic changes to our healthcare system in the Affordable Care Act of 2010, and the implications of this legislation are still premature. The hope is that there will be more insurance coverage for those Americans who really need it to get the care that they deserve. In addition to providing insurance coverage to a wider population, it will demand that our healthcare system become more evidence-based, efficient, and cost-effective. As this legislation unfolds, there will be a need to balance the financial sustainability of our healthcare system with the growing needs of our patients in the clinic.

As oncologists in training, we rigorously study treatment guidelines and strive to be evidence-based physicians who offer the highest standard of care. In today's healthcare environment, it will be important to also be aware of the resources available to help navigate the system to actually deliver this therapy to our patients. When we graduate fellowship, there will be many opportunities to work in different environments, from private practice to academic centers, which may offer a range of resources to help you provide the care you have trained for. In my opinion, that is one of the many factors to consider as we take the next step to becoming an attending physician. ■

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*Sheetal M. Kircher, MD, is currently finishing her oncology fellowship at Northwestern University in Chicago, IL.*



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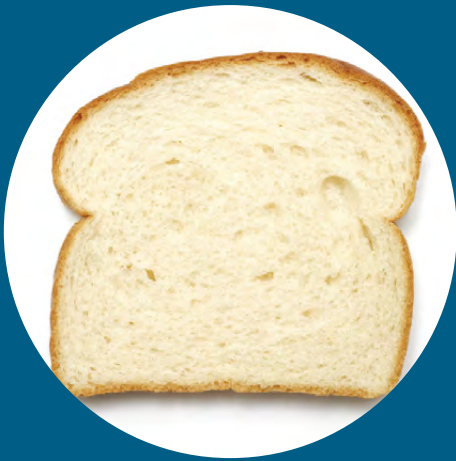
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# The Biology of Burnout



By Matthew Ulrickson, MD

I was called to the hospital to see a 26-year-old patient with multiple liver lesions. He had felt well until a few days before his hospitalization, when he presented with abdominal pain. A few days later he was diagnosed with multifocal hepatocellular carcinoma and Child's class C cirrhosis. I discussed the grim prognosis with the patient, his wife, and 20 of his family members and explained that there were no treatment options available besides supportive care. Shortly after this conversation he was discharged from the hospital and then received support from home hospice services.

My immediate response to this scenario was not too notable, as this was the end of my first year of oncology fellowship and I had encountered similar situations throughout the year. However, I later noticed my response to this and cumulative other events when my 3 year-old daughter lost her balloon out the car window a few weeks later. My response to her tears was simply, "Well, that just happens." This reaction, with its abundant lack of empathy for what was a significant loss for her, reinforced to me that my clinical exposure to patients can impact my emotional responses to my family and others in my life.

I have attended a number of lectures during training that have discussed the topic of burnout. These thoughtful talks included a list of symptoms, most of which I could recognize in some form or another in myself, and provided suggestions on how to deal with them. I usually left such lectures without any change in behavior on my part, rationalizing, "I will just tough it out." Often, the major cause of burnout is attributed to the amount of time that we as physicians spend working. After one of these talks, I wondered why the medical field is particularly vulnerable to burnout when so many other careers are prone to long hours as well.

## Trauma Exposure

I found a description that partially explains this vulnerability to burnout in *Trauma Stewardship: An Everyday Guide to Caring for Self While Caring for Others*. The book, written by Laura van Dernoot Lipsky and Connie Burk, has improved my understanding of a process the authors call trauma exposure.<sup>1</sup> They define trauma exposure simply as "the fact that we are affected by the suffering of others." This response to suffering is something I had noticed already, but I ignored its significance until I read their description. As I've investigated this further during my clinical rotations, I believe an understanding and dedicated response to trauma exposure is essential to enabling a career of consistent, quality patient care.

Given the abundance of new and difficult situations

that oncology fellows face during training, the likelihood of developing symptoms from trauma exposure is high, though it is clearly not unique to the training portion of our careers. While we commit to doing our utmost to relieve the suffering of our patients whenever possible, each emotional episode and undesired outcome that we witness has the potential to cause us to feel that we are primarily responsible for the outcome. During fellowship training, when our knowledge gap is larger and the fear of missing something is greater, this tendency to feel inappropriate responsibility increases proportionally. I believe that an inappropriately high assumption of responsibility for patient suffering contributes to burnout while an inappropriately low level of responsibility is symptomatic of burnout. Our goal must be to remain between these 2 extremes.

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**“Given the abundance of new and difficult situations that oncology fellows face during training, the likelihood of developing symptoms from trauma exposure is high.”**

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Part of the tendency to accept an inappropriate amount of responsibility for patient outcomes is rooted in a belief that suffering occurs for a reason. We may not believe this strongly enough to vocalize it, but I think many physicians utilize this belief for the protection it provides. If we acknowledge that we witness undeserved suffering we must also acknowledge that similar suffering could interrupt our own lives. This realization is difficult, and avoiding it in the short term can be easier than confronting our own vulnerability. A problem that arises with avoidance of this realization is that the emotional distance necessary for this defense weakens our empathy for the patient in front of us; this in turn contributes to decreased job satisfaction and burnout. Therefore, we must develop the skill of acknowledging suffering, recognize our appropriate role within it, and continually care for ourselves in order to sustain our careers in oncology.

When we appropriately handle our response to trauma exposure, our patients benefit and our ability to develop our careers during fellowship is positively impacted. Symptoms of trauma exposure include decreased creativity and motivation, fatigue, and physical ailments, which can delay or limit career choices due to a perceived or actual lack of productivity. Other symptoms of trauma exposure and burnout include a decreased

tolerance of ambiguity, a potentially dangerous symptom when premature diagnoses can lead to adverse patient outcomes. Because of its significant impact on clinical, professional, and educational growth, I believe improving our response to witnessed trauma should be a measured goal of fellowship training, prioritized alongside clinical training by fellows and program leadership alike.

I believe the first step in this process, one that has thankfully already begun, is increased recognition of the issue. There is an abundance of published evidence that burnout decreases quality of care and personal satisfaction among physicians.<sup>2</sup> Next, we need to improve our awareness of the symptoms of trauma exposure. I have included some of these symptoms in

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**“I believe that an understanding of the role of trauma exposure in physician burnout will improve our ability to sustain rewarding practice throughout our careers.”**

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this article, although I do encourage readers to consider further reading in *Trauma Stewardship*. This awareness will enable us to make changes before the symptoms begin to affect our care or our desire to continue in the profession.

In response to trauma exposure, I agree that taking additional time off from work is one potential intervention. However, this option should be reserved only for crisis situations in which immediate, drastic action is required. Similarly, I don't think that further work-hour restriction is an answer to this problem as it only decreases exposure slightly without teaching the behaviors and skills necessary to sustain a career. While the skills necessary to protect each individual from traumatic exposure are optimal when unique to their practice, I believe some central tenets are helpful to consider.

First, we as fellows need to improve our ability to talk about the fact that we are affected by our patients. This should be recognized as a required skill for excellence in medicine and not a sign of weakness or inadequacy. Preceptors, mentors, and program leaders can teach this skill with something as simple as a short e-mail or comment such as, “That was a tough case today. Good job.” This simple statement acknowledges the significance of difficult cases, communicates the fact that being affected by these situations is universal, and facilitates further discussion as necessary. In my experience, comments like this can have a positive,

dramatic impact on my symptoms of burnout without any concurrent change in the intensity of clinical work. Similarly, as trainees I believe we should also start the conversations ourselves with an admission such as, “That was a tough case for me.” This will provide opportunities for mentors to facilitate our growth in this area and potentially their own as well. Because opportunities to discuss difficult cases decrease after training, it is imperative to establish colleagues and mentors who can fulfill this role when fellowship training is complete.

Second, we need to participate in an extracurricular activity completely unrelated to the medical field and our coworkers. Due to the amount of time we spend in the hospital and clinic, it is not an infrequent occurrence for every one of our usual acquaintances to be either a patient or a healthcare worker. When this is the case, it is easy to begin to place everyone in the community into these categories as well. This can contribute to hypervigilance, which during my residency manifested itself as concerns about how best to run a code while in line at the grocery store. Exposure to nonmedical settings and conversations that do not revolve around our patients are therapeutic

and are possible even with the most demanding clinical schedule. It is difficult to create this extracurricular time and doing so requires making it a priority while developing clinical patterns that enable this balance.

Recognition of the symptoms of trauma exposure and burnout and the skills necessary to deal with them are very individual. I have a lot to learn about them as well. My hope is that this article serves not as a summation of the entire subject, but as a means for increasing conversation and understanding the topic. There is no easy answer to this challenge. Just as improved therapies are possible when the underlying biology of a disease is understood, I believe that an understanding of the role of trauma exposure in physician burnout will improve our ability to sustain rewarding practice throughout our careers. ■

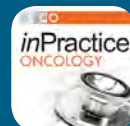
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### References

1. van Dernoort Lipsky L, Burk C. *Trauma Stewardship: An Everyday Guide to Caring for Self While Caring for Others*. San Francisco, CA: Berrett-Koehler Publishers; 2009.
2. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. *Lancet*. 2009;374:1714-1721.





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# Loan Repayment Programs for Oncology/ Hematology Fellows

BY MATTHEW T. CORSO

**O**ncology and hematology fellows are eligible for loan repayment programs (LRPs) for their medical education debts, but usually there's a catch. The catch is that the applicant fellow must agree to commit to practicing for a specified time in a medically underserved region of the United States, in research at an approved institution (usually a medical school), or in the military.

Most LRPs are sponsored by national, state, and local governments, but a handful are offered by private organizations. Typically, after completing a residency, physicians can apply to practice in areas designated by the US Health Resources and Services Administration either as a Health Professional Shortage Area or a Medically Underserved Area. To qualify for this program, applicants are not required to come from any particular ethnic or racial background, but they must be willing to work full time serving patients in the designated areas.

The largest provider of LRPs is the National Institutes of Health (NIH). The NIH says that it is committed to encouraging outstanding health professionals to pursue careers in biomedical, behavioral, social, and clinical research. One of the objectives of the NIH Loan Repayment Program is to provide financial help to fellows who choose to stay in academic medicine by relieving some of their student loan debt. The NIH recognizes that salaries in academia usually do not match those in private practice, so the LRP seeks to help qualified fellows continue their careers in academic medicine.

If a fellow commits to at least 2 years of conducting qualified research funded by a domestic nonprofit organization or a US federal, state, or local government entity, NIH may repay

up to \$35,000 of qualified student loan debt per year, including most undergraduate, graduate, and medical school loans. Loan repayment benefits are received in addition to the institutional salary that fellows might earn for their research.

If a fellow is or will be conducting qualified research at a domestic nonprofit institution outside NIH, he or she may be eligible for an LRP in one of the 5 LRP categories. (See "Q&A With NIH's Dr Gorelick.")

An example of a nonprofit program is the one administered by the American Society of Clinical Oncology (ASCO). It offers LRPs

to a number of fellows each year. Applicants must be an associate or active ASCO member or submit a membership application with the award application. The program will repay up to \$35,000 per year for 2 years (up to \$70,000 total) of qualifying education debt. For application forms and complete application criteria, visit the ASCO Cancer Foundation Website at [www.conquercancerfoundation.org/foundation](http://www.conquercancerfoundation.org/foundation) and click on "Cancer Professionals" and then click on "Grants & Awards."

Loan repayment programs are offered through the NIH at numerous medical institutions, including a pediatric oncology position at Johns Hopkins University in Baltimore, the Children's Hospital of Philadelphia, Memorial Sloan-Kettering Hospital in New York, and the University of Texas Southwestern Medical Center in Dallas. Benefits vary, but on average participants are required to provide service for 2 to 4 years. Fellows can contact the financial aid office of medical schools for more information.

### **Armed Forces Loan Repayment Programs**

The US armed forces are another major source of LRPs, through the Health Professionals Loan Repayment Program (HPLRP). Participants can receive up to \$40,000 per year for 3 years. Fully trained clinicians are eligible for loan repayment in exchange for service in an eligible assignment.

Financial grants are available for fellows who commit to active duty service and for those who choose to serve in the National Guard or Reserves.

### **National Guard Loan Repayment Program**

For just about every specialty or field within the US Army Medical Department, the National Guard offers fellows a bonus and/or an LRP. With a 3-year service agreement, physicians can receive special pay for health professionals of up to \$75,000, paid at \$25,000 per year over 3 years. And with another 3-year commitment, the bonus may be renewable. The National Guard is seeking physicians, residents, fellows, and medical students in a variety of specialties, including medical oncology/hematology.

**“ASCO offers loan repayment programs to a number of fellows each year.”**

## “Selected fellows can work full time for the Veterans Health Administration and serve part time in the National Guard.”

### Combining 2 Careers: The Guard and the VA

Fellows can combine 2 paths into 1 career that fulfills a military service requirement as well as the medical needs of military patients. Selected fellows can work full time for the Veterans Health Administration and serve part time in the National Guard. By combining National Guard service and VA employment, applicants are eligible for education loan repayment assistance from both organizations. While the National Guard offers the HPLRP to qualifying members, VA medical professionals can benefit from the Education Debt Reduction Program (EDRP), which can eliminate up to \$38,000 of your outstanding loans. For more information about EDRP, fellows can contact a local National Guard recruiter. The program also provides \$2500 each year for continuing medical education (CME) credit.

### Military Reserves

Physicians who agree to serve in Reserve units, as in the National Guard, are eligible to receive the special pay for health professionals of \$75,000, paid in yearly increments of \$25,000 for 3 years. They are also eligible for medical school loan repayment of up to \$50,000 over 3 years.

In addition to NIH, military services, and state LRPs, some private institutions provide grants to cover medical education loan debts, such as the Janet and Ray Scherr Fellowship Fund. The loan amount for this program is a maximum of \$10,000 per individual. For every year after graduation that the trainee stays in academic pediatrics, one-half of 1 year's repayment will be forgiven if the individual remains in a full-time academic pediatric position. For every year after graduation that the individual remains on the faculty at Mattel Children's Hospital UCLA, a full year's repayment will be forgiven.

If you are interested in learning more about loan repayment programs, you can contact the NIH office that handles the programs ([www.lrp.nih.gov](http://www.lrp.nih.gov)), your local armed forces recruiter, your medical school outplacement office, or your employer's human relations office. In addition, the American Association of Medical Colleges (AAMC) maintains a database of state and other loan repayment programs for medical school students. ■

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*Matthew T. Corso is a veteran editor and writer who has worked in medical publishing for more than 25 years.*

## Q&A With NIH's Dr Gorelick

*Oncology Fellows* asked Kerry Lee Gorelick, PhD, special assistant at the Division of Communications and Outreach in NIH's Office of Extramural Research, to answer several questions about loan repayment programs (LRPs) that are available for fellows.

### **Q: Does NIH have LRPs specifically for oncologists and hematologists?**

**Dr Gorelick:** The NIH does not have LRPs geared toward specific specialties. There are 5 separate LRPs: Clinical, Pediatric, Contraception and Infertility, Health Disparities, and Clinical Research for Individuals From Disadvantaged Backgrounds. Depending on the research being conducted, oncologists and hematologists could apply for any of these.

### **What are the eligibility requirements for oncologists and hematologists who want to apply for LRPs?**

All LRPs have the same basic eligibility criteria. [See [www.lrp.nih.gov/eligibility/index.aspx](http://www.lrp.nih.gov/eligibility/index.aspx) and [www.lrp.nih.gov/eligibility/eligibility\\_of\\_individuals.aspx](http://www.lrp.nih.gov/eligibility/eligibility_of_individuals.aspx).] In summary, applicants must have a doctoral-level degree and must be conducting qualified research for 50% of their time (ie, 20 hours per week on average); their research must be funded by a domestic nonprofit or government entity; they must be a US citizen, US national, or permanent resident of the United States; and they must have sufficient educational debt.

### **What are the financial and service terms for LRP recipients?**

The initial LRP contracts are for a 2-year period. The award is 25% of the eligible educational debt, up to a maximum of \$35,000 per year. For the initial contract, the award would be 50% of the debt to a maximum of \$70,000. NIH also pays 39% to cover the federal taxes.

### **What other governmental sources supply LRPs? And are there any nongovernmental sources that fellows might contact?**

The National Health Service Corps offers a loan repayment program for practicing clinicians, and the American Society of Clinical Oncology offers a loan repayment program for oncologists.

# By the Numbers

## Number of Cancer Survivors Increases Dramatically in 4 Decades

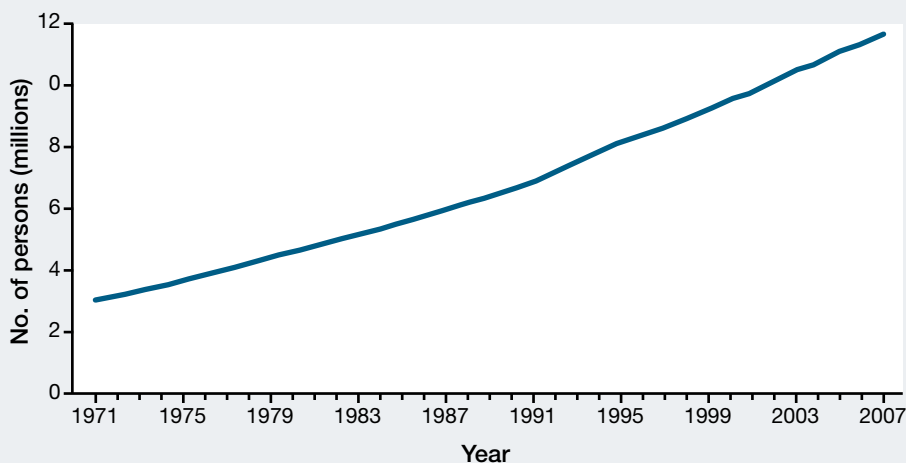
In 1971 there were about 3 million cancer “victims” in the United States—that was 1.5% of the entire population. Now, 4 decades later, we often refer to those living with cancer as having a chronic disease and therefore as cancer “survivors.” In 2007, the number of cancer survivors had increased to 11.7 million people, or 3.9% of the US population (FIGURE 1).

In January 2007, it was estimated that 59.5% of cancer survivors were aged ≥65 years, whereas 35.2% were aged 40 to 64 years, 4.5% were aged 20 to 39 years, and <1% were aged ≤19 years. Female breast cancer, prostate cancer, and colorectal cancer were the most common types of diagnosed malignancies and together they accounted for 51% of diagnoses among patients with cancer who were alive on January 1, 2007. Among those survivors, 54.3% were female and 45.7% were male.

Also, as of January 2007, about 64.8% of cancer survivors had lived ≥5 years after their diagnosis, and 59.5% of those were aged ≥65 years. Of these survivors, 57.2% were women. Females comprised the majority of survivors living ≥15 years after their diagnosis of cancer, at 67.5%. Of the 11.7 million cancer survivors on January 1, 2007, 1.1 million had lived for ≥25 years postdiagnosis. Of the survivors who had lived for ≥25 years, women comprised 75.4% (FIGURE 2).

**FIGURE 1. Estimated number of living persons ever diagnosed with cancer**

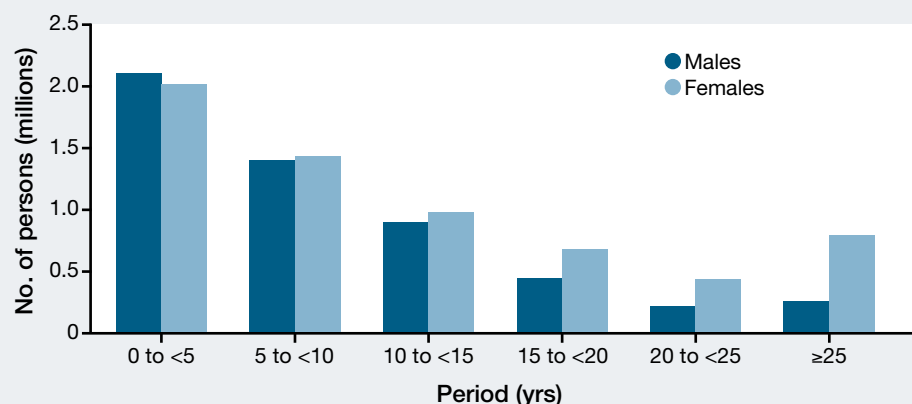
(United States, January 1, 1971, to January 1, 2007)



**Source:** Altekruse SF, Kosary CL, Krapcho M, et al, eds. SEER cancer statistics review, 1975-2007. Bethesda, MD: National Cancer Institute; 2010 (based on November 2009 data submission). [http://seer.cancer.gov/csr/1975\\_2007](http://seer.cancer.gov/csr/1975_2007) External Web Site Icon.

**FIGURE 2. Estimated number of living persons ever diagnosed with cancer, by sex and period since diagnosis**

(United States, January 1, 2007)



**Source:** Altekruse SF, Kosary CL, Krapcho M, et al, eds. SEER cancer statistics review, 1975-2007. Bethesda, MD: National Cancer Institute; 2010 (based on November 2009 data submission). [http://seer.cancer.gov/csr/1975\\_2007](http://seer.cancer.gov/csr/1975_2007) External Web Site Icon.

## Oncology & Hematology Meetings

### 2011

**November 10-11**  
**ESMO Symposium on Metastases**  
Zurich, Switzerland  
<http://bit.ly/kJD58W>

**November 10-12**  
**Society of Integrative Oncology's Eighth International Conference**  
Cleveland, OH  
[www.integrativeonc.org](http://www.integrativeonc.org)

**November 19**  
**7th Annual Multidisciplinary Symposium on Head and Neck Cancer**  
Philadelphia, PA  
<http://bit.ly/p9VNAw>



**December 6-10**  
**34 Annual CTRC-AACR San Antonio Breast Cancer Symposium (SABCS)**  
San Antonio, TX  
<http://bit.ly/pbnLLk>

**December 10-13**  
**2011 ASH Annual Meeting and Exposition**  
San Diego, CA  
<http://hematology.org/Meetings/Annual-Meeting>

### 2012

**January 19-22**  
**Radiation Therapy Oncology Group Meeting**  
Atlanta, GA  
<http://bit.ly/qTw2F4>

**January 21-22**  
**Melanoma 2012: 22nd Annual Cutaneous Malignancy Update**  
San Diego, CA  
<http://bit.ly/qQb5Nu>

**February 2-4**  
**2012 Genitourinary Cancers Symposium**  
San Francisco, CA  
<http://gucasymposium.org>

**February 23-26**  
**15th Annual International Congress on Hematologic Malignancies: Focus on Leukemias, Lymphomas, and Myeloma**  
Snowbird, UT  
<http://bit.ly/qD3aox>

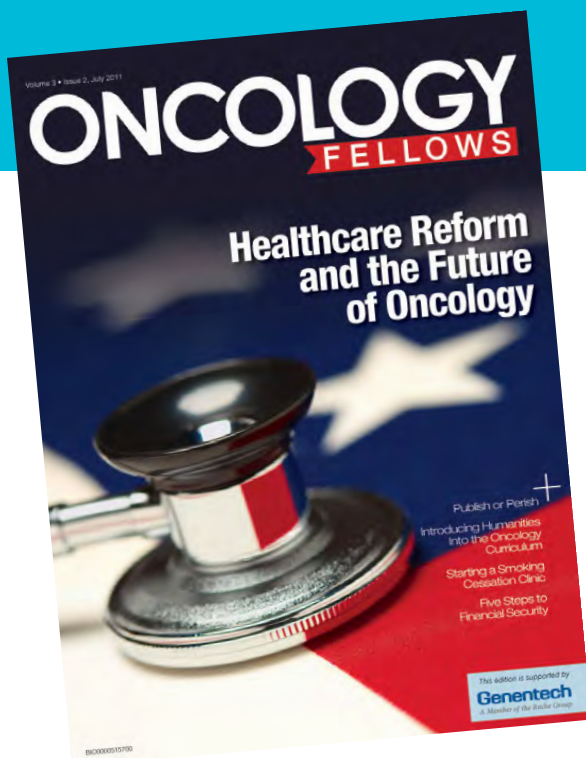
**March 14-17**  
**29th Annual Miami Breast Cancer Conference**  
Miami, FL  
<http://bit.ly/nkDSmS>

**March 21-24**  
**SSO 65th Annual Cancer Symposium**  
Orlando, FL  
[www.surgonc.org/meetings--events/annual-cancer-symposium.aspx](http://www.surgonc.org/meetings--events/annual-cancer-symposium.aspx)

**March 25-28**  
**2012 Annual Meeting on Women's Cancer**  
Austin, TX  
[www.sgo.org](http://www.sgo.org)

**May 3-6**  
**37th Annual ONS Congress**  
New Orleans, LA  
[www.ons.org/CNECentral/Conferences/Congress](http://www.ons.org/CNECentral/Conferences/Congress)





## CALL FOR PAPERS

We welcome submissions to ***Oncology Fellows***, a publication that speaks directly to the issues that matter most to hematology/oncology fellows at all stages of training. ***Oncology Fellows*** aims to provide timely and practical information that is geared toward fellows from a professional and lifestyle standpoint—from opportunities that await them after the conclusion of their fellowship training, to information on what their colleagues and peers are doing and thinking right now.

***Oncology Fellows*** features articles written by practicing physicians, clinical instructors, researchers, and current fellows who share their knowledge, advice, and insights on a range of issues.

We invite current fellows and oncology professionals to submit articles on a variety of topics, including, but not limited to:

- **Lifestyle and general interest** articles pertaining to fellows at all stages of training.
- **A Word From Your Fellows:** articles written by current fellows describing their thoughts and opinions on various topics.
- **Transitions:** articles written by oncology professionals that provide career-related insight and advice to fellows on life post-training.
- **“A Day in the Life”:** articles describing a typical workday for a fellow or an oncology professional post-training.

The list above is not comprehensive, and suggestions for future topics are welcome. Please note that we have the ability to edit and proofread submitted articles, and all manuscripts will be sent to the author for final approval prior to publication.

If you are interested in contributing an article to ***Oncology Fellows***, or would like more information, please e-mail John Eichorn, Senior Editor, at [jeichorn@onclive.com](mailto:jeichorn@onclive.com).

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