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COVER STORY

OUR PATIENTS' CARE COMES FIRST

Even During
Natural Disasters

By: *Simon Abi Aad, MD*

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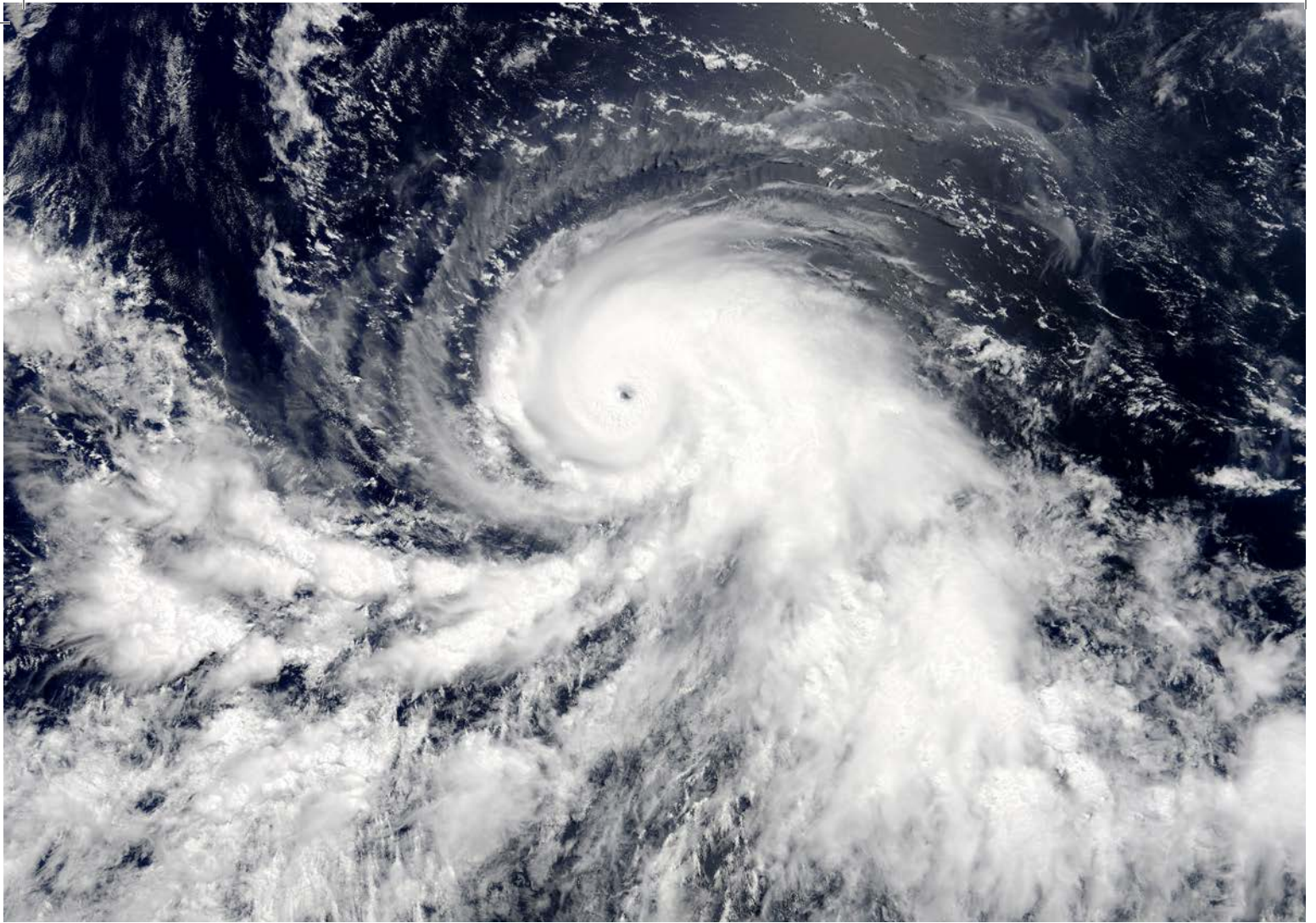
AS A SENIOR FELLOW, one is blessed to have a light call schedule compared with that of our younger peers. Having paid our dues during residency and fellowship, we get the privilege of picking our call schedules and are required to cover just 4 weekends for the whole year.

With 3 call weekends left on my schedule, it was smooth sailing. I was scheduled for the weekend of September 8, 2017, which looked to be a warm but unremarkable Miami weekend. I would be rounding on the patients, taking in new consults, and covering for colleagues who were taking the weekend off. There was some talk and background noise that Hurricane Irma, brewing in the Atlantic Ocean, might make its way to Miami in the coming days. After all, it was hurricane season, and that's a weekly story, nothing to worry about—or so I thought.

I have had my share of calamities during my medical training. I spent a month at a military hospital during wartime in Lebanon, was stuck at Memorial Sloan Kettering Cancer Center in New York City throughout Hurricane Sandy, and was the weekend on-call fellow during the blizzard of 2015, also in New York City. I figured I had enough “when I was your age” stories to tell younger physicians 20 years from now.

Irma had other plans. As the week progressed and the e-mail frequency increased, I soon found out that the hurricane would be making land-fall during my call weekend. The emergency plan was basically for the house staff and attending physicians to pack and head to the hospital on Saturday morning, with no expectations of leaving before getting the green light from the hospital leadership. Every patient who didn't need to be hospitalized over the weekend had to be discharged as soon as possible. All noncurative chemotherapy was put on hold until further notice. This was obviously not the first rodeo for our hospital.

After my fair share of lamenting my fate (a little dramatic here), I was on my way for my 3-day lockdown. When I arrived at the hospital, I found it barricaded as though ready for the apocalypse. No door or window was left uncovered. Only a few entrances were open; they would be locked down at noon that day. »



Hurricane Irma, 2017

Despite the warnings, it was sunny and beautiful outside—the calm before the storm. I walked in, expecting chaos, but it was business as usual for the nursing staff and hospital operations. Everyone was in a good mood and ready to go. I found a place to sleep and created my own area, which I split with my attending physician. I had enough snacks for 3 days. They were gone in 3 hours—stress eating, I guess. Soon after, the hospital was on lockdown. No one could get in or out, wind speeds started picking up, and the only way to know what was happening outside was by watching the TV screens in the hallways and patient rooms. It began.

Cabin fever hit hard. I was isolated from the outside world, with no natural light and no cell phone reception. Going for a walk meant pacing the hallways and visiting patients on the other side of the hospital. No one—neither us nor the patients—could really sleep or eat well. We were more concerned with the goings on outside, and then for ourselves inside. Patients asked me more about what I thought would happen to their loved ones than about what was happening with their treatment and disease. That's not uncommon with people who have cancer; despite having to fight the hardest fight of their life, they always feel that they have to take care of those around them. I never get used to their show of strength, and even though I cannot know where or how they get it, I admire it and accept it.

I spent more time than usual with patients, because time

was the only thing I had plenty of at that point. We briefly discussed their treatment and complaints for the day, and then they always moved on to telling me stories about their last hurricane and how bravely they prepared for it and got through it—how they rebuilt what was lost better than ever. We would end the conversation by comparing their cancer with the hurricane and how they would get through that, too.

In my downtime, I tried without success to study. I just had to follow the path of that big spiral in the sky. On TV, online, on my phone...I never knew there were so many weather apps out there!

After 3 days and 2 sleepless nights with no sunlight to go by, no window to peak through, my body and mind started losing track of time. It's hard to explain, but I soon became disoriented: 3 PM felt like 3 AM and vice versa—not a good feeling.

And then, at the nurses' station, we received an email saying that it was safe to go outside—the worst of the storm had passed. We were advised that some roads would not be accessible because of broken trees and downed power lines, but I didn't read that part. All I wanted was to get out. As I walked through the exit, I could see the first signs of the aftermath—massive trees ripped by their roots lying in the middle of the street, which would require lots of manpower and machinery to budge. Nature's wrath is scary.

After I walked around a bit, watching as people started to clean and fix what was broken or lost, I went back to check



Flooding and property damage in the wake of Hurricane Irma; giving reassurances and hope to patients.

on patients before my relief coverage took over. One of my patients with leukemia asked me when I was going home. “In an hour or 2, I hope,” I replied. She said she was happy that I finally would get some rest in my own bed. “You deserve it. And go shave—you look better without a beard!” she said.

My drive home was a slow one, although the streets of Miami were eerily calm. Not too many people were outside or even around, because most of the city had been evacuated. Some streets were either flooded or so strewn with debris that I had to change routes. Electricity was out in some areas and phone reception was spotty at best, but all in all, I thought, we dodged a bullet. All I cared about was a warm shower and few good hours of sleep. I made it home.

The next morning, I woke up to a phone call from the hospital—I had overslept. I dressed hastily and headed back to work. Just another day on the job. No glory or fame. Life of a doctor, I guess...

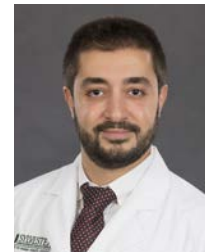
As doctors, we are committed to certain things that most people do not even consider. We work at night, we work during holidays, we work on weekends, we work after hours, we work before hours, we work when everyone else evacuates to safety. We also leave behind our families, our loved ones, and our children to fulfill our duty to strangers, hoping that those we love will take care of themselves. It’s unfair, one might say, and it raises a lot of questions about the work that we do—questions such as “Why shouldn’t I be able to evacuate with my family?”

and “Why should I be separated from my loved ones when it matters the most, to go take care of others?” It’s exhausting and makes you age quicker, plagued by guilt trips every time you think about it.

At the end of the day, that’s what makes our lives as doctors unique and, dare I say, brave. We fight for our patients and for their well-being every single day, rain or shine, hurricane or war. We do it not because we are forced to; we do it without questioning. We never ask if we should do it, for that’s a *fait accompli*; we ask what the best way to do it is.

I had so many questions leaving home the day of the hurricane, not knowing what I would return to, but I never questioned whether or not I should be at the hospital. It was my duty. I could say that doctors have a military-level commitment to their duty toward their patients. That makes us proud! At the end of the day, I made a difference for the fathers, mothers, brothers, sisters, cousins...everyone I took care of during the hurricane. Who knows, maybe I had a role in saving a life or two.

I hope that I don’t keep attracting disaster situations on my weekend call days. I am happy to pass the torch, but if I end up in another hurricane, I can say that I’ve seen enough to be ready! ■



Simon Abi Aad, MD

Addressing a Crisis of Authorship Abuse

By: Talal Hilal, MD

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EARLY ON IN MY TRAINING, an email addressed to 16 physicians made its way to my in-box. Within the body of the message was the following statement: “Each of you are listed as coauthors because of your contribution of cases.”

What started off as a research idea under the supervision of 1 mentor and progressed to hours upon hours of data collection, periodic meetings, and synthesis of results was about to be presented as a collaborative effort that included 16 uninvolved individuals! I paused as I read the email and wondered if I could have asked for their help collecting data. That would have hastened the process quite a bit and legitimized the email. Nevertheless, the abstract was submitted with all additional 16 names. “This must have been a mistake!” I thought. “After all, how often do physicians accept credit for work they were not involved in?”

It was always my understanding that those listed as authors made a substantial, direct, and intellectual contribution to the work. In the case of medical authorship, that meant

contributing to the conception, design, acquisition of data, and actual writing of the article. This was plausible when 2 or 3 individuals authored scientific papers, as was the case from the late 1600s until the 1920s.¹ However, in today’s world, in which a paper written by 1 author raises red flags and multiple authors are the norm, how plausible is it that 20 authors substantially contributed to an article?²

To ensure some form of regulation, in 1979, the International Committee of Medical Journal Editors (ICMJE) established the Uniform Requirements for Manuscripts Submitted to Biomedical Journals. These guidelines³ have been updated periodically and in their most recent format state that authorship credit should be based on (1) substantial contributions toward the work in areas of conception or design, acquisition, analysis, or interpretation of data; (2) drafting the article or revising it critically for intellectual content; (3) final approval of the version to be published; and (4) agreement to be accountable for all aspects of the work in ensuring that questions



related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.⁴ All 4 requirements must be met. These guidelines are adapted by hundreds of journals and form the ethical backbone of medical authorship.

In the shadow of fierce competition for government funding and institutional requirements for research, opportunistic behavior is rising and leaving in its wake what is called authorship abuse. This manifests in many ways, including coercive authorship, in which an author is listed simply because of senior status over junior investigators; honorary authorship, in which one is awarded authorship out of respect or friendship—also known as gift authorship; mutual support authorship, in which 2 or more investigators place their names on each other's papers to increase their perceived productivity within the field; and ghost authorship, in which the true author's name is omitted from the paper for various deceitful or unjust reasons.⁵

Authorship of scientific papers is a mainstay of academic medicine. It does not take long for one to realize that the attraction toward the academic environment has its origins rooted in publishing. Unfortunately, the more time I spend in the academic setting, the more apparent it becomes that in order to publish, I would have to partake in academic misconduct. Perhaps I was naïve enough to have believed that the ethical principles of medical authorship are always upheld or that I can avoid the problem if I so choose. The problem is quite prevalent, as investigators of 1 study estimated that 141 out of 577 (39%) Cochrane reviews have evidence of dishonorable authorship.⁶



Talal Hilal, MD

The ethical principles surrounding medical authorship are clearly not being upheld in various realms of the scientific community and appear to be the most tolerated form of unethical scientific conduct. So, what is the solution?

First, researchers need to realize that the net effect of authorship abuse is profoundly negative. Not only does it place authors who were not intimately involved in the work in a position of responsibility to defend it should the need arise, but, perhaps more importantly, it also discourages junior investigators from further pursuing research when their work is essentially hijacked by the addition of multiple noncontributors masquerading as collaborators.⁶

Second, journals need to list the specific contributions of each author and hold all authors accountable for the integrity of their product. This requires logical thinking when examining the number of authors per article. For example, it is unlikely that 10 to 15 authors are substantial contributors toward the conception, design, and drafting of a case series, retrospective study, or review article. If such a response is reported on the ICMJE form, it should be carefully examined and questioned before it is accepted as final.

Third, limit the number of authors for specific papers. This is more easily accomplished with review articles, editorials,



Authorship abuse is the dark side of collaboration.

and special communications but may be more difficult when applied to original research. An estimate of the number of authors should be applied based on study setting, patient size, and the expected amount of work required. For example, a single-center retrospective chart review of 100 patients is rarely the result of a collaborative effort by 20 authors. On the other hand, multi-institutional prospective clinical trials with thousands of patients are expected to have a larger number of authors.

Fortunately, most impactful journals do follow these guidelines and are keen on maintaining ethical conduct in medical journalism. However, for students, residents, and fellows to attain the highest standards of publication ethics, it is imperative that senior investigators and institutions not only support this endeavor but also consider establishing research policies that minimize authorship abuse. This ultimately will improve research integrity, quality, and productivity if all coauthors participated seriously in the work leading to publication. The attitude that “everyone does it” simply should not be tolerated.⁷

After all, the goal of what we do revolves around the patient and not ourselves. We owe it to our profession to ensure that the ethical principles of medical authorship are honored and that there is just distribution of credit and acceptance of responsibility. ■

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By: Rohit Venkatesan, MD
University of Texas Medical Branch

DURING MY FIRST YEAR of fellowship, I was sitting in a tumor board while we were reviewing a patient’s colonoscopy, and someone in the group asked, “Why did this patient get a colonoscopy?” Certainly a fair question to ask. The patient’s medical oncologist went into a discussion about risks and benefits of the procedure and why he had ordered it.

The gastroenterologist who had performed the procedure responded, “She was sent to the barber, so she got a haircut.” A collective chuckle from the group ensued. Now, obviously, the gastroenterologist was being tongue-in-cheek with this comment, but it actually was an interesting commentary about

the various physicians who are involved in the care of patients with cancer.



Rohit Venkatesan, MD

No one will dispute the fact that patients with cancer are the most complex and challenging for any healthcare provider to care for. Their cancer may be in only a certain area, but cancer is always a systemic disease that requires serious thought when planning any procedures or prescribing any medications. And with

this, we are speaking about only the medical and biological effects of malignancy and not yet even touching on the sometimes more complex psychosocial issues that arise when discussing patients with cancer.

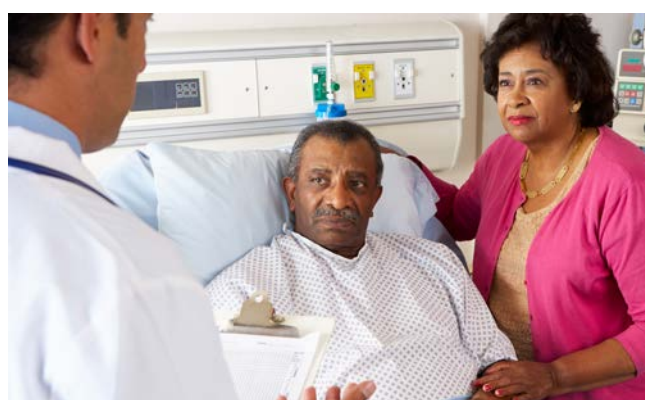
And herein lies the challenge: Their underlying disease and its inherent complexity require careful consideration when planning their medical care. In most cases, these are the patients who require the most in the way of procedures and medications. Our colleagues in the more procedural realms are some of the most hardworking, technically skilled, and dedicated physicians I have ever met. They have special skills and crafts that they have honed and perfected through years

of study and practice, and they are known for offering these specific skills and crafts to patients.

So then I asked myself as an oncologist: What is my skill, my craft? What should I be known for?

I don’t think there is a simple answer. No, we are not “chemo jockeys,” as many would believe. Our skill is not merely writing prescriptions for chemotherapy and scheduling it and checking labs and scans. We are not proceduralists for bone marrow biopsies and intrathecal and intrapericardial chemotherapy administration (though as an aside, we are pretty good at these things).

Our skill is not as much in our hands as it is in our minds and hearts. Our skill is in the time alone with the patient and family, face-to-face and eye-to-eye. Our skill is asking the difficult questions that no one else will ask and sometimes providing the reality check that everyone else is afraid to provide. Our skill is in empathy and trying to put ourselves in someone else’s shoes but balancing this with the pragmatism of what is actually able to happen. This last idea may be one of our most important roles in caring for patients with cancer, and that is managing expectations. I see our role as oncologists as being realistic idealists. Although it may sound paradoxical, it is exactly what our patients need. It is through this nuanced position that we realize when hope is to be given to our patients and when it needs to be tempered. One common way that I have learned to handle this is by providing patients with numbers and percentages when they ask about the facts and about their chances. Taking this objective, matter-of-fact approach is important and sets a tone and an expectation. Sometimes, that is all that is necessary; however, after giving the cold hard facts, we need to tell them, these are the facts, and nobody, other than the Lord, knows when someone’s time is up.



Our unique skill set involves understanding evidence-based guidelines, and tempering the data with our patients' personalized situations.

I have yet to meet a patient who has received a cancer diagnosis who doesn't ask the question that we all know they are going to ask: "Doc, how long have I got?"

This then leads us into a discussion about 5-year survival rates, among other things, that many times aren't even absorbed by the patient, as they are still trying to comprehend that they even had to ask this question in the first place. So it is during these times, when their heads are spinning, and they are overwhelmed with all the data that they inevitably then ask, "Well, Doc, if you were me, what would you do?"

Now, this is certainly the most challenging question of all, simply because we know too much. This is exactly why we owe it to them to provide clarity through the murky grayness of it all, but also have to provide the balance of optimism and idealism with reality.

So how do we do all of this? It's not easy, and different oncologists no doubt will have different opinions on how to achieve all of this in a 30-minute clinic appointment, but I think it's important to start with a clear statement on what I would do if I were they, which is driven mostly by the data. We could call this the part where we wear our oncologist hat. Then, I think it's important to add qualifiers and caveats that are specific to their situation (medical history, social situation, etc). This can be a very lengthy conversation, but usually by the end of it, they are at least leaning one way or the other, are fully informed, and are hopeful, but grounded. Once again, it's not easy, and not every conversation will go well, but with time, most patients are appreciative of the honesty, candor, and support that we need to provide.

Our skill is about knowledge, more so *deep* knowledge. It's about knowing the guidelines cold, but also reading between the lines and interpretation—I don't think I really ever knew the true meaning of *interpretation* until I started my fellowship. I

think it means knowing that guidelines are not set in stone and that following the guidelines may sometimes be the worst thing you can do and sometimes the best thing you can do, but for different reasons that may not be obvious.

Our skill is about knowing the data and using this knowledge to predict what may happen next and always thinking and acting proactively instead of reactively and always keeping the patient informed of what you're doing and why you're doing it. Through this knowledge will come the confidence to interpret data and guidelines in a manner that our colleagues are not as fully skilled in as we are, nor should they be, because this is supposed to be *our* skill.

But there is no doubt that this skill extends beyond medical literature and guidelines. It extends to knowing—and I mean really *knowing* our patients—and through that knowledge, having real opinions about what is happening to them and what other physicians may want to do for them. We have to have opinions about what's happening because we have to believe that we know what's best for our patients because most of the time we do. This is not because we're smarter or more capable than our colleagues, but simply because that's what our skill is. But make no mistake. It's not an inherent talent that we just have; it comes through years of study and practice just as it does for our steady- and sure-handed colleagues.

So what's our skill? In short, it's a lot of things. ■

In Younger Patients, Brain Cancer Deaths Lead the Way

By Tony Berberabe, MPH

THE LEADING CAUSE OF cancer deaths among patients younger than 20 years of age is attributed to brain and other nervous system cancers, according to the latest statistics issued by the American Cancer Society.

“Brain tumor deaths have superseded deaths from leukemia,” said Rebecca L. Siegel, MPH, an epidemiologist with the American Cancer Society and lead author of the most recent study.¹ Further, brain cancer is the leading cause of cancer deaths in men in their 20s and 30s, she continued. “Although there has been progress in treating brain tumors, the progress made hasn’t been to the extent as in treating leukemia,” she added.

Among men, the leading cause of cancer death is brain and other nervous system tumors before age 40 years and lung cancer in those of older ages (Table 1). Among women, the leading cause of cancer death is brain and other nervous system tumors before age 20 years, breast cancer from ages 20 to 59 years, and lung cancer thereafter (Table 2). Siegel notes that there are a lot of rankings available for cancer deaths, but what distinguishes these findings is the inclusion of younger patients. Other rankings mask the burden of cancer deaths in young people because they are driven by patients who are older.

According to the study, cervical cancer is the second-leading cause of cancer death in women aged 20 to 39 years, underscoring the need for increased screening in young women, as well as increased vaccination with the human papillomavirus (HPV) vaccine. In 2016, only one-half (49.5%) of women aged 13 to 17 years were up to date with HPV vaccination. “This is completely unnecessary because we are able to prevent cervical cancer and detect it early and is low-hanging fruit for targeted intervention,” Siegel said.

Siegel also noted racial disparities in the study. In 2015, the cancer death rate was 14% higher in non-Hispanic blacks (NHBs) than non-Hispanic whites (NHWs) with an overall death rate ratio (DRR), 1.14; 95% confidence interval (CI), 1.13-1.15. However, the racial disparity was much larger for individuals <65 years (DRR, 1.31; 95% CI, 1.29-1.32) compared with those ≥65 (DRR, 1.07; 95% CI, 1.06-1.09) and varied substantially by state.

For example, the cancer death rate was lower in NHBs than NHWs in Massachusetts for all ages and in New York for individuals aged ≥65 years, whereas for those aged <65 years, it was 3 times higher in NHBs in the District of Columbia (DRR, 2.89; 95% CI, 2.16-3.91) and about 50% higher in Wisconsin (DRR, 1.78; 95% CI, 1.56-2.02), Kansas (DRR, 1.51; 95% CI, 1.25-1.81), Louisiana (DRR, 1.49; 95% CI, 1.38-1.60), Illinois (DRR, 1.48; 95% CI, 1.39-1.57), and California (DRR, 1.45; 95% CI, 1.38-1.54). Siegel

suggested these inequalities in young and middle-aged adults probably reflect less access to high-quality healthcare.

The American Cancer Society compiled the incidence data, available through 2014, through the Surveillance, Epidemiology, and End Results Program, the National Program of Cancer Registries, and the North American Association of Central Cancer Registries. Mortality data, available through 2015, were collected by the National Center for Health Statistics. ■



Table 1. Five Leading Causes of Cancer Death in Men by Age, 2015^a

All Ages	<20	20 to 39	40 to 59	60 to 79	≥80
All sites 313,818	All sites 1042	All sites 4040	All sites 51,244	All sites 170,331	All sites 87,155
Lung and bronchus 83,648	Brain and ONS 297	Brain and ONS 546	Lung and bronchus 12,595	Lung and bronchus 51,361	Lung and bronchus 19,459
Prostate 28,848	Leukemia 282	Leukemia 518	Colorectum 5913	Colorectum 13,728	Prostate 14,821
Colorectum 27,508	Bone and joints 118	Colorectum 489	Liver ^b 4306	Prostate 12,722	Colorectum 7377
Pancreas 21,392	Soft tissue (including heart) 84	Non-Hodgkin lymphoma 236	Pancreas 3817	Pancreas 12,581	Urinary bladder 5431
Liver ^b 17,414	Non-Hodgkin lymphoma 42	Soft tissue (including heart) 229	Esophagus 2586	Liver ^b 10,302	Pancreas 4860

ONS indicates other nervous system.
^aRanking order excludes category titles that begin with the word “Other.”
^bIncludes intrahepatic bile duct



Table 2. Five Leading Causes of Cancer Death in Women by Age, 2015^a

All Ages	<20	20 to 39	40 to 59	60 to 79	≥80
All sites 282,112	All sites 813	All sites 4420	All sites 48,995	All sites 138,798	All sites 89,081
Lung and bronchus 70,074	Brain and ONS 234	Breast 1049	Breast 10,736	Lung and bronchus 39,925	Lung and bronchus 19,582
Breast 41,524	Leukemia 208	Uterine cervix 439	Lung and bronchus 10,387	Breast 18,762	Breast 10,976
Colorectum 24,888	Bone and joints 79	Colorectum 369	Colorectum 4399	Pancreas 10,443	Colorectum 9829
Pancreas 20,223	Soft tissue (including heart) 74	Brain and ONS 355	Ovary 2749	Colorectum 10,287	Pancreas 7034
Ovary 13,920	Non-Hodgkin lymphoma 31	Leukemia 318	Pancreas 2668	Ovary 7375	Non-Hodgkin lymphoma 3947

ONS indicates other nervous system.
^aRanking order excludes category titles that begin with the word “Other.”
^bIncludes intrahepatic bile duct

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Age and Gender of User Affect Mobile App Use and Adoption

By Tony Berberabe, MPH

ABOUT HALF OF PATIENTS with cancer are willing to send data to their clinicians using an app that supports their treatment plan, with the patient's age and gender strong predictors of adoption, according to a 23-question survey of 375 patients in Munich, Germany.¹ Investigators from the Technical University of Munich reported that 182 patients (48.5%) were willing to send data to their treating clinic via an app.

In general, healthcare apps lack standardized validation regarding benefits, acceptance, costs, and risks. Further, very few native apps are oncology related; those that do exist tend to be poorly validated, developed with a lack of input from healthcare organizations.²

Survey participants were a median age of 59 years (range, 18-92 years), and the gender distribution was about 3:4 female to male. The investigators also compared app use by age group (18-39 years vs ≥40 years). Pearson correlation showed a significant but mild relationship between age and app use favoring those who were younger ($P = .03$). Being male and app use was correlated, as well ($P = .04$). The investigators reported that 69.6% of patients used mobile devices, 16.3% did not own a device, and 9.1% used just a personal computer (desktop or notebook). Patients rated their computer skills as very good and good (18.9% and 35.2%, respectively), intermediate (23.5%), and bad (14.4%).

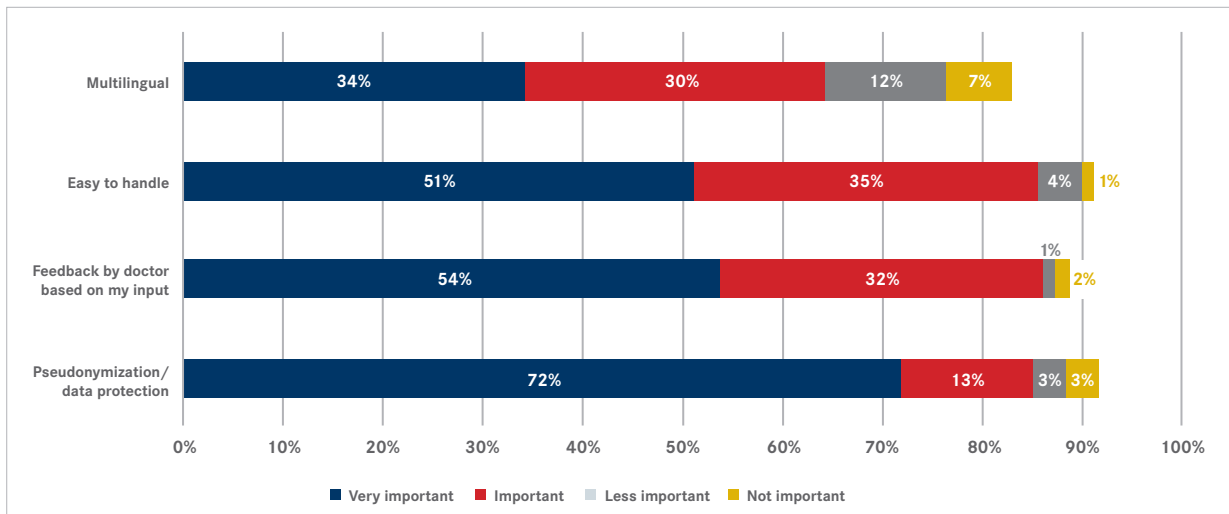
Interestingly, when health insurance companies offered cash back or a bonus for using the app, 36.3% of participants reported

that they would use it; however, 48.8% were not influenced by the payment option. When financial compensation was offered, 6 patients who had previously stated that they would not transfer data via an app changed their mind and reported that they would use it. Patients also were asked about preferences for mode of data transfer: via the internet to a server (61%), via a cloud-based solution (11.0%), via email (33.5%), or just on-site and locally in the clinic (19.2%); for some, the mode of transfer was irrelevant (10.4%). Reasons patients gave for refusing to use an app were related primarily to fear of subsequent data use, lack of technical understanding, and concern about data security (**Table**). The investigators suggested that because younger patients reported greater acceptance of app use, the strategy for introducing a mobile app should depend on the patient's attitude. Patients with cancer, specifically, tend to be open to anything that might have a positive effect on their disease. Oncological apps could strengthen self-care and enable close follow-up. ■

REFERENCE

1. Kessel KA, Vogel MM, Kessel C, et al. Mobile health in oncology: a patient survey about app-assisted cancer care. *JMIR Mhealth Uhealth*. 2017;5(6):e81. doi: 10.2196/mhealth.7689.
2. Collado-Borrell R, Escudero-Vilaplana V, Ribed-Sánchez A, Ibáñez-García S, Herranz-Alonso A, Sanjurjo-Sáez M. Smartphone applications for cancer patients; what we know about them? *Fam Hosp*. 2016;40(1):25-35. doi: 10.7399/fh.2016.40.1.8993.

Table. What would be important to you when considering using an app? (n = 182)



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2018 Oncology Conferences



March 29, 2018
State of the Science Summit™
on RCC/Bladder
Boston, MA
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March 29, 2018
State of the Science Summit™
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April 4, 2018
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on Ovarian/Sarcoma
Scottsdale, AZ
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April 5, 2018
State of the Science Summit™
on Multiple Myeloma
Phoenix, AZ
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April 12, 2018
State of the Science Summit™
on Lung Cancer
New York, NY
onclive.com/meetings/soos

April 18, 2018
State of the Science Summit™
on Multiple Myeloma
Pasadena, CA
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April 19, 2018
State of the Science Summit™
on Breast Cancer
Los Angeles, CA
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April 24, 2018
State of the Science Summit™
on Gastrointestinal Malignancies
New York, NY
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April 25, 2018
State of the Science Summit™
on Hematologic Malignancies
Charlotte, NC
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April 28, 2018
3rd Annual School of
Gastrointestinal Oncology™
New York, NY
onclive.com/meetings/soos

May 4-5, 2018
2nd Annual European Symposium
on Lung Cancers™
Barcelona, Spain
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May 8, 2018
State of the Science Summit™
on Breast Cancer
Boston, MA
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May 9, 2018
State of the Science Summit™
on Gastrointestinal Malignancies
Scottsdale, AZ
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May 10, 2018
State of the Science Summit™
on Ovarian Cancer
Stanford, CA
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June 1, 2018
ASCO: PARP Inhibition in
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to Interpret and Apply the Evidence
for Your Patients
Chicago, IL
gotoper.com/go/ascoparp2018

June 2, 2018
ASCO: New Directions in Advanced
Cutaneous Squamous Cell Carcinoma:
Emerging Evidence of Immunotherapy
Chicago, IL
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June 20, 2018
State of the Science Summit™
on Lung Cancer
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June 21, 2018
State of the Science Summit™
on Breast Cancer
New York, NY
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June 23, 2018
2nd Annual International Congress
on Oncology Pathology™: Towards
Harmonization of Pathology and
Oncology Standards
New York, NY
gotoper.com/go/icop2018

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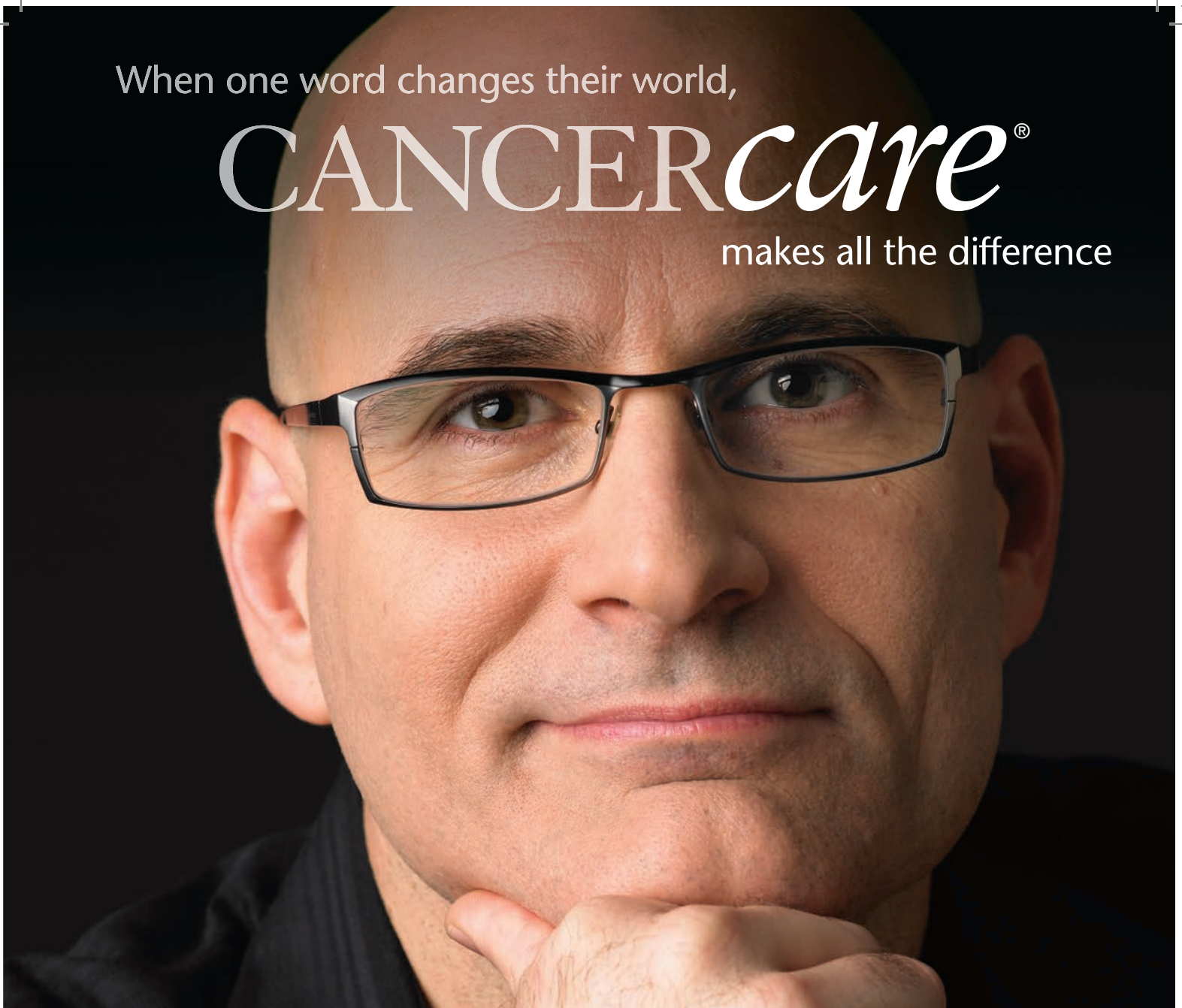
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