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- Innovation in Oncology Care and Treatment
- Personalized Medicine and Value-Based Care
- Patient-Reported Outcomes and Quality Metrics
- Future of Oncology Advanced Payment Models
- Oncology Networks: Collaboration for Value-Based Care

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Watch your inbox for our *Oncology Fellows* e-newsletter—written for fellows, by fellows. Send an email request to Jason Harris (jharris@onclive.com) to receive your copy.

Study Charts Rising Tide of US Cancer Survivors

THE GROWTH AND AGING of the population combined with advances in the early detection and treatment of cancer have resulted in a growing population of survivors across the nation, according to a study from the American Cancer Society and the National Cancer Institute. In addition, cancer rates are declining in men and stabilizing in women. The report indicates that more than 16.9 million Americans with a history of cancer were alive as of January 1, 2019. It projects that this number will surpass 22.1 million by 2030. The majority of cancer survivors are ≥65 years and were given a diagnosis within the past decade, the study said (FIGURE).

Among women, breast cancer is the most prevalent cancer type, with 268,600 new cases expected this year. The number of US women with a history of invasive breast cancer currently exceeds 3.8 million, and more than 150,000 live with metastatic disease. The large pool of breast cancer survivors is partly due to the rising 5-year relative survival rate, which grew from 79% for patients whose disease was diagnosed between 1984 and 1986 to 91% for those with diagnoses between 2008 and 2014. Approximately 64% (>2.4 million) of survivors are ≥65 years; 7% are <50 years.

With 3,650,030 survivors as of January 1, 2019, prostate cancer is the most prominent cancer in men. The 5-year relative survival rate increased from 83% in the late 1980s to 99% from 2008 to 2014.

Similarly, survival rates for acute lymphocytic leukemia (ALL) have increased over the past 3 decades, particularly among pediatric patients. More than 95% of the pediatric population with ALL achieves remission, compared with 78% to 92% of adults. In the early 1980s, a 16 percentage point difference (55% vs 71%) marked the survival disparity between black and white children and adolescents. That narrowed to an 8 percentage point difference (85% vs 93%) between 2008 and 2014.

Lung cancer and testicular cancer survival rates also have increased. The rate of the former rose from 34% for patients whose disease was diagnosed between 1975 and 1977 to 47% for those with diagnoses from 2011 to 2014. Authors of the report attributed this improvement to surgical and chemoradiation advances. After charting a continuous increase since the mid-1970s, the 5-year relative survival for testicular cancer is now 99%, thanks to the efficacy of chemotherapy regimens for advanced disease.

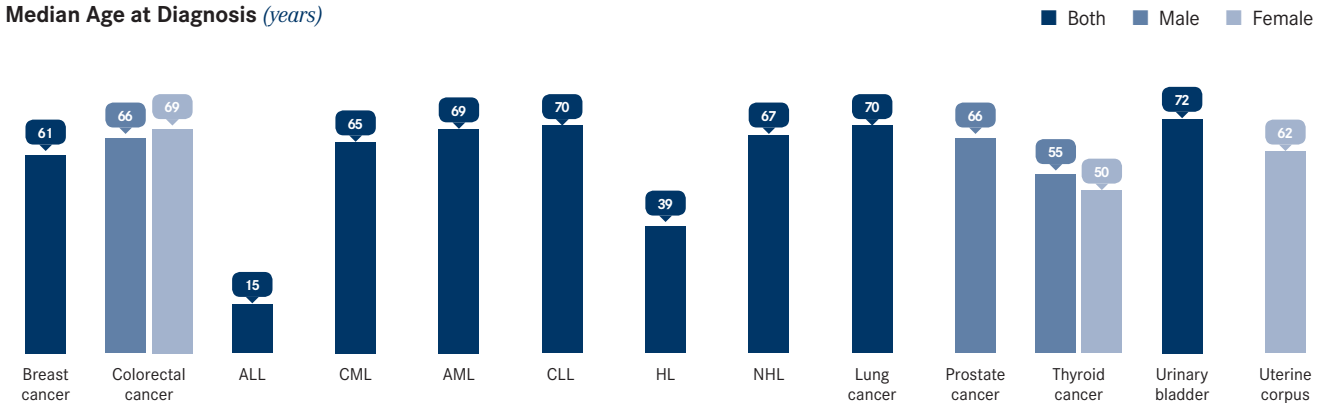
Investigators said poor integration of survivorship care between the oncology and primary care settings, clinician workforce shortages, and insufficient knowledge about the needs of cancer survivors are some of the challenges that remain in this setting. ■

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Miller KD, Nogueira L, Mariotto AB, et al. Cancer treatment and survivorship statistics, 2019 [published online June 11, 2019]. *CA Cancer J Clin*. doi: 10.3322/caac/21565.

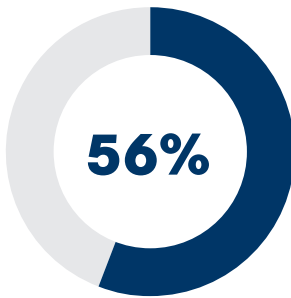
FIGURE. CANCER DIAGNOSIS AND SURVIVORSHIP STATISTICS

Median Age at Diagnosis (years)



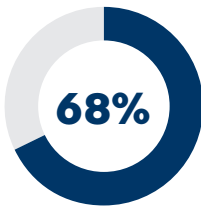
ALL indicates acute lymphocytic leukemia; AML, acute myeloid leukemia; CLL, chronic lymphocytic leukemia; CML, chronic myeloid leukemia; HL, Hodgkin lymphoma; NHL, non-Hodgkin lymphoma.

More than one-half

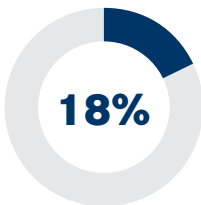


of survivors received a diagnosis within the past **10** years.

The majority of cancer survivors

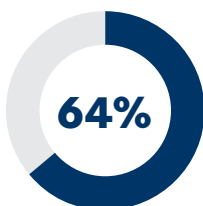


were given a diagnosis **≥5** years ago.



were given a diagnosis **≥20** years ago.

Almost two-thirds of survivors



are aged **≥65** years.

Cancers in children and adolescents



Cancer survivors aged **birth to 14 years**

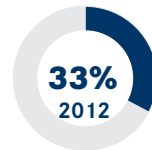
65,850

Cancer survivors aged **15-19 years**

47,760

Increase in women with nonmetastatic disease in 1 breast who seek contralateral prophylactic mastectomy

AGE: **20 - 44 years**



AGE: **≥45 years**



Estimated number of survivors by tumor site: 2019 versus 2030



Men

Cancer Type	2019	2030
Prostate	3,650,030	5,017,810
Colon and rectal	776,120	994,210
Melanoma	684,470	936,980
Urinary bladder	624,490	832,910
Non-Hodgkin lymphoma	400,070	535,870
Kidney and renal pelvis	342,060	476,910



Women

Cancer Type	2019	2030
Breast	3,861,520	4,957,960
Uterine	807,860	1,023,290
Colon and rectal	768,650	965,590
Thyroid	705,050	989,340
Melanoma	672,140	888,740
Non-Hodgkin lymphoma	357,650	480,690

Report Highlights Struggle to Help Survivors Prepare for Life After Treatment

Jason Harris

A STRONG UNMET NEED for survivorship care plans (SCPs) exists in the cancer treatment community and better follow-up is required for patients who have moved on from treatment and are experiencing its aftereffects. Those are among the conclusions of a report based on findings from separate surveys by the Association of Community Cancer Centers (ACCC) and the National Coalition for Cancer Survivorship (NCCS).

Most institutions (83%) included in the ACCC survey require SCPs to meet their Commission on Cancer accreditation needs, but only 54% said they provide SCPs “very often” and 20%, for every patient. Moreover, fewer than half (45%) of patients included in the NCCS survey reported relying on aftercare information provided by their oncologist, and few patients regard the oncologist as the “go-to” resource for such information.



Marilyn Dans

The SCP is defined as a treatment summary and follow-up care plan that may be developed at any point along the treatment path. The National Academy of Medicine has long supported the use of SCPs to manage long-term and late adverse effects of treatment and to facilitate coordination of treatment among the patient, oncology care team, and primary care team.

The number of cancer survivors is expected to grow to more than 20 million by 2026, up from 16 million adults and children with a history of cancer in 2016. The authors of the survey report concluded that there is a need not only for greater use of SCPs, but also training for oncology teams and greater integration and prescribing of nonpharmacologic supportive care services.

The findings “clearly illustrate the emotional and financial challenges that cancer survivors face, both during and long after their treatment. While survivors feel their physical needs are being addressed, they are not getting the help they need for some of the most frequent and severe side effects,” the authors wrote.

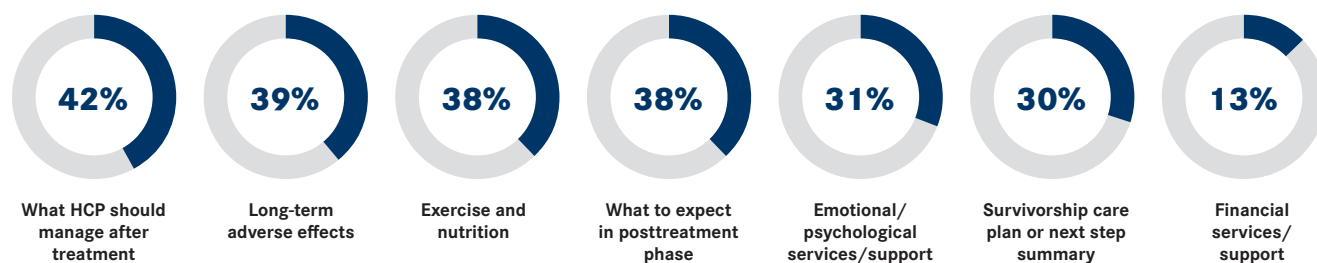
The findings “clearly illustrate the emotional and financial challenges that cancer survivors face, both during and long after their treatment. While survivors feel their physical needs are being addressed, they are not getting the help they need for some of the most frequent and severe side effects,” the authors wrote.

TABLE. STUDY DEMOGRAPHICS

ACCC Member Survey, N = 93	
Nurses or nurse practitioners	69%
Practice Location	
Nonteaching community hospitals	31%
Academic medical centers	40%
Private practice	17%
Freestanding cancer centers or prospective payment system-exempt cancer hospitals	11%
Most Common Tumor Types Treated	
Lung cancer	95%
Melanoma	58%
Colorectal cancer	51%
NCCS Survey, N = 1380	
Predominantly women and white participants	NA
Skewed toward higher socioeconomic status (income and education)	NA
Type of Insurance	
Private insurance	59%
Medicare beneficiaries	24%
Medicaid recipients	9%
Breast cancer survivors	One-third
Health Status	
Good	44%
Fair	33%
Poor	12%
Other	11%
Patient Health Status	
Completed/not in active treatment	~50%
Receiving treatment for an initial diagnosis	28%
Recurrence	19%

ACCC indicates Association of Community Cancer Centers; NA, not available; NCCS, National Coalition for Cancer Survivorship.

FIGURE. FREQUENCY THAT KEY TOPICS ARISE AFTER TREATMENT



HCP indicates healthcare provider.

For its survey, the ACCC queried its membership of healthcare providers (HCPs); 93 participants responded, 69% of whom were nurses or nurse practitioners. The NCCS surveyed 1380 survivors treated at 9 member institutions (TABLE).

Twenty-seven percent of patient respondents received treatment with immuno-oncology (IO) agents. Lee S. Schwartzberg, MD, chief of the Division of Hematology/Oncology at the University of Tennessee Health Science Center and chair of the ACCC Immuno-Oncology Institute Executive Committee, told *Oncology Fellows* that patients treated with IO agents represent a new class of survivorship because they don't experience high levels of toxicity with therapy or their disease, as many patients do. They also haven't finished therapy and moved to observation.

"These patients fall somewhere in the middle," he said. "They're getting ongoing therapy, which has few acute toxicities but has the potential for serious, somewhat subtle, development of late toxicities."

The report said that across the broad cohort of patients surveyed, 16% said they did not discuss aftercare with an HCP. Most (55%) rely on online sources, 39% depend on support groups, and 32% turn to patient advocacy organizations to find survivorship resources. Of patients who discussed aftercare with an HCP, 54% initiated the conversation.

Survivors had 5 primary concerns post treatment:

1. Getting/keeping health insurance (45%)
2. Having the financial support patients felt they needed (42%)
3. Managing ongoing adverse effects (42%)
4. Uncertainty about the future (41%)
5. Having enough energy to get through the day (39%)

Survivors reported looking for information on topics such as managing long-term symptoms, alternative medicine, insurance coverage, and exercise. However, less than one-third of respondents described their HCP as "very helpful" in responding to their main concerns, particularly those relating to emotional, insurance, and financial issues.

Only 42% of HCP respondents reported discussing referrals to other providers for management of post-treatment care or the availability of financial services and support. Although most programs provided nutrition programs or mental health support groups for survivors, only 43% provided information about returning to work, 38% discussed integrative medicine, and 27% offered programs for managing long-term symptoms.

Cancer survivors treated with IO agents were more satisfied with their aftercare than survivors treated with other modalities. Compared with other respondents, those survivors were more likely to say they felt prepared to transition to post treatment (85% vs 66%) and that their HCPs had been very helpful in responding to their financial (32% vs 15%) and emotional (32% vs 23%) concerns. They expressed many of the same financial and psychosocial concerns as other patients but were more likely to be concerned about having regular physician appointments (41% vs 28%) and starting a family or having children (25% vs 15%).

The authors of the report said that patients assigned to IO tend to be younger, wealthier, and better educated than other respondents. Schwartzberg said IO patients' higher levels of contentment with posttreatment preparation appear to stem from the nature of IO treatment itself.

"The reason they do better is that the checkpoint inhibitors have very little acute toxicity outside of the autoimmune effects—the adverse effects of interest that occur as an on-target effect of stimulating the

immune system,” he said. “Other than that, and some mild general constitutional effects like fatigue, as single agents, the IO agents tend to have little toxicity.”

Barriers to Aftercare Planning

Eighty-six percent of HCPs said their institutions adopted National Comprehensive Cancer Network guidelines to support survivorship care. Eighty percent of HCPs reported discussing possible long-term treatment effects with survivors, 76% reported discussing what to expect in posttreatment phase, and 71% reported discussing the availability of emotional or psychological support services. Just 56% discussed a posttreatment care plan or provided a next-step summary to patients transitioning to posttreatment care.

Schwartzberg said that patients treated with IO agents require ongoing monitoring for toxicities. Nonetheless, the survey found that 16% of cancer programs do not follow patients post treatment to monitor for immune-related adverse events. Only 22% of programs have a formal follow-up procedure, while 34% depend on informal follow-up and 19% on patient self-reporting.

There is no doubt HCPs recognize the value of SCPs. Twenty-one percent of these respondents said targeted IO guidelines are key to survivorship care planning for patients who completed treatment, as well as for those who have responded to and continue to receive therapy.

Schwartzberg feels that the survey results underrepresent the physicians who have these conversations over time but generally don’t have a specific aftercare discussion with patients. “Having a formal session to talk about what was done and the long-term side effects remains elusive. It hasn’t flowed into the workflow of taking care of patients,” he said (FIGURE).

Getting or maintaining health insurance and having financial support were patients’ primary post treatment concerns.

He added that drafting an SCP is time consuming, as such meetings can take up to an hour or more. “It’s difficult for an oncologist who’s seeing new patients who require active therapy to fit this into the schedule.”

He went on to say few, if any, oncologists or other providers receive formal training in survivorship, which explains the reluctance to engage in these conversations. Most programs are created ad-hoc at individual institutions.

Forty-eight percent of programs said that IO survivorship care planning is a significant challenge due to the lack of specialized recommendations and considerable variation in the number of patients who transition to posttreatment survivorship care. At 5% of institutions, most patients make that transition. In contrast, fewer than 10% of patients do so at 18% of institutions.

Schwartzberg recommends tackling the problem by creating survivorship/aftercare teams led by advanced care practitioners within the oncologist’s office to serve as a resource for patients.

“We’ve been struggling, and this report is another example, to quantify the difficulty of creating a formal mechanism for survivorship and for aftercare,” he said. “As a specialty, we have to pay attention to this. This report highlights the difficulties that are still seen probably a decade on from the recognition that survivorship planning and communication is important for patients.” ■

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Association of Community Cancer Centers. Elevating survivorship: results from two national surveys. ACCC website. acc-cancer.org/docs/Documents/oncology-issues/articles/mj19/mj19-elevating-survivorship. Published May-June 2019. Accessed June 7, 2019.



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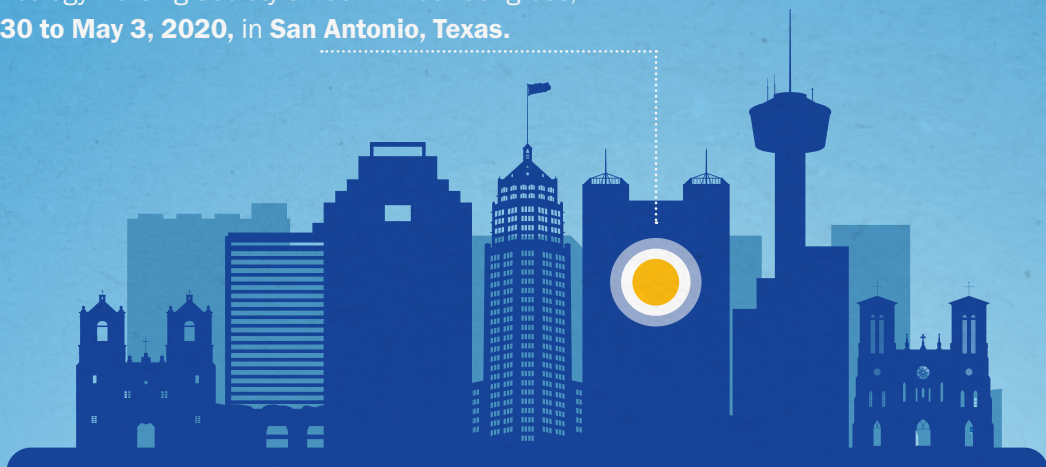
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First Multilingual App for Breast Exam Aims to Improve Early Detection

Jason Harris

IN MAY, THE PINK Luminous Advocacy Project introduced the Breast Awareness app, the first multilingual, unisex breast self-examination application. Although the nonprofit Pink Luminous organization is tasked with supporting breast health in underprivileged



Marilyn Dans

communities, CEO Marilyn Dans maintains that the app is meant to encourage self-examinations across the population.

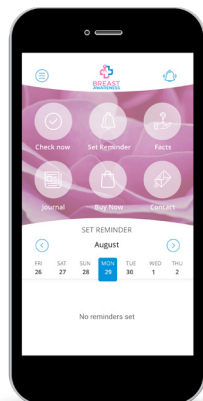
“In all the places we’ve gone and the women we’ve talked to, women feel uncomfortable with breast self-examination, so the app makes it

easier,” she said in an interview with *Oncology Fellows*. “[The app] is trying to make self-examination really simple, trying to educate and empower individuals to live an awareness lifestyle, to embrace the awareness lifestyle, to make it part of their routine.”

According to an analysis of the Surveillance, Epidemiology, and End Results database, the incidence of breast cancer with distant involvement at diagnosis increased by 2.07% annually in women aged 25 to 39 years from 1976 to 2009. Over the study period, the increased incidence was particularly acute among black (annual percentage change, 3.50%) and Hispanic women (annual percentage change, 2.67%).¹

Dans said that an increase in diagnoses among younger women, whose mammograms often are not covered by insurance, inspired Pink Luminous to develop an app to assist these women in particular and, more generally, anyone at risk for breast cancer. The idea was to create something to walk these men and women through a self-exam.

The Pink Luminous Advocacy Project supports and promotes breast cancer awareness in places where



education and, specifically, medical education are limited. The organization’s ultimate goal is to “save lives at a global scale by offering educational tools focused on increasing breast health awareness.”

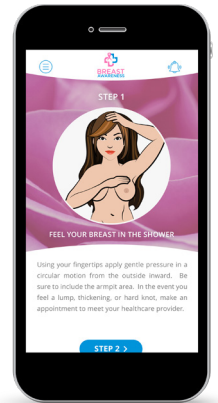
The app presents instructions for self-examination, similar to recommendations from the American Cancer Society, in both text and voice-over formats. It is

currently available in English and Spanish and will download in the language set on the user’s device. Dans said a forthcoming update will include more languages.

Early detection is key to successful breast cancer treatment, and regular self-examination can help detect the disease early. The Breast Awareness app serves to educate users and help them become more familiar with their bodies. Dans says it gives individuals the tools to perform routine breast health examinations at home while teaching them how to detect possible abnormalities that require immediate action.

The app, available for Apple and Android, could benefit black and Hispanic women, who are often diagnosed with advanced disease and are more likely to die from breast cancer compared with white women, and women who face cultural barriers to screening. In a meta-analysis of 39 studies encompassing more than 5.8 million patients, black (OR, 0.81; 95% CI, 0.72-0.91) and Hispanic (OR, 0.83; 95% CI, 0.74-0.93) populations had lower odds of undergoing screening mammography compared with the white population.²

These disparities appeared in both the 40-to-65 age group and the >65 age group of black women and in the 40-to-65 age group of Hispanic women. No difference in mammography utilization was observed between Asians/Pacific Islanders and whites (OR, 1.82; 95% CI, 0.09-38.41).



Lead author Ahmed T. Ahmed, MD, MS, said in an interview with *Radiology Business* that early detection can reduce the risk for disease-specific death by 20%. He added that factors including socioeconomic status, insurance coverage, location, culture, language barriers, and religion play a role in screening rates.³

Muslim women, for example, are not routinely screened and treated for breast cancer because breast exams and mammograms are not widely accepted in that community, Ahmed said.

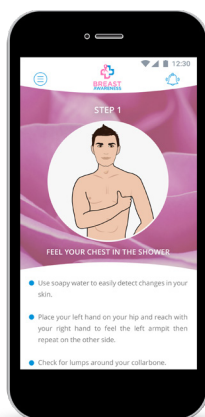


Giselle B. Ghurani, MD

“The purpose is to be aware of what your normal breasts feel and look like, to detect any changes, and then to bring up those changes with your doctor,” said Giselle B. Ghurani, MD, a gynecologist/oncologist with Mercy Hospital in Miami, Florida, and a member of the Pink Luminous advisory board. “The next step would be to raise concerns with a physician, usually a gynecologist.

“I treat both healthy women and women who are at increased risk for breast and ovarian cancers, as well as women with [gynecologic] cancers. Early detection and disease prevention have always been a big passion of mine because I see how devastating the cancer diagnosis and treatment can be for the patient, the family, and the whole community.”

The app also allows users to create a philanthropic channel and raise money for the Pink Luminous Advocacy Project. Those funds go to supporting the distribution of Pink Luminous Breast devices to women in need, the donation of sonogram machines to breast cancer clinics, and the construction of health facilities in developing countries. ■



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Hope Versus Expectation: A Critical Distinction

Maurie Markman, MD



MAURIE MARKMAN, MD, editor in chief of *OncologyLive*[®], is president of Medicine & Science at Cancer Treatment Centers of America and clinical professor of medicine, Drexel University College of Medicine, Philadelphia, PA. maurie.markman@ctca-hope.com

THE ONCOLOGY, GENERAL MEDICAL, and lay literature contains considerable commentary from clinicians, researchers, and public policy academics regarding a variety of topics. Such commentary is often poignant, enlightening, and provocative. Further, regardless of the quality of the writing or content of the material, in our society, such expressions of opinion should never be discouraged.

However, when individual or group perspectives are publicly stated (eg, peer-reviewed published articles, blogs, etc) it should be anticipated that others may comment upon or openly challenge the content or the conclusions of the writer(s).

Here, my goal is to do just that: to vigorously disagree with an opinion expressed by an academic oncologist in an article published in a recent issue of a high-impact health policy journal.¹ In the article in question, the author highlights his experience with a particular patient who was under his care and who expressed a strong desire to receive aggressive treatment for her malignancy. The author notes the difficulty experienced during the patient's cancer journey and follows this with a discus-

sion of his belief that oncologists, on the whole, tend to excessively focus on being "rescuers." He writes, "We see ourselves as heroic protagonists in the life-and-death battle against cancer."¹

I find no fault in these specific words or conclusions, as they apparently reflect facts (eg, stated desire of a patient and subsequent clinical course) and the experience of the oncologist writer among his professional peers.

The issue that must be highlighted is the writer's striking objection to the views of the late Dr Stephen Gould, an internationally renowned evolutionary biologist who, in his landmark essay *The Median Isn't the Message*, described how statistics emboldened him in his battle with cancer.² In this truly masterful paper, Gould, after receiving a diagnosis of peritoneal mesothelioma, a malignancy with a dismal median survival, chose to focus on the "right-skewed" distribution of the reported survival curve, rather than the median survival figure, as he faced both treatment and his overall pending cancer journey. What it showed him was that he had potentially years to live, rather than a



It is critical to inquire what is wrong with hope, if it helps patients through their journey while not interfering with likely necessary end-of-life decisions when these are required to be made.

median of 8 months, based on his relative health.

The oncology editorialist, in describing Gould's very carefully and truly magnificently crafted words, states, "If patients focus only on the tail of the survival curve and strive to become exceptional responders, then, by definition, the overwhelming majority will be unprepared for their fate. Thus viewed, 'The Median Isn't the Message' is dangerous advice."

At this point, it is important to note the critical distinction between *hope* and *expectation* as verbally and emotionally expressed by patients with cancer. The significance of hope, or deep hope, for patients facing a terminal illness was highlighted by Jack Coulehan, MD, MPH, as a critical measure to help many patients deal more effectively with the potentially devastating impact of cancer on the individual and the family.³

But how do such possibly very strong personal feelings of hope translate into patient-stated goals of cancer treatment? Academic researchers have reported rather striking differences in survey responses provided by patients with cancer regarding their own confidence about beating the odds compared with established population-based survival rates. For example, in a widely quoted paper, investigators noted that more than 70% of patients (n = 1193) with advanced lung or colorectal cancer stated that "chemotherapy might be curative" when the objectively established realistic opportunity for cure during this specific era was vanishingly small.⁴ In a second study examining patients (n = 384) receiving radiation therapy for stage IIIB or IV lung cancer, the investigators reported that "64% did not understand that radiation therapy was not at all likely to cure them."⁵

These reports have appropriately highlighted the realistic potential that such highly unrealistic assumptions regarding outcome may unfortunately influence critical life decisions, including delay or avoidance of palliative/hospice care as well as inadequate personal assessment of the risk for serious treatment-related toxicity. Further, unique decisions in individual situations, such as purchasing an expensive home or starting a new business, may be harmful to the future of the patient's family. Finally, putting off acceptance of mortality may compromise a patient's ability to develop a timeline for

important personal matters, such as taking a meaningful trip or spending time visiting family.

However, the essential question to be asked here is whether these responses to academically based survey questions represent not an expectation of unrealistic outcomes but rather solely personal *hope*, which will permit many individuals to more effectively deal with the emotional and physical impact of cancer on themselves and their families over the course of the disease.

What is most important to highlight here is that there is simply no inherent reason to conclude that hope, as just defined, equals expectation. In a recently published, rather focused, and in-depth analysis of patients with advanced cancer (n = 234), only 12% (vs >70% in other reports) stated that cure was their personal goal of therapy.⁶

Finally, it is critical to inquire what is wrong with hope, if it helps patients through their journey while not interfering with likely necessary end-of-life decisions when these are required to be made.

Therefore, when the oncologist editorialist declares that a focus on the tail of the curve "is dangerous," even if this enables patients to more effectively deal with what must be considered among the most difficult of all possible life experiences, one must very strongly question, or simply refute, his conclusion and perhaps even his apparent authority as a provider to declare how individual patients should optimally deal with cancer. ■

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PAYING IT FORWARD:

A Journey From Patient to Investigator

Kristin Anderson, PhD

Postdoctoral Research Fellow

Fred Hutchinson Cancer Research Center

“HELLO. IS THIS KRISTIN Anderson? This is the breast center calling with the results of your biopsy. I am so sorry to give you this news, but the results indicate that you have a malignant form of breast cancer, and we’re going to need you to come in to talk about a treatment plan. Can you come in today?”

I don’t remember much after this phone call, but I do remember crumbling to the floor in tears. Not the delicate misty tears some people experience at the climactic end of a tragic movie or at those commercials about animals being kept in squalid conditions, but the heaving, unable-to-breathe sobs of someone whose world has just collapsed. Shock, fear, denial, and overwhelming sadness hit me all at once.

I had just turned 28. I had just started my fourth year of graduate school studying immunology. I was so close to finishing my first scientific paper and starting my doctoral thesis. I was in the early stages of a new relationship that had real long-term potential.

I had way too much going on, both personally and professionally, to have cancer.

I fully recognize this will come as no surprise, but that’s not how cancer works. Cancer doesn’t care about hopes, dreams, goals, or commitments. Cancer just is. And although the impact it can have on a patient’s life is completely unpredictable, it’s a pretty safe assumption that the impact is going to be significant.

I consider myself incredibly fortunate. I was assigned a great medical team at the University of Minnesota Masonic Cancer Center, a Comprehensive Cancer Center with an “outstanding” designation from the National Cancer Institute. Even though I had aggressive, triple-negative disease, driven in part by an inherited *BRCA1* mutation, drugs had been discovered that showed great efficacy against my type of cancer. My graduate student health insurance covered almost every single bill. And my life was only partially put on hold: I went to chemotherapy appointments on Fridays, slept all weekend (and



usually through Monday), then headed into the lab Tuesday through Thursday. Then the cycle would repeat.



Kristin Anderson, PhD

My progress in the lab slowed immensely, and I was pretty much always exhausted. But I was able to keep showing up. Every week. For 6 whole months.

I cannot explain the motivation behind pushing myself that hard. Part of me chalks it up to equal parts perseverance and downright stubbornness. In retrospect, it's more likely that I just needed something, anything, to help me feel as if I still had some control over my life. I think I needed to feel as though I was still making progress, however small, toward my goals. Perhaps this mind-set helped me feel I was going to live, to maintain hope when I was terrified by the possibility of death. Most weeks, I had the energy to do this without any issues. But some weeks I didn't, and I am incredibly grateful for my caregivers, friends, and colleagues who recognized that some weeks were better than others and supported me through the entire ordeal.

After chemotherapy and surgery, I went back to school full time with a renewed passion to finish my degree. Even after weekly therapy was done, I encountered more setbacks. I tried to match my peers' ability to work 14-hour days and memorize and regurgitate details from the (sometimes apparently random) primary literature. But my diminished stamina and the fog of chemo brain kept me from full success.

I recognize now that these self-imposed hurdles were ludicrous. Nonetheless, despite stumbling, I managed to publish 2 primary-author articles and graduate in a bit more than 5 years.

Disease free and PhD in hand, I faced another massive challenge: What did I want to study for the rest of my career? What did I want to do with my life? This is a huge decision for everyone, but a few years earlier, I hadn't been sure I'd get the chance to even have a career to worry about.

I agonized over leaving Minnesota, which I knew was inevitable if I wanted to stay with my partner (which I did). My whole life up to that point was in Minnesota. My entire support network was in Minnesota—my family, my friends, my physicians. What would I do if my cancer came back?

Finally, I had an epiphany: The chemotherapeutic drugs I was given were discovered by investigators. As an investigator, I had an incredible opportunity to pay it forward, and I could not throw that away. Within 5 minutes, my future was decided. I was going to use my immunology training and expertise to study cancer immunotherapy.

Fortunately, I have an incredible network of colleagues who encouraged me to talk to Phil Greenberg, MD, an internationally recognized leader in the field of cancer immunotherapy and T-cell engineering. I've now been a postdoctoral research fellow with Dr Greenberg at the Fred Hutchinson Cancer Research Center (Fred Hutch) for about 5 years. Without any exaggeration, I think I have the best job ever.

My research involves engineering T cells to recognize and kill cancer. We focus on making effective therapies for tumors that have been notoriously hard to treat, like ovarian and pancreatic cancers. My team identifies obstacles that prevent T cells from effectively killing solid tumors, and then we use preclinical models to evaluate novel ways to effectively overcome those obstacles. Once we've found an approach that works in our models, we test it in human cells to see whether our approach can also work in patients. We now have several tactics with translational potential, which is incredibly exciting and fulfilling.



And research is not the only way I have found to pay it forward. My experience is a classic example of why early detection is critical. To share what I've learned with the community, I became an instructor for the Seattle Rivkin Center's CanCan education program. CanCan provides free workshops on the signs and symptoms of breast and ovarian cancers and encourages community members to be proactive about their healthcare.

I also try every year to participate in at least 1 fund-raising event to support research. I regularly participate in Fred Hutch's Obliteride, the Rivkin Center's Summer Run, and the American Association for Cancer Research's Runners for Research 5K. This summer, I am going to up it a notch. As part of a Climb to Fight Cancer team, I'm headed to Tanzania to climb Mount Kilimanjaro and help raise money to support cancer research at Fred Hutch. Because cancer is really hundreds of different diseases, and, even if successful, my own studies can help only a fraction of patients. By supporting other investigators, I hope to help many more. ■

Even Superheroes Can Burn Out

Yara Abdou, MD

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I WAS 13 YEARS OLD when I decided to become a doctor. At that age, I could not have guessed how challenging that path would be. Seven years of being immersed in textbooks, then 3 years of intensive internship and residency followed by a 3-year fellowship.

Now I am 30 years old and reminiscing about a life built on hard work and sacrifice. A sacrifice of my 20s, sleep, and even health. But apart from being able to prescribe medications, what has changed?

As soon as the title of MD is added to our names, expectations skyrocket, and anything less than perfection turns into a disappointment. We enter a world of tremendous internal and external pressures to flourish, and without knowing it, we join a malicious culture. A culture of toughness and boldness but also a culture where vulnerability is considered a weakness and any

feelings of doubt or fear are buried. A culture that fuels our obsession with perfectionism and fosters unrealistic expectations. A culture that inevitably leads to emotional burnout.

Despite our bravado, our confidence, and our skill, not everyone makes it. I lost a bright, compassionate, and caring colleague during residency. His suicide was a shock to everyone, including his family, because he was a cheerful doctor who had shown no signs of struggle or depression.

Doctors master the art of compartmentalization and disguise. The world sees us as superheroes. We expect to be superheroes. So how can we admit to fear or vulnerability? How can we acknowledge our weaknesses or confess to our exhaustion? How can we set aside our superhero masks without being judged or feeling shame?



Yara Abdou, MD

The truth is that physicians are more than twice as likely to kill themselves as the rest of the population. Around 400 doctors in the United States commit suicide every year, more than 1 per day, a higher suicide rate than that of any other profession.¹ And for every doctor who dies by suicide, thousands more contemplate the act. Good people are dying, friends of mine and friends of yours. It's time for a change.

Our jobs can often lead to complete physical and mental exhaustion, yet our culture has taught us to suck it up and refuse to seek help. Oncology, in particular, is one of the most stressful medical specialties. It takes a great amount of physical and emotional energy to care for patients with terminal cancer. Watching patients deteriorate and suffer, in addition to repeatedly breaking bad news, can be emotionally draining.

Results of a qualitative study among oncologists showed that exposure to frequent patient death motivated clinicians to improve patient care (66.7%). However, it also led to exhaustion (62.0%), burnout (75.9%), and compartmentalization of feelings at work and home (69.6%).²

Furthermore, we are expected to stay ahead of a constantly advancing field and novel treatment strategies, which is a challenge on its own.

Coping Mechanisms

So how do we deal with careers that often lead to complete physical and mental fatigue? We often hear the same suggestions: mindfulness classes, meditation, wellness retreats, resiliency training. These are great. However, doctors are resilient by nature. The problem is not our lack of resiliency; it's numbness to our feelings. We see far too much pain to pretend as though it's nothing. We need to be able to voice our worries and fears, share our vulnerabilities, connect with our feelings, and find comfort in our peers. It's time to put an end to a culture that supports bravado and intolerance. Asking for help is *not* a weakness.

Emotional resilience fluctuates over time, and recognizing when this resilience is wearing away is important. Acknowledging our feelings is the first step toward a healthier state of well-being. We can start by simply asking ourselves at the end of each day, "What are the 3 most difficult things I had to deal with today?" Once we are comfortable with identifying our own feelings, we then become capable of sharing these feelings with friends and colleagues.

Talking about those stressors is an important step in fighting burnout. A study done at Mayo Clinic found that

giving physicians time to spend with their colleagues in small groups for private discussions provided them with mutual support to deal with challenges, resulting in lower burnout, greater well-being, and improved job satisfaction.³

A shout-out to all my friends and colleagues in residency and fellowship who helped me become the resilient physician I am today. It is vital to encourage community at work and cultivate an environment of collegiality and support.

“It's time to put an end to a culture that supports bravado and intolerance. Asking for help is not a weakness.”

— YARA ABDOU, MD

We all go through a similar path of struggles and challenges, so why not share our fears with one another? Pamela Wible, MD, is a family physician in Eugene, Oregon, who has worked to combat physician suicide and burnout since 2005 and encourages healthcare providers to defend and protect one another. As she put it in a 2015 Ted Talk, "If we all shine our lights together, then there is no darkness to fear."³

Being a physician is not just a job, it's a calling—a calling to be that superhero who saves lives. We have chosen a long and difficult path filled with ongoing daily sacrifices, yet we take pride in the work we do. Nonetheless, it is crucial to recognize that everyone experiences burnout, even superheroes.

There is no higher calling than being able to help people in need and alleviate suffering. However, we can't give patients care that we have never received. Therefore, let us care for ourselves, and care for one another. Only then we can fulfill our calling and be true superheroes for our patients. ■

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AFTER YOUR FELLOWSHIP, TAKE A **BREAK?**

IMAGINE YOU ARE APPROACHING the end of your fellowship training. Soon all the arduous years of study since medical school will be behind you. You may have even secured your dream job by now or be winding down your search. One question: What are you going to do between completing your fellowship and starting your new job? Rather than letting this be an afterthought, give the question more consideration, especially because for many of us, this may be the only opportunity for a long break before retirement.

During my fellowship training in Chicago, Illinois, I frequently took care of patients who did not speak English. With Chicago as diverse as it is, I treated patients who spoke Spanish, Cantonese, Mandarin, and Polish. For translation, we relied on a service we could reach by phone or tablet. The reception was often poor, tablets were limited, and it seemed patients always remembered 1 more very important question moments after we had disconnected the call.

Hematology/oncology, like all medicine, depends on clear communication and a good rapport with patients. So I decided to learn Spanish to overcome the limits of technology. Part of learning a language is

also learning the culture, so I tried to immerse myself in that as well.

Given my desire to improve my Spanish, especially if I wanted to remain in Chicago, and my curiosity to experience healthcare firsthand in parts of the world other than the United States and Zimbabwe, where I earned my medical degree, I developed the urge to practice, if only briefly, in another country.

During one of my vacations while in fellowship, I visited Colombia, where everyone speaks Spanish and very few speak English. I met a linguistics professor from London just starting a 1-year sabbatical, most of which she was planning to spend in South America. I told her I wished I had the opportunity to do something similar. “So why not?” she answered. I told her I was in fellowship. And she replied, “What about when you get done with fellowship?”

No prospective employer would likely allow me significant time off prior to my contract for something outside traditional reasons. Later on, when I was on



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my own, I thought about my excuses. Were they valid? Or was I just afraid of trying something different?

I started online by researching career breaks and sabbaticals. Other professions seemed to accept and encourage the practice, but I didn't find much information related to physicians, especially in the United States.

As if by fate, I came across a blog (bit.ly/2SocZSY) by a US-based physician, Jonathan Kirsch, MD, who went to Cali, Colombia, while on a 1-year sabbatical from the University of Minnesota. He outlined his experiences in the country and gave practical advice on topics such as finding a place to live, getting health insurance in a foreign country, and determining how much to save before leaving.

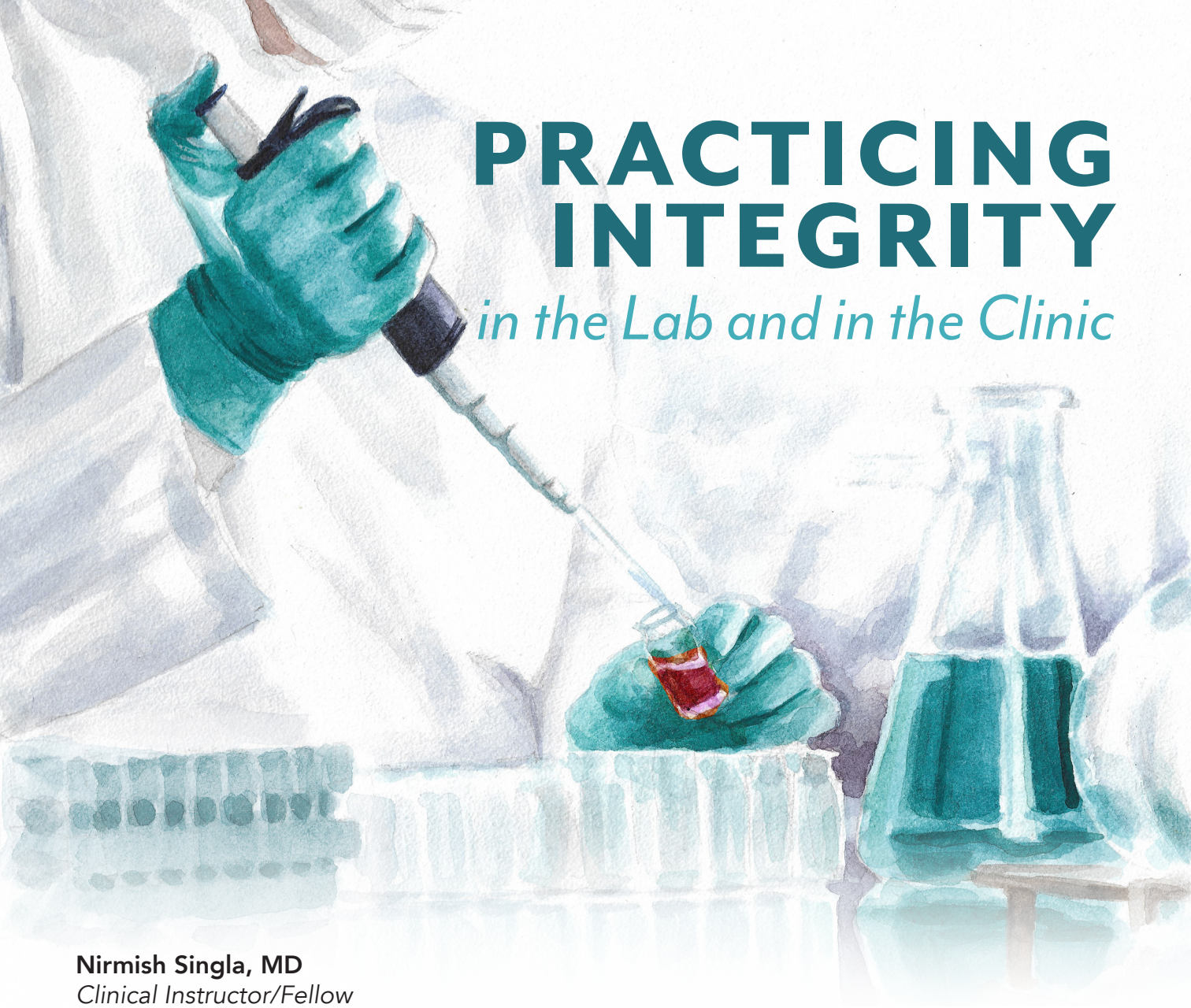
It seemed reasonable, and the worst any prospective employer could say was no. If I was ever going to do this, the transition from fellowship would be my best, if not my only, opportunity, and I didn't want any regrets.

What I found surprising was how others responded to my plan. At my midyear review, my program director wanted to know more about my plan. Even potential employers I met with were open to both the amount of time I wanted to take and my reasons.

Eventually, I went back to Colombia and settled in the second-largest city in the country, Medellin, the City of Eternal Spring. San Vicente Fundación, a teaching hospital associated with the University of Antioquia, caught my interest. I emailed them my request, and they were excited to receive me. As I would later learn, they often host fellows from Europe who go there for up to 6 months at a time. I figured 6 months in the hematology/oncology department would be just right for me.

I obviously did not know what to expect and went into the whole project with an open mind. I learned more Spanish than I had anticipated, even though I haven't been able to shake my accent. I had more free time to prepare for boards and to read in general. I traveled throughout the region. I found my other foot in salsa—learning the dance is a prerequisite for living in Colombia. It is amazing what you can do and learn in 6 months.

If you ever have even the slightest inkling to take a career break or a sabbatical after fellowship for nontraditional reasons, please give it a shot. Employers are more accepting than you think, and you may land your dream job not in spite of your sabbatical but because of it. ■



PRACTICING INTEGRITY

in the Lab and in the Clinic

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RESEARCH UNDOUBTEDLY FORMS THE backbone of our medical knowledge. Whether this comprises basic science research, translational research, clinical trials, or outcomes and epidemiological research, every form plays a key role in the pipeline of scientific discovery, which naturally builds on itself.

Research integrity, then, is a crucial responsibility of any scientist. Scientific publishing has enabled the wide dissemination of knowledge gleaned from research. This is critical for communication with other scientific investigators and potential collaborators, physicians who care for patients, and even patients themselves, who may rely on some combination of

journal articles and the media to understand their diagnoses and options.

Integrity means objectively presenting results without overselling conclusions and, more important, not falsifying data. Indeed, research relies on the generation of hypotheses, but investigators must recognize that hypotheses are not always correct. We cannot simply make our data fit our hypotheses; rather, we must acknowledge that the deviations in our observations from our expectations carry importance and may even result in serendipitous discoveries.

With discovery come more questions and hence more opportunities for research. Rather than just

searching for answers, much research entails asking the right questions, ones that ultimately advance the medical field and lead to new treatment options for patients on a larger scale.

Although the excitement of conducting scientific research lies in the ability to advance knowledge and make new discoveries, the purity of research is too often tainted by political motives. In academia, research successes often correlate with career promotion, increased funding opportunities, and visibility and reputation within the field. These factors impose external pressures on the need to publish, as a scientist's h-index and quantity of publications form the basis for academic currency. As a result, negative findings are often released quietly or even buried despite their vital importance.



Nirmish Singla, MD

Responsible investigators must be careful not to allow these pressures to affect the integrity of their reporting. Research misconduct carries with it a substantial cost, with potentially dire consequences for society. Beyond affecting the funding and reputation of individual scientists and institutions, misrepresented data and their portrayal by the media may have a broader impact, affecting scientific colleagues or collaborators and the public health at large.

Patients have entrusted physicians and investigators with their lives. We have been granted a unique privilege and opportunity to partake in their care and to use their tissue or information to generate data. In turn, we owe it to them to practice our trade responsibly. This means conforming to the standards of regulatory bodies, protecting privacy, and engaging in a proper discussion of the risks, benefits, and alternatives of participation in a research study while appropriately addressing any questions the patient may have—that is, respecting the “informed” component and voluntary nature of informed consent.

Ethics in the Clinic

The tenets of the Hippocratic Oath—by which all physicians must abide, the ethical code that forms the moral basis for the privilege of practicing medicine—are principles we must uphold in research, which is itself a privilege. Traditionally, these include beneficence (supporting the best interests of our subjects and patients), nonmaleficence (doing no

harm to subjects and patients, ie, *primum non nocere*), justice, and respect for autonomy (ensuring the capacity of subjects and patients to make an informed, uncoerced decision). Contemporary extensions of the oath include the realms of veracity and confidentiality, which are undoubtedly just as critical in the research setting as they are in clinical practice.

That same integrity must extend to our day-to-day work in the clinic and our interactions with patients. As physicians, we have the privilege and responsibility of managing individual patients. Patient management does not simply mean equating a diagnosis with a treatment. Instead, we are tasked with educating the lay public about the knowledge and limitations in our field to enable our patients to make shared, informed decisions about their care.

We must learn the art of synthesizing data and distill this information to patients in an interpretable fashion. At the same time, we must stay abreast of the latest treatments and technologies while recognizing the potential drawbacks and limitations of emerging developments.

To communicate our findings with utmost precision, we may be enticed to use technical, often subspecialized, jargon. Although this is necessary for publishing in scientific journals and communicating with other experts, it is important to communicate research with the lay public and the media in an accurate yet understandable manner, tailored appropriately to the audience—a skill set analogous to communicating with patients in the clinic. Striking the appropriate balance between accuracy and clarity can indeed be challenging, especially when communicating with a populace who may misunderstand or misconstrue medical information.

Likewise, as the media and other nonscientific sources often serve as the primary information outlet for the public, the onus is on investigators and physicians to ensure that data are not only reported but also translated accurately to these sources.

Not all physicians are investigators, and vice versa; however, a mutual reliance exists. Research forms the foundation of clinical guidelines and evidence-based medicine, and when its integrity is compromised, the quality of patient care may, too, suffer. Thus, those who engage in research activity of any kind must recognize the multidimensional responsibilities they have assumed and appreciate the potential consequences of their work. ■

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September 17, 2019
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September 19, 2019
State of the Science Summit™: Hematology
Atlanta, GA
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September 24, 2019
State of the Science Summit™: Hematology
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September 26, 2019
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Pittsburgh, PA
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October 3, 2019
State of the Science Summit™: Lung Cancer
Cleveland, OH
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October 16, 2019
State of the Science Summit™: Lung Cancer
Summit, NJ
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October 17-19, 2019
IASLC 2019 Latin America Conference on Lung Cancer
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September 18-20, 2019
International Cancer Education Conference
Little America Hotel
Salt Lake City, UT
bit.ly/2YRZvib

October 21-24, 2018
2018 ASTRO Annual Meeting
Henry B. Gonzalez Convention Center
San Antonio, TX
bit.ly/2BVcEMU

October 22, 2019
State of the Science Summit™: Gastrointestinal Cancer
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October 23, 2019
State of the Science Summit™: Breast Cancer
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2019 Oncology Conferences (continued)

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bit.ly/2Me3srj

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