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THE COVID-19 PANDEMIC GIVES US THE URGENCY—AND ONE MORE CHANCE—TO ADDRESS HEALTH DISPARITIES

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GUEST EDITORIAL

THE COVID-19 PANDEMIC GIVES US THE URGENCY— AND ONE MORE CHANCE— TO ADDRESS HEALTH DISPARITIES



By Robert Winn, MD

Director, Virginia Commonwealth University Massey Cancer Center

As the crisis triggered by the COVID-19 pandemic deepens, the two separate, unequal societies that make up the United States of America are equally frightened, bewildered, and unsure of what comes next.

One thing that has become even more clear during this crisis is the “digital divide” that has created a wall between America’s rich and poor (*The Cancer Letter*, [Nov. 16, 2018](#)).

Almost all people of sound mind and body, independent of their social economic status, are in search of good, up-to-date, reliable information about COVID-19.

Alas, actually obtaining good information isn’t so easy, and the accessibility of such information isn’t equal for all.

In fact, it’s terribly difficult for many vulnerable populations (e.g. urban underserved, rural, new immigrants, homeless, and the working poor) to learn what’s going on and what to do about it.

Even otherwise reputable sources of information have been inconsistent, unequally accessible, and at times just outright incorrect about the COVID-19 crisis. Rumors and misinformation about COVID-19 are plentiful on the various social media platforms; one of the more disturbing stories in the social media world postulates that COVID-19

doesn't affect African Americans to the same extent as it affects other people.

Another example of misinformation is the widespread rumor that ibuprofen accelerates COVID-19 viral replication.

While some of these have been addressed by reputable sites, including *Politico* or *Forbes*, there's likely an equal amount of misinformation that frequently goes unchallenged by "high-quality" information.

In fact, a number of high-profile and not-so-high-profile black actors and athletes (e.g. Kevin Durant, Idris Elba, Callum Hudson-Odoi, to name a few) have contracted COVID-19.

Transparency, honesty, and expert opinion continue to matter.

Access to information is also unequal, and those with limited digital access may rely on word of mouth, which makes them more prone to receive misinformation or uncontested, biased information.

For example, many rural areas throughout the U.S. have little or no broadband, thereby significantly limiting the availability of potentially useful information. It's becoming more obvious that not having trusted universal sources of easily accessible good information for all has led many to seek information from other sources that often conflict with information from state and federal sources.

In fact, on March 19, 2020 *The Washington Post* reported that while social distancing makes crowded cities seem like the deadliest environments, the flu pattern over the past five years suggests that it's the very rural areas that stand to suffer from the highest mortality due to their inherent distance from health-care resources.

I also wonder about the meaning of "shelter in place" for someone who has neither shelter nor place.

The current threat of academic medical centers becoming overwhelmed with the pandemic paints a grim picture for what may happen to smaller, more rural health care facilities.

This contributes to increased confusion and mistrust that put our vulnerable populations at an even higher risk. The lack of coordinated, consistent, clear and unifying directions from Washington further feeds confusion and mistrust among the most vulnerable.

Even before this crisis, our at-risk populations had health outcomes that were disproportionately worse than those of the general public. This was visible in all areas of medicine, including cancer. Now, these same populations are at an even greater risk for having a potential poorer outcome from COVID-19 exposure.

On the opposite side of the tracks, the more affluent population enjoys access to a cornucopia of electronic apps (e.g. food delivery apps, various shopping apps etc.), and, of course, an abundance of information.

The rich and the educated appear to be stuck in a twenty-four-hour state of connectedness to information provided through various electronic and high-tech gear (e.g. laptops, e-readers, and smart watches etc.). Literally gorging on information, this group often complains about "information overload," which leads to information exhaustion and a sense of being overwhelmed.

In recent days, I've become more keenly aware of the "digital divide" that exists among the various communities and the irony of how the haves—those who get abundant information—are rare-

ly sharing information outside their own circles.

The haves simply don't know how to address the have-nots, i.e. the low-tech or no-tech informationally non-abundant communities.

“

Coronavirus testing is a glaring example of our two separate and unequal Americas.

”

This lack of information sharing is reinforcing systemic inequalities.

Only a generation ago, the ACT UP (AIDS Coalition to Unleash Power) movement demonstrated the importance of disseminating information to vulnerable communities one block at a time—all the while building trust.

But how will the past models of direct community engagement learned from the HIV/AIDS era work in the current COVID-19 pandemic, where transmission and spread of the virus is so fast and furious (i.e. fecal-oral and/or airborne mechanisms)?

Without question, front-line involvement and engagement by people is critical to any infectious disease crisis, e.g. the Ebola epidemic in West Africa in 2015, but the COVID-19 crisis also points out the need to reduce and disrupt the current "digital divide".

To quote one of Otis Brawley's Will Rogers-like sayings, "the underserved are the underserved because they are underserved."

Coronavirus testing is a glaring example of our two separate and unequal Americas.

Yes, failure to produce our own effective testing kits compounded by failure of not accepting coronavirus testing from the World Health Organization or other outside entities (private or otherwise) has negatively impacted the trajectory of COVID-19 on all who live within the U.S., reminding all of us that there are no shortcuts when it comes to our national disaster preparedness.

However, the perception of this early phase of COVID-19 testing by many who live in disadvantaged communities is that the testing has been prioritized to those who have access, agency, and affluence. In short, the well-connected.

The most vulnerable populations, are still awaiting a plan for testing to reach their communities.

Unfortunately, this has become an all-too-common theme that provides fertile ground for the increasing misinformation spreading throughout our at-risk communities as well as waves of wrong information (and perhaps deliberate disinformation) spread on social media.



Fear will often travel faster than the virus, but a message of unity may serve as an antidote to fear, and perhaps to the virus as well.



This mistrust becomes even more difficult to disarm when people are aware of the high-volume COVID-19 screening drive-through testing programs launched in other countries, e.g. in South Korea, which is testing up to 15,000 people a day.

These drive-through testing programs are mobilized to travel to hotspots within those countries.

As screening becomes available, we will need to assure our communities that we understand that not all health care should occur in hospitals and that appropriate drive-through and walk-up testing sites might also be effective. (This is, of course, predicated on having the appropriate availability of the COVID-19 screening tests.)

The focus on developmental drug research and basic science translational programs over the past decade or so has resulted in highly effective “miracle” drugs and high-tech diagnostic tools, as evinced by the recent success of immunotherapy and molecular therapies to fight cancer.

Now, even in its early days, the COVID-19 crisis has demonstrated a significant need for an equal emphasis on the health delivery science that underpins and drives our public health.

In the end, social determinants of health may begin to play a major role in determining who will end up doing well and who will end up doing poorly during this crisis.

As a cancer center director, I am proud to see the many brave teams of physicians, nurses, and staff step up to the current challenges, often despite risk to their own personal health, as they continue to man the frontline, providing care to cancer patients.

I am proud of the researchers who continue to carry out important therapeutic treatment clinical trials, which may make a difference in extending a patient’s life, and I am proud of researchers who are keeping research laboratories afloat during these trying times.

However, an important message from the COVID-19 crisis ought to be that dissemination sciences should get equal billing as discovery sciences.

I hope all of us will recognize the importance of increasing and intensifying our efforts in field of health equity research. Innovative, high-impact community outreach and engagement programs can do much more to inform communities about their health.

If done right, the community outreach and engagement programs would serve as the vehicle for combating the swirling mis- and disinformation. It has become clear that public health matters a great deal, and as cancer centers we can play a major role in impacting the health of our country by focusing even more on the health delivery sciences and its practical applications via “effective” community engagement.

It’s undeniable that we live in a bifurcated, separate-and-unequal country, but it is also undeniable that this crisis will inspire all of us to build a bridge between our two separate societies, if for no reason other than to improve our overall chances of saving ourselves.

Fear will often travel faster than the virus, but a message of unity may serve as an antidote to fear, and perhaps to the virus as well.

Stay safe and let’s stay united.

After all, we are all our brothers’ and sisters’ keepers.



GUEST EDITORIAL

ASCO's response to COVID-19

The worldwide spread of the coronavirus (COVID-19) presents unprecedented challenges to the cancer care delivery system.



By Richard L. Schilsky, MD, FACP, FSCT, FASCO

Executive vice president, chief medical officer, American Society of Clinical Oncology

Our patients are already dealing with a life-threatening illness and are particularly vulnerable to this viral infection, which can be even more deadly for them. Further, as restrictions in daily movement and social distancing take hold, vulnerable patients may be disconnected from friends, family or other support they need as they manage their cancer.

As providers, we rely on evidence and experience when treating patients but now we face uncertainty. There are limited data to guide us in the specific management of cancer patients confronting COVID-19 and, at present, we have no population-level guidance

regarding acceptable or appropriate adjustments of treatment and practice operations that both ensure the best outcome for our patients and protect the safety of our colleagues and staff.

As normal life is dramatically changed, we are all feeling anxious about the extreme economic challenges we face, but these issues are perhaps even more difficult for our patients, many of whom are now facing interruptions in jobs or income for themselves and their caregivers.

As we confront this extraordinary situation, the health and safety of members, staff, and individuals with cancer—in

fact, the entire cancer community—is ASCO's highest priority.

ASCO has been actively monitoring and responding to the pandemic to ensure that accurate information is readily available to clinicians and their patients. Recognizing that this is a rapidly evolving situation and that limited oncology-specific, evidence-based information is available, we are committed to sharing what is known and acknowledging what is unknown so that the most informed decisions can be made.

To help guide oncology professionals as they deal with the impact of coronavirus on both their patients and staff, ASCO

has collated questions from its members, posted [responses at asco.org](#) and assembled a compendium of additional resources we hope will be helpful as the virus spreads and the disease unfolds. We continue to receive additional questions regarding clinical care and we are updating our FAQs on a regular basis.

We hope this information is helpful even when it merely confirms that there are no certain answers to many questions. Our answers are based on the best available information we identify in the literature, guidance from public health authorities, and input received from oncology and infectious disease experts.

That said, any guidance we share should not be considered specific treatment recommendations for individual patients which can only be made by the oncologist and patient together after considering the goals of treatment, the clinical status of the patient, and the risks versus benefits of deviating from established cancer treatment programs.

For patients, we have posted a blog by Dr. Merry Jennifer Markham, chair of ASCO's Cancer Communications Committee. This can be found on [Cancer.Net](#), ASCO's patient information website, and it provides practical guidance to help patients reduce their risk of exposure, better understand COVID-19 symptoms, and locate additional information.

This blog is available both in English and Spanish. Additional blog posts addressing patient questions will be posted as new questions are received and new information becomes available.

Turning for a moment to ASCO's Annual Meeting, we are committed to delivering the latest cancer research to the global community in 2020 as we do every year. But we put the safety and

well-being of our members, attendees and their patients first and if we determine that our meeting can't be held safely, we are planning alternate virtual approaches that will allow us to effectively fulfill our mission.

Regardless of format, ASCO will host a robust educational and scientific program, and abstracts will be published online and in the *Journal of Clinical Oncology* as always.

A final decision on the meeting format will be made soon to allow participants adequate time to adjust their plans.

Finally, I want to say that, as stressful as these times are, it is heartening to see ASCO members, volunteers and care teams throughout the oncology community working together to ensure that we continue the critical work of conquering cancer as we also confront this extraordinary health care crisis.

We have taken decisive steps to ensure our work continues so that we are in the best position to support our members at this challenging time but there will be much more to do in the weeks ahead.

We will continue to regularly reach out to ASCO members and disseminate the most current information through all relevant ASCO communications channels, including email blasts, social media channels and [asco.org](#).

We appreciate everyone's patience and cooperation as we navigate these uncharted waters. Ours is a community that stands out in its ability to support patients—and each other—during some of life's most difficult times. We urge every person to do what you can to sustain that spirit during this time of need.

COVID-19 FAQs and Guidances

- **American Society of Clinical Oncology FAQ:** Emerging issues and challenges in caring for patients with cancer during the coronavirus pandemic
- **NCI Emergency Resources:** What people with cancer should know about the coronavirus
- **NCI guidance:** Interim guidance for patients on clinical trials supported by the NCI Cancer Therapy Evaluation Program (CTEP) and the NCI Community Oncology Research Program (NCORP)
- **FDA guidance:** Conduct of clinical trials of medical products during COVID-19 pandemic
 - More FDA updates: [Medical Countermeasures Initiative](#), on COVID-19
- **Journal of the National Comprehensive Cancer Network:** How to manage cancer care during COVID-19 pandemic
- **American Cancer Society FAQ:** Common questions about the new coronavirus outbreak
- **Community Oncology Alliance resources:** Coronavirus (COVID-19) practice resources and protocols
- **Leukemia & Lymphoma Society FAQ:** Resources and what you should know about the coronavirus
- **American Society for Radiation Oncology FAQ:** COVID-19 recommendations and information
- **St. Jude Children's Research Hospital FAQ:** COVID-19 and children with cancer

LETTER TO THE EDITOR



COVID-19 and Cancer Consortium

To Whom it May Concern:

We are living in unprecedented times. There remains a great deal of uncertainty about COVID-19 and its effects on individuals, especially the elderly and the immunocompromised. Cancer patients form a unique subset of individuals who are often both elderly and immunocompromised, may have significant comorbidities, and may be actively receiving treatment.

In order to better understand the scope and severity of infection in cancer patients, we are soliciting information under the auspices of a multi-institutional collaboration, the **COVID-19 and Cancer Consortium (CCC19)**. If you have knowledge of a cancer patient who has been affected by COVID-19, we ask you to complete a short REDCap survey which can be accessed [here](#).

There is no compensation for this study, which has been determined to be IRB

exempt (Vanderbilt IRB #200467). We will also ask you to optionally provide your name and email address, in case you would like to be contacted for clarifications or to participate in other studies.

If you have any questions please contact the Vanderbilt principal investigator, Dr. Jeremy Warner MD, MS (jeremy.warner@vumc.org).

We thank you kindly for considering a contribution to this registry.

Sincerely,

- Mike Thompson, MD, PhD, FASCO (Aurora Health Care)
- Paul Fu, Jr., MD, MPH, FAAP, FAMIA; H. Jack West, MD (City of Hope)
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- Tian Zhang, MD, MHS (Duke University)
- Mehmet Asim Bilen, MD (Emory University/Winship Cancer Institute)
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- Sumit A. Shah, MD, MPH; Alokumar Jha, PhD (Stanford University)
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- Brian I. Rini, MD, FACP, FASCO; Samuel M. Rubinstein, MD; Jeremy L. Warner, MD, MS, FAMIA, FASCO (Vanderbilt University Medical Center/Vanderbilt-Ingram Cancer Center)
- Keith Stocker-Goldstein, MD (Washington University in St. Louis/Siteman Cancer Center)
- Axel Grothey, MD (West Cancer Center)

Sifting through fatality data and projections on COVID-19:

People with cancer, other comorbidities face highest risk

By Matthew Bin Han Ong

Early data from China and Italy confirm that cancer patients are at higher risk for developing severe adverse events and dying after testing positive for the novel coronavirus.

In Italy, cancer patients account for about 20% of deaths stemming from the novel coronavirus. The preliminary analysis of 355 deaths—out of a sample total of 2003 deaths—was conducted by the Istituto Superiore di Sanità, the Italian National Institute of Health.

In the study sample, nearly half of the patients who died had three or more existing comorbid conditions. The analysis, which includes data reported through March 17, is published [here](#).

The preliminary data are relevant to the U.S., because many Americans have comorbid conditions, said Otis Brawley, the Bloomberg Distinguished Professor of Oncology and Epidemiology at Johns Hopkins University.

“The proportion of the U.S. population with comorbid conditions is quite high, especially when we start talking about people over the age of 50,” Brawley said to *The Cancer Letter*. “When you consider obesity as a comorbid condition, we’re talking 35-40% of the American population of adults.”

Data from Italy: Most common diseases observed in patients who died as a result of COVID-2019 infection		
Pathology	N	%
Ischemic heart disease	117	33
Atrial fibrillation	87	24.5
Stroke	34	9.6
Arterial hypertension	270	76.1
Diabetes mellitus	126	35.5
Dementia	24	6.8
COPD	47	13.2
Active cancer in the past 5 years	72	20.3
Chronic liver disease	11	3.1
Chronic renal failure	64	18
Number of pathologies		
0	3	0.8
1	89	25.1
2	91	25.6
3	172	48.5

Source: Istituto Superiore di Sanità, Servizio Sanitario Nazionale, Ministero della Salute

The most common pre-existing chronic pathologies (diagnosed before contracting infection) in deceased patients. These figures were obtained in 355/2003 deaths (17.7% of the sample total). The average number of pathologies observed in this population is 2.7 (median 2, standard deviation 1.6). Overall, 3 patients (0.8% of the sample) had 0 pathologies, 89 (25.1%) had 1 pathology, 91 had 2 pathologies (25.6%) and 172 (48.5%) had 3 or more pathologies.

Adverse events, case-fatality rates for cancer patients

Using data from China, a [study](#) published Feb. 24 in JAMA found that the case-fatality rate for patients with cancer was 5.6% in a sample of 1,023 deaths among 44,672 confirmed cases.

The data are derived from a total of 72,314 case records and updated through Feb. 11, according to study authors Zunyou Wu and Jennifer McGoo-gan at the Chinese Center for Disease Control and Prevention in Beijing.

“The overall case-fatality rate (CFR) was 2.3% (1,023 deaths among 44,672 confirmed cases),” the authors wrote. “No deaths occurred in the group aged 9 years and younger, but cases in those aged 70 to 79 years had an 8.0% CFR and cases in those aged 80 years and older had a 14.8% CFR. No deaths were reported among mild and severe cases.

“The CFR was 49% among critical cases. CFR was elevated among those with pre-existing comorbid conditions—10.5% for cardiovascular disease, 7.3% for diabetes, 6.3% for chronic respiratory disease, 6.0% for hypertension, and 5.6% for cancer.

“Among the 44,672 cases, a total of 1,716 were health workers (3.8%), 1,080 of whom were in Wuhan (63%). Overall, 14.8% of confirmed cases among health workers were classified as severe or critical and 5 deaths were observed.”

In a [study](#) published March 1 in *The Lancet Oncology*, cancer patients are more likely to be admitted to the intensive care unit and require invasive ventilation, or die, compared with patients without cancer.

The study was conducted by researchers at the China State Key Laboratory of Respiratory Disease and National Clini-

cal Research Center for Respiratory Disease, within The First Affiliated Hospital of Guangzhou Medical University.

Using a data cutoff date of Jan. 31, the authors identified 1,590 cases of COVID-19 with sufficient records of previous disease history from 575 hospitals in 31 provincial administrative regions in China.

“Eighteen (1%; 95% CI 0.61–1.65) of 1,590 COVID-19 cases had a history of cancer, which seems to be higher than the incidence of cancer in the overall Chinese population (285-83 [0.29%] per 100,000 people, according to 2015 cancer epidemiology statistics),” the authors wrote.

“Patients with cancer were observed to have a higher risk of severe events (a composite endpoint defined as the percentage of patients being admitted to the intensive care unit requiring invasive ventilation, or death) compared with patients without cancer (seven [39%] of 18 patients vs 124 [8%] of 1,572 patients; Fisher’s exact $p=0.0003$).

Patients who underwent chemotherapy or surgery in the past month had a numerically higher risk—75%, three of four patients—of clinically severe events than patients who did not receive chemotherapy or surgery, 43% six of 14 patients.

“These odds were further confirmed by logistic regression (odds ratio [OR] 5.34, 95% CI 1.80–16.18; $p=0.0026$) after adjusting for other risk factors, including age, smoking history, and other comorbidities,” the authors wrote. “Cancer history represented the highest risk for severe events. Among patients with cancer, older age was the only risk factor for severe events (OR 1.43, 95% CI 0.97–2.12; $p=0.072$).

COVID-19 appears to cause T cell counts to be reduced significantly, especially among elderly patients and in patients

requiring intensive care, according to another [study](#) by researchers in China.

The researchers retrospectively reviewed the counts of total T cells, CD4+, CD8+ T cell subsets, and serum cytokine concentration from inpatient data of 522 patients with laboratory-confirmed COVID-19. The patients were admitted into two hospitals in Wuhan from December 2019 to January 2020.

“T cell counts are reduced significantly in COVID-19 patients, and the surviving T cells appear functionally exhausted,” the authors concluded.

“There has been an emerging interest in cytokine release syndrome (CRS) because of #COVID19,” NCI Director Ned Sharpless [tweeted](#) March 15. “CRS is well-described in patients with certain cancers as a direct complication or as a side effect to certain types of therapies, such as CAR T-cell therapy.”

Overall case-fatality risk estimates

While it may be too early to establish statistically meaningful COVID-19 overall mortality rates—age-adjusted or not—for the U.S. population, epidemiologists and infectious disease experts are modeling for fatalities in the U.S. based on data from other countries, and also making active comparisons as the outbreak grows.

Using preliminary data, the Centers for Disease Control and Prevention concluded in a March 16 [report](#) that its findings are similar to data from China, which indicated that over 80% of deaths occurred among persons aged 60 years or older.

“Since February 12, 4,226 COVID-19 cases were reported in the United States; 31% of cases, 45% of hospitalizations, 53% of ICU admissions, and 80% of deaths occurred among adults aged

≥65 years with the highest percentage of severe outcomes among persons aged ≥85 years,” CDC authors wrote in the March 16 Morbidity and Mortality Weekly Report.

These preliminary data also demonstrate that severe illness leading to hospitalization, including ICU admission and death, can occur in adults of any age with COVID-19. About 40% of patients who were hospitalized were below 55 years of age.

“Among 508 (12%) patients known to have been hospitalized, 9% were aged ≥85 years, 26% were aged 65–84 years, 17% were aged 55–64 years, 18% were 45–54 years, and 20% were aged 20–44 years,” CDC researchers wrote. “Less than 1% of hospitalizations were among persons aged ≤19 years. The percentage of persons hospitalized increased with age, from 2%–3% among persons aged ≤9 years, to ≥31% among adults aged ≥85 years.

“This first preliminary description of outcomes among patients with COVID-19 in the United States indicates that fatality was highest in persons aged ≥85, ranging from 10% to 27%, followed by 3% to 11% among persons aged 65–84 years, 1% to 3% among persons aged 55–64 years, <1% among persons aged 20–54 years, and no fatalities among persons aged ≤19 years.”

In other studies published with CDC, calculations show that the risk for death in Wuhan reached as high as 12%, with about 1% in other mildly affected areas in China.

“The elevated death risk estimates are probably associated with a breakdown of the healthcare system, indicating that enhanced public health interventions, including social distancing and movement restrictions, should be implemented to bring the COVID-19 epidemic under control,” researchers from Geor-

gia State University and Kyoto University wrote in a [paper](#) published in CDC’s *Emerging Infectious Diseases* journal.

According to calculations using a lag time for fatality, broader estimates by a team of researchers from the University of Otago in New Zealand show that the adjusted case-fatality risk is likely to be around 0.9%.



The proportion of the U.S. population with comorbid conditions is quite high, especially when we start talking about people over the age of 50.

– Otis Brawley

“We estimated the case-fatality risk for 2019 novel coronavirus disease cases in China (3.5%); China, excluding Hubei Province (0.8%); 82 countries, territories, and areas (4.2%); and on a cruise ship (0.6%),” the authors wrote in a [research letter](#) published in CDC’s EID. Lower estimates might be closest to the true value, but a broad range of 0.25%–3.0% probably should be considered.

“The aCFR of 0.9% for China, excluding Hubei Province, might be most accurate. Nevertheless, given the residual uncertainties, health sector decision-makers and disease modelers probably should consider a broad range of 0.25%–3.0% for COVID-19 case-fatality risk estimates. The higher values could be more appropriate in resource poor settings where the quality of hospital and intensive care might be constrained.

“Higher values might also be appropriate in high-income countries with limited surge capacity in hospital services because elevated case-fatality risks could be seen at the peak of local epidemics,” the authors wrote. “Because COVID-19 is expected to further spread globally, ongoing work using country-specific cohorts will be needed to more robustly clarify the case-fatality risk of this new disease.”

Total fatality estimates for the U.S.

Early models from CDC show that between 160 million and 214 million people in the U.S.—50% to 65% of the total population—could be infected over the course of the epidemic, according to a projection that encompasses four scenarios.

According to the CDC models, as many as 200,000 to 1.7 million people could die.



“The worst-case scenario is either you do nothing or your mitigation and containments don’t succeed,” Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, said March 15 on ABC News. “So, although that’s possible, it is unlikely if we do the kinds of things that we are essentially outlining right now.

“You block infections from coming in, and then within is when you have containment and mitigation,” Fauci said. “And that’s the reason why the kinds of things we’re doing that may seem like an overreaction will keep us away from that worst-case scenario.”

If 50% of the U.S. population is infected, CDC’s projections are likely to come true, even within the lower range of case-fatality risks—between 0.1% to 1%.

In an op-ed published March 10 for the Council on Foreign Relations, former CDC Tom Frieden wrote:

Possible deaths in the United States from COVID-19

		Percent of population infected				
		0.1	1.0%	10%	50%	
Case	0.1	Similar to seasonal flu	327	3,270	32,700	163,500
Fatality	0.5	Moderately severe	1,635	16,350	163,500	817,500
Ratio	1.0	Severe	3,270	32,700	327,000	1,635,000

Source: Council on Foreign Relations

“The president asked me, ‘We’re not going to see a million deaths in this country, are we, doctor?’

“I replied, with more certainty than I felt, ‘No, Mr. President, we won’t.’ If asked the same question today about the novel coronavirus, I would have to reply, ‘I hope not, but that’s a possibility.’”

At this writing, there are 14,250 confirmed cases in the U.S. and 205 deaths. About two-thirds of the cases have been diagnosed in four states: 5,711 in New York, 1,376 in Washington state, 1,030 in California, and 742 in New Jersey.

A study published in *Science* estimated that, for every confirmed case, there are most likely five to 10 people with undiagnosed infections.

“We use observations of reported infection within China, in conjunction with mobility data, a networked dynamic metapopulation model and Bayesian inference, to infer critical epidemiological characteristics associated with SARS-CoV2, including the fraction of undocumented infections and their contagiousness,” the authors wrote. “We estimate 86% of all infections were undocumented (95% CI: [82%–90%]) prior to 23 January 2020 travel restrictions.”

Milder cases, although on average about half as infectious as confirmed ones, are responsible for nearly 80% of new cases.

“Per person, the transmission rate of undocumented infections was 55% of documented infections ([46%–62%]), yet, due to their greater numbers, undocumented infections were the infection source for 79% of documented cases,” the authors wrote. “These findings explain the rapid geographic spread of SARS-CoV2 and indicate containment of this virus will be particularly challenging.”



Eighteen (1%; 95% CI 0.61–1.65) of 1,590 COVID-19 cases had a history of cancer, which seems to be higher than the incidence of cancer in the overall Chinese population.

– *Wenhua Liang et al., The Lancet Oncology*



Experts predict that U.S. hospitals could be be overrun with COVID-19 cases as early as March 23.

“Last night, I was on with state and local officials around the U.S. well into the

night,” Andy Slavitt, a former acting administrator of the Centers for Medicare and Medicaid Services, tweeted March 14. “By March 23, many of our largest cities and hospitals are on course to be overrun with cases.”

There are only about 925,000 staffed hospital beds in the U.S., according to 2020 survey results published by the American Hospital Association.

“Every report describes [the situation in Italy] as a tsunami,” Slavitt tweeted. “And if it happens like a tsunami, in major cities we will have tenths of thousands more cases than we have beds, and we will have one ventilator for every eight people who need one.”

“The U.S. and every country that hasn’t taken better preventive measures like South Korea and Japan is directly on course [to have a trajectory like Italy], lagging two weeks behind,” Slavitt tweeted. “The only way to prevent [a situation like] Italy, given our lack of testing, is to socially isolate. Congress even allocates money for people to stay home. That rarely happens. But we blew our chance at containment.”

“Hospitals must get rid of elective procedures, expand negative pressure rooms, move ventilator capacity to hot spots, and seek additional where possible, create isolation negative pressure rooms, get tests for every front line worker, get masks, and other supplies.”

One cancer patient's struggle to get a COVID-19 test

“It’s just horrifying that there isn’t a system in place”

By Alexandria Carolan

The predicament in which Janice Cowden finds herself is so ordinary in today’s pandemic-struck America that it’s repeated thousands of times—and therein lies its horror.



For nearly two weeks, Cowden, a 62-year-old survivor of metastatic breast cancer, has had a severe cough, fever, body aches, wheezing, and labored breathing—all symptoms of COVID-19.

As a patient with cancer over the age of 60, she is one of many with underlying illnesses who are most vulnerable to the disease.

At this writing, after two doctor's appointments and a trip to the ER, Cowden, a resident of Bradenton, a town in central Florida, hasn't been tested for coronavirus. She is one of thousands of people in the U.S.—with or without cancer—who are having to jump through hoops to receive testing, often with no success.

Preliminary analysis from fatality data in Italy show that cancer patients may account for 20% of all COVID-19 deaths in a small study by the Italian National Institute of Health.

- A conversation with Giuseppe Curigliano, clinical director in the Division of Early Drug Development for Innovative Therapy, co-chair of the Cancer Experimental Therapeutics Program, Department of Oncology and Hemato-Oncology, University of Milan, European Institute of Oncology, appears on [page 24](#).
- A review of early data and projections related to the COVID-19 pandemic appears on [page 10](#).

Persistent symptoms aren't even the worst of it for Cowden.

On Feb. 29, in the early days of the COVID-19 outbreak in the United States—before meetings and conferences in oncology were canceled en masse—Cowden and more than 300 people gathered for The Southwest Florida Metsquerade fundraiser.



Cowden poses with friends at the Southwest Florida Metsquerade. They all have metastatic breast cancer.

Cowden, who has triple-negative stage IV disease, was one of 50 or-so survivors at the Metsquerade. There, she posed for photos, gave hugs to friends she hadn't seen in months, laughed and cried with fellow advocates. These were, after all, people she may or may not ever see again.

A week later, Cowden had the symptoms.

"If I were to have the disease—I would hope that no one else in that group in particular, those of my friends who have metastatic breast cancer, get sick," Cowden said to *The Cancer Letter*. "I think we've probably reached that point where they would maybe have it by now. I don't know. It's just disappointing to me that I can't at least have it ruled out."

Fran Visco, president of the National Breast Cancer Coalition, said the government response and subsequent testing for COVID-19 in the U.S. is horrifying.

"Here, you have an individual who is trying to do the right thing, trying to get test-

ed—because she has symptoms and she was in the presence of hundreds of other people, many of whom were probably immuno-compromised and in difficult health situations," Visco said to *The Cancer Letter*. "It's just horrifying that we don't have a system in place that would facilitate her being tested—or anyone like her being tested—or any of us being tested."

A cough and a fever

On March 8, Cowden developed a sore throat, a headache, and generally felt bad.

The next day, her cough worsened, and she measured a fever of 100.5. On March 10, she was wheezing, had body aches, a headache, and labored breathing.

"I do have some damage in my right lung from radiation. So, sometimes, I will tend to develop the more significant respiratory symptoms if I get an upper respiratory infection," Cowden said.

Cowden made an appointment with her primary care physician at Intercoastal Medical Group in Florida on March 10. By then, her fever was up to 101.3, as measured in the office. The doctor ran an influenza test, which was negative. The rapid strep test the doctor administered next was inconclusive: the physician's assistant read it as negative, the physician as faintly positive.

An X-ray ruled out pneumonia.

"Have you traveled internationally within the past 90 days? Do you know anyone who's been exposed to coronavirus?" they asked Cowden. She answered truthfully: "No." Apparently, this answer rendered Cowden ineligible to receive a test for COVID-19.

Cowden was sent home with a pack of steroids and a prescription for antitussive cough medicine in hand.

Intercoastal didn't immediately return a request for comment from *The Cancer Letter*.

Cowden couldn't stop thinking back to the more than 300 women who attended the SWFL Metsquerade. Receiving a negative test would enable her to say: "Even though I'm sick—no—I don't have coronavirus. You were not exposed to me."

"I just thought it was odd, that having been at that event, that they wouldn't want to at least rule it out," Cowden said.

Christine Hodgdon, one of Cowden's friends with metastatic breast cancer and a fellow advocate, also attended the SWFL Metsquerade.

At the Metsquerade, "we were all together—hugging and taking pictures, all these things. If she does have it, it would really be nice for us to get a heads-up to know that we may have

been exposed to it," Hodgdon, founder of the Storm Riders Network—an informational resource for MBC patients, said to *The Cancer Letter*. "She's a classic case. She's over 60, she has metastatic breast cancer, and she has all these symptoms."

On Friday, March 13, Cowden's symptoms got worse. She could hardly breathe.

"The only improvement was with my temperature—it was no longer over 101. It was staying between 99 and 101," Cowden said.

So, she went to her primary care provider, again, the next day.

"The primary care doctor listened and commented on how awful my lungs sounded. He did a nebulizer treatment, which did not clear the wheezing, and he determined that I needed to go to the emergency room," Cowden said.

"And, in his words, he said 'I want you to go to the emergency room and get tested for the coronavirus, and you're probably going to be admitted.'"

Finally, Cowden would get the answer.

Emergency room

Cowden was seen almost immediately after arriving at the emergency room of Doctors Hospital of Sarasota.

She received several tests: A chest X-ray, labs, blood cultures, a urine culture. Everything came back OK, Cowden said.

"Once again, I explained to the physician that the primary care doctor I saw that morning had stated that I should be tested for coronavirus. And he went through the same questions and said the same thing," Cowden said.

And yet, she didn't receive a test—despite her worsening symptoms.

"Have you traveled internationally within the past 90 days? Do you know anyone who's been exposed to coronavirus?"

"No," Cowden answered once again.

Would it have made a difference had her answer been "Yes"?

The hospital had no test kits to begin with, the ER doc told her.

"Honestly, I just think it would be a wise thing to do—to rule it out, because of the exposure that I had six days prior to becoming symptomatic," Cowden said. "So many of those are friends who have metastatic breast cancer, who are extremely high risk."



It's just horrifying that we don't have a system in place that would facilitate her being tested—or anyone like her being tested—or any of us being tested.

— Fran Visco



What about Cowden's husband? Her community?

The prediction of her primary care physician was incorrect, too. She wasn't admitted. She left empty-handed, with only a change in antibiotics to show for the visit.

5:17 PM Tue Mar 17

myhealthrecord.com

Intercoastal Medical Group

For emergencies, please call 911

Welcome, Janice!

Medical Question: Cough & wheezing

From: Janice Cowden
To: [Redacted]
Yesterday at 2:30 PM

Medical Question: Cough & wheezing

I was seen in the office on Tuesday, 3/10/20 (Amy) on my 3rd day of fever, cough, wheezing, sore throat & headache. Treated with Azythromycin, MethylPrednisolone, & Rx antitussive. Chest x-ray was negative. Influenza negative, strep questionably/faintly positive. My cough continued to worsen, wheezing worsened, chest congestion worsened. Temp ranged between 99.0 - 100.5 through Friday. I called on Friday afternoon to report worsening cough and congestion. I was told to go to the walk-in Intercoastal clinic at 8 am on Saturday 3/14/20.

Exam by Dr. [Redacted] on 3/14. He acknowledged wheezing and crackles in lungs, ordered a nebulizer treatment in the office, which did not clear the audible wheezing & crackles. He then recommended I go to the ER "for possible Coronavirus testing and potential admission," based on his exam.

I drove to Doctor's ER on Hwy 70, was examined and found to have "wheezing and crackles" in lungs, normal temp, at which time another chest x-ray was ordered, as well as labs. Chest x-ray was negative for pneumonia, labs were within normal range. Another influenza swab was done, which was negative. I specifically asked to have COVID19 testing done, and was refused based on CDC criteria of 1. No personal international travel within the past 90 days, and 2. No documented/known COVID19

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Greenway Health

"Doctors Hospital of Sarasota orders COVID-19 tests for admitted patients based on the Florida Department of Health testing guidelines," a spokeswoman said to *The Cancer Letter*. "We have treated one positive COVID-19 patient. That patient has been discharged."

Hospitals in the area only test patients who are admitted, and Cowden was not. Her symptoms weren't severe enough. Had she developed pneumonia, or had she falsely claimed to have travelled outside the country in the past 90 days—perhaps she could have qualified for a test.

COVID-19 kits include nasopharyngeal swabs, which testing facilities like Labcorp require to diagnose whether a patient is positive.

The aftermath

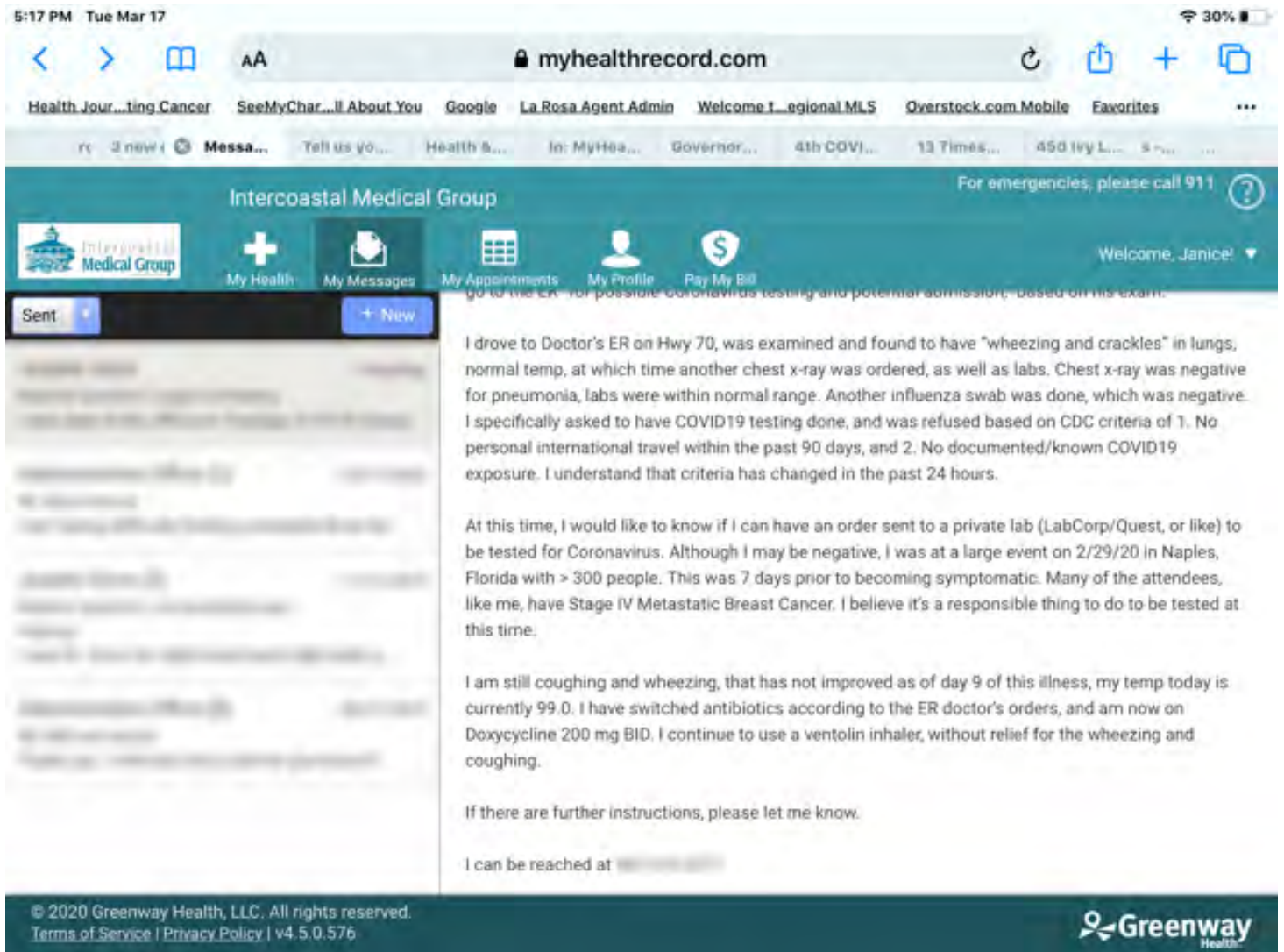
Undeterred by three unsuccessful attempts to get tested, Cowden contacted her oncologist at MD Anderson Cancer Center to see whether she could intervene.

The answer was one she was already familiar with. MD Anderson, being a few states away, couldn't help. Her on-

cologist recommended that Cowden reach out to her primary care provider once again.

Cowden messaged her primary care physician through the patient portal on March 16, nearly a week after her initial appointment:

"At this time, I would like to know if I can have an order sent to a private lab (Labcorp/Quest, or like) to be tested for coronavirus. Although I may be negative, I was at a large event 2/29/20 in Naples, Florida with > 300 people. This was 7 days prior to becoming symptomatic. Many of the attendees, like me, have



stage 4 metastatic breast cancer. I believe it's a responsible thing to do to be tested at this time."

The coughing and labored breathing had yet to stop. It was Day Nine of her ordeal.

The response was illuminating:

Intercoastal Medical Group, which has more than 50 primary care physicians, had only received 10 testing kits. As of March 18, the location where Cowden receives care had not yet been given a single test kit, a physician wrote to Cowden.

What happens next?

The first death from coronavirus in Manatee County, where Cowden lives, occurred March 17.

At this writing, there are 432 documented cases of COVID-19 in Florida, and Cowden isn't one of them, even if she has the disease.

When she spoke on the phone with this reporter, the conversation was interrupted by bouts of coughing.

"Of course I will self-quarantine as long as the guidelines and the restrictions are in place that have asked all citizens to quarantine," Cowden said. "But even my own family, I mean, my husband—has he been exposed or has he not? And have all of my friends been exposed that I was around, or have they not?"

"I have many friends who live here, between being on rheumatoid arthritis medicines, and all different conditions," Cowden said. "I have friends who are older than me, who are high-risk. If they get sick, what happens to them if this doesn't change?"

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Nelson spoke with
Paul Goldberg, editor and
publisher of The Cancer Letter.

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CONVERSATION WITH
THE CANCER LETTER

Nelson: How Hopkins is managing COVID-19 pandemic



“

For clinical care of cancer patients, there will be increasing use of telephone and telemedicine interactions when treatment infusions, physical examinations, and procedures in the ambulatory setting are not felt to be absolutely necessary.

”

William G. Nelson, MD, PhD

*Director, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins;
Professor of Oncology*

Preparing for a surge in COVID-19 cases this week, the Johns Hopkins health system is relying on the recently-activated Johns Hopkins Medicine Incident Command Center to prioritize the institution's patient care and research functions and coordinate the opening of testing tents and drive-through testing sites.

"As you might imagine, cancer care providers, researchers, trainees, and support staff are working intensely at the moment through Incident Command Center structures to ensure the best care for cancer patients through the expected surge in COVID-19," William G. Nelson, director of Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins and professor of oncology, said to *The Cancer Letter*.

"My advice to other cancer centers is to activate hospital/health system emergency preparedness capabilities, such as command centers, and to work with public health authorities, other cancer centers, and health systems to share insights and implement best practices as all of us confront a massive surge in COVID-19," Nelson said.

Nelson spoke with Paul Goldberg, editor and publisher of *The Cancer Letter*, on Sunday, March 15.

Paul Goldberg: Thanks for agreeing to talk with me. I am sure you are insanely busy dealing with this. What are we up against?

William Nelson: You are right, cancer centers are busy implementing a wide range of tactics in order to provide care for cancer patients with and without COVID-19, to ensure health and safety of employees, staff, and trainees, and

to prioritize and preserve essential research capabilities.

How are you managing this?

WN: For clinical care of cancer patients, there will be increasing use of telephone and telemedicine interactions when treatment infusions, physical examinations, and procedures in the ambulatory setting are not felt to be absolutely necessary.

Intensive treatments/procedures, such as bone marrow transplants for sickle cell disorder, that can be delayed will be delayed.

Patient/family entry into treatment facilities will be restricted to points where screening for COVID-19 symptoms can occur. Family members accompanying outpatients of visiting inpatients will be limited to one, and all visitors will be subjected to screening.

As much as possible, patients are being screened by phone before essential ambulatory visits, such as for treatment infusions.

An algorithm is used for patients with symptoms compatible with COVID-19 that should secure rapid intervention (including isolation while needed) for those with neutropenia or who are on treatment with immuno-oncology drugs who may require urgent care or hospital admission.

Testing of symptomatic patients, including cancer patients, for COVID-19 is ongoing, using an in-house test at the moment.

Testing tents and drive-through testing sites are or will be coming on-line at all of our cancer treatment sites. Increased

availability of testing over the coming days will be very helpful.

Laboratory research will be dialed down significantly, with essential needs, including welfare of laboratory animals, upkeep of critical instrumentation, etc., to be managed by a reduced number of people on-site.

Work at home has already been encouraged. There will be no visitors allowed in laboratory research facilities.

Clinical research will be similarly attenuated with new accruals to existing trials allowed only when medically necessary (for example, our bone marrow transplants are done as part of clinical studies).

Also, it's unlikely that new clinical trials will be launched until the pace of the SARS-CoV-2 epidemic is better understood.

Finally, as you might imagine, cancer care providers, researchers, trainees, and support staff are working intensely at the moment through Incident Command Center structures to ensure the best care for cancer patients through the expected surge in COVID-19.

When and how did you set up the command structure?

WN: My memory is that the Johns Hopkins Medicine Incident Command Center was activated at the end of February.

We have had dedicated working groups of cancer center personnel focused separately on clinical care, laboratory research, clinical research, and training/human resources since around that time.

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These worked as part of the JHM Incident Command Center until we activated our formal command center last week. Our command center rolls up to the JHM Center, enduring coordination of all functions: physicians, nurses, security, facilities, supply, etc.

What kind of in-house tests are you using? Were they on the shelf to begin with, or did you have to develop and manufacture them in a hurry? What can you say about the logistics and economics of that?

WN: Our Laboratory Medicine team created an assay compliant with the FDA Emergency Use Authorization, deployed last week and now scaling up rapidly. As commercial tests become available, I suspect they will also be used. I have no clue as to the economics.

As a scientist, what can you tell me about the way the virus is behaving? Does it behave similarly to the Coxsackievirus, for example? Can you prognosticate about what we are in for? How many cases? How long?

WN: I think that there are many uncertainties related to SARS-CoV-2, including its mechanisms of pathogenesis, whether it will exhibit some sort of seasonality, what might be the nature of protective immunity (including whether antibodies from convalescent serum could be used in an emergency setting), how effective available treatment (tocilizumab, remdesivir, etc.) might be, and how long it will take to discover

and develop more effective interventions, whether full-on “social distancing” might attenuate the surge of cases threatening to swamp health systems, and whether a vaccine can be created to arrest future threats from this virus in coming years.

What's your advice to your colleagues at other cancer centers?

WN: My advice to other cancer centers is to activate hospital/health system emergency preparedness capabilities, such as command centers, and to work with public health authorities, other cancer centers, and health systems to share insights and implement best practices as all of us confront a massive surge in COVID-19.



My advice to other cancer centers is to activate hospital/health system emergency preparedness capabilities, such as command centers, and to work with public health authorities, other cancer centers, and health systems.



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Curigliano spoke with
Alexandria Carolan, a reporter
with The Cancer Letter.

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CONVERSATION WITH
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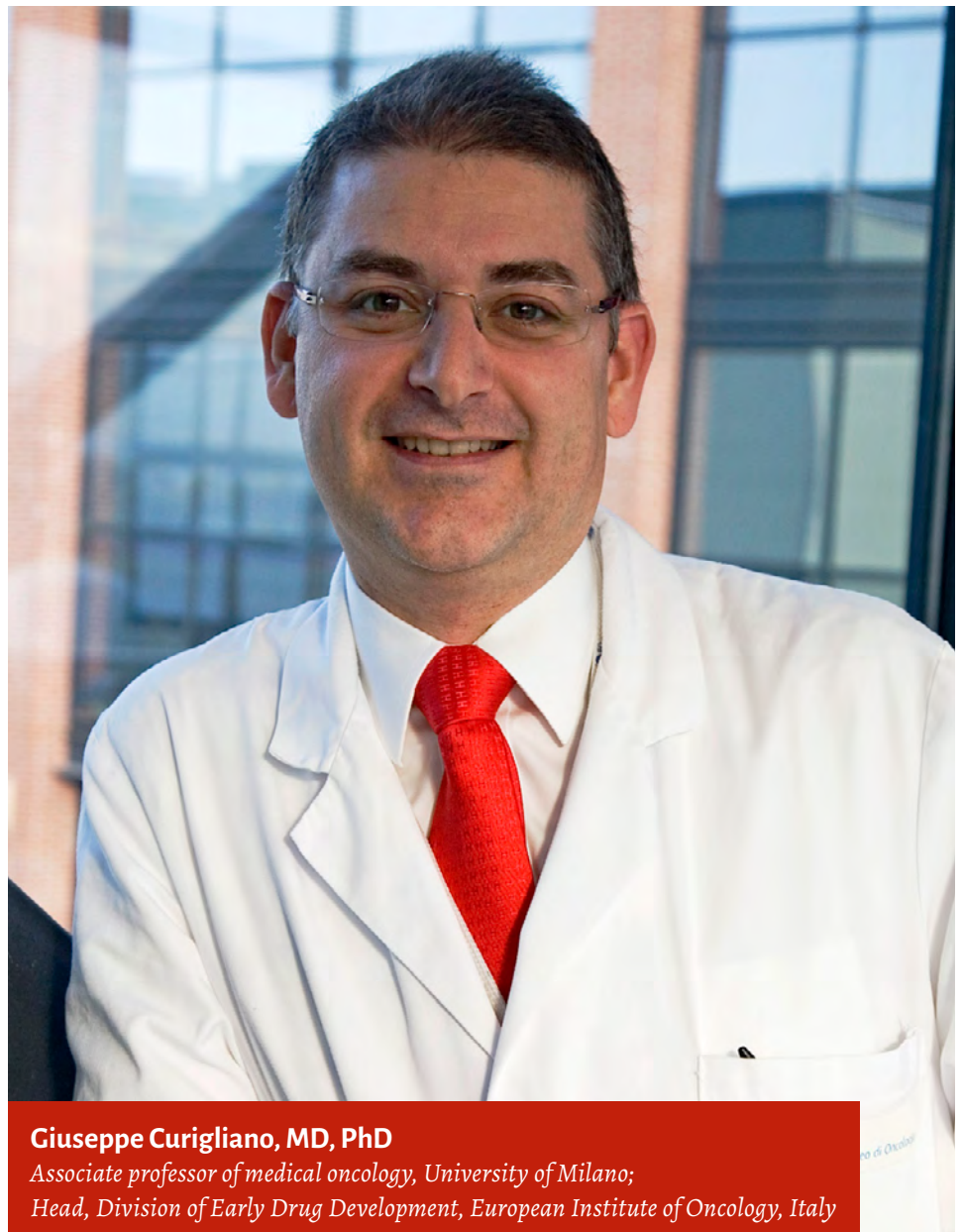
Curigliano: “I don’t want to see more people dying”

As COVID-19 deaths rise in Italy, oncologists hope to see the curve flatten

“

I don’t want to see more people dying. I would like to flatten the curve and to see this infection go down.

”



Giuseppe Curigliano, MD, PhD

Associate professor of medical oncology, University of Milano;

Head, Division of Early Drug Development, European Institute of Oncology, Italy

When *The Cancer Letter* spoke with Giuseppe Curigliano last week, he described the atmosphere in Italy as “spectral” (*The Cancer Letter*, [March 13](#)).

At the time, there were 10,000 confirmed cases and 631 deaths from coronavirus in Italy.

At this writing, just a week later, there are 41,035 confirmed cases, and 3,405 deaths. And the numbers are rising.

“I don’t want to see more people dying. I would like to flatten the curve and to see this infection go down,” Curigliano, clinical director of the Division of Early Drug Development for Innovative Therapy, co-chair of the Cancer Experimental Therapeutics Program in the Department of Oncology and Hemato-Oncology, University of Milan, at the European Institute of Oncology, said when we checked in with him again.

Cities and states in the United States have just started enforcing the closure of restaurants, movie theaters, and bars to slow the spread of the coronavirus—and to prevent numbers of cases and deaths from climbing as rapidly as Italy’s. All of Italy began enforcing a mandatory lockdown two weeks ago.

“We can’t see the effect of this locking down and social isolation yet. We will see the effect next week,” Curigliano said, hopefully.

Curigliano has one piece of advice for the United States government:

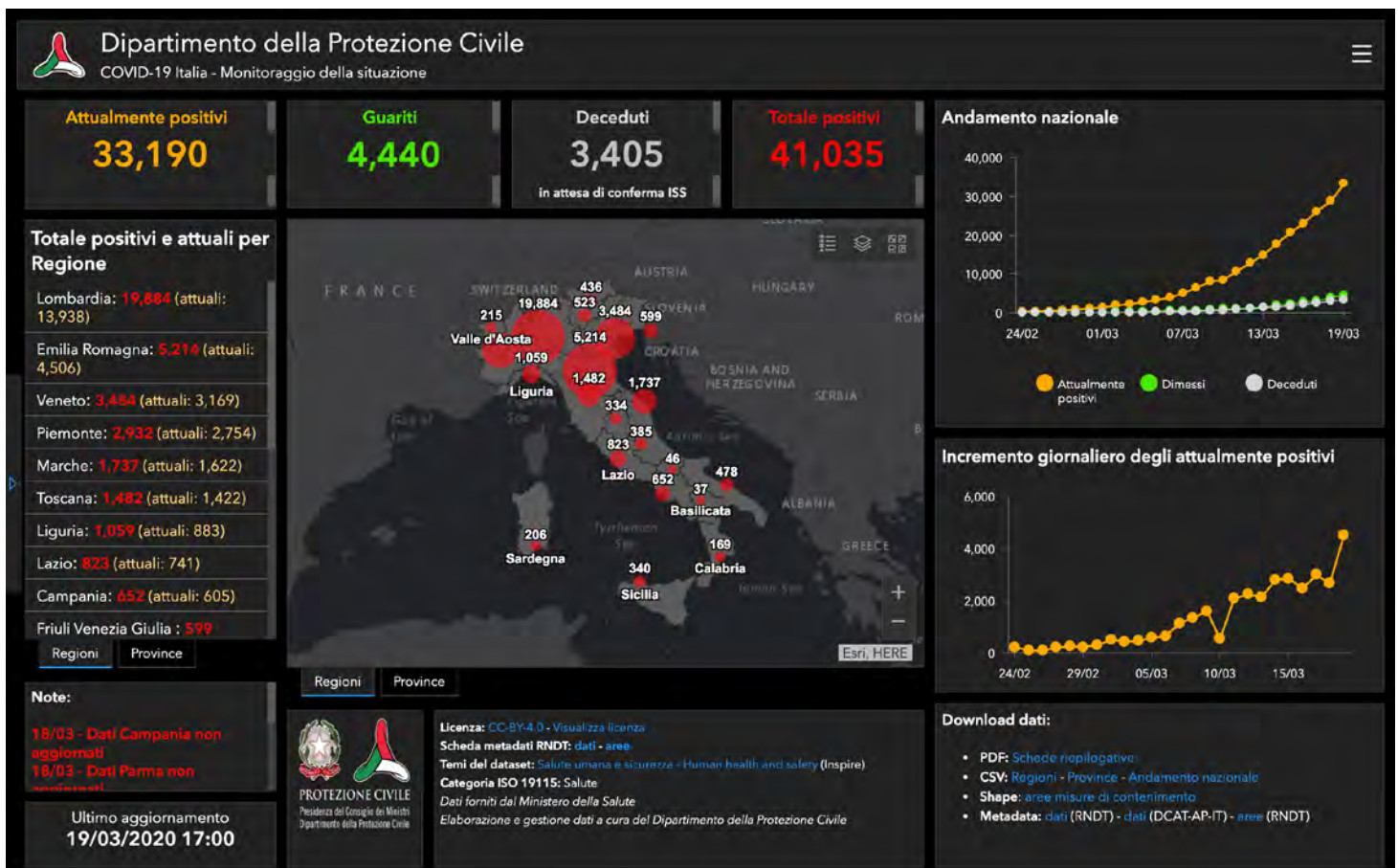
“The most important thing is to apply, as soon as possible: Procedures of social isolation and of containment in specific areas. I know this will be very expensive in terms of the economy, but I believe that one life is much more important than money.”

Curigliano spoke with Alex Carolan, a reporter with *The Cancer Letter*.

Alex Carolan: I know you’re very busy and have patients who have COVID-19 who also have cancer, so, again, your time is very valuable and I appreciate you taking the time to speak with me.

I’d like to begin by following up on where we left off last week. What’s changed since then? Have things changed drastically?

Giuseppe Curigliano: Yes. I can show to you the data, because I can share the screen if you want.



Source: Italian Department of Civil Protection (March 20, 10:30 a.m.)

Yes, that'd be great.

GC: And I have in front of me the data, and it's very interesting.

What's changed in respect to our last interview? We have, actually, something like 41,000 positive patients. And if you look at the curve, there is clearly an increase of the numbers of positive cases.

You have, in yellow, the number of new cases that are defined as patients that have been hospitalized or with symptoms at home, and then you have the number of people who died. This is in gray.

As of March 19, 3,405 people died. We have much more cases and much more death, and if you look at the data in Regione Lombardia, we have close to 8,400 people hospitalized due to symptoms, and 1,006 in intensive care. And in Regione Lombardia, 2,168 died, so it means that the majority of patients who died are concentrated in Regione Lombardia.

Look, this is the epicenter here: 19,884 people are positive. And in all of Italy, 3,405 patients died. The graph shows the number of new positive cases by day. We had a decrease during the weekend, then we had a rapid increase—and yesterday these were the new cases, most of them in the Milan area.

Because, you know, up to now in Milano we were very few there, the positive cases. Now, they are increasing day by day. We expect that after the lockdown established one week ago, we expect to see the decrease of this curve in one week, finally. Let us see. We hope so.

Do you expect the curve to go down or flatten out in one week?

GC: First flat, like The Washington Post presented, and then to go down. Yes.

So, that will indicate that these policies of being on lockdown and social distancing actually do work in this situation?

GC: We hope so, because we can't see the effect of this locking down and social isolation yet. We will see the effect next week.

That makes sense. Some have said that the U.S. seems to be only a week or two behind Italy in this regard, and you can even see since last week we have over 10,000 cases now. I think this time last week we had less than 1,000. Do you think that the U.S. seems similar to Italy in how things are progressing here?

GC: Looking at the data in Spain and in France, actually, the increase in the number of cases was very similar to the one in Italy.

We started with very few cases and very few deaths. We started our experience on Feb. 24, and the number of people who died then were seven. Feb. 24 was just three weeks ago.

Now, we have 41,000 cases positive, and 3,400 deaths. So, I don't believe that in the United States, the logarithmic curve will be different, unless you will start with specific lockdown recommendation or social isolation before you have all of the positive cases that we have.

Right. That's what some cities and states are trying to do now, but the question is whether it's enough. We don't know yet.

GC: There is nothing more to do, because in order to prevent the epidemic spread of a virus, the only thing that you can do is social isolation, reduce contact, and containment of areas where you have patients who are much more concentrated.

If you don't do this, you will have many patients who arrive in the hospital, and you will spend a lot of money to treat the infection with antiretroviral treatment.

For those that will have access to intensive care, the cost in terms of lives, and in terms of the health care system will be higher.

So, it's better to do a low-cost approach, low-cost in terms of health approach, because I know it is a high cost in terms of economics. But in Italy, we decided to give priority to health and not to economy.

I remember last week, when we spoke, you mentioned that your wife is an intensive care doctor. How is she continuing to handle COVID-19? How are you both feeling about the situation?

GC: As I said to you before, my wife is an intensive care doctor, and burnout is quite stressing, because the job of a doctor working in the intensive care is to save lives.

Usually, you have patients with trauma, or patients after car accidents, or patients

in the post-cardiac surgery setting, or patients with myocardial infarction—so you need to save as many lives as you can.

If you see the data, we have many patients dying, so for intensive care doctors, I believe and I see that burnout is really a problem. It's very stressful to see so many people dying.

Of course. Have you both received tests for COVID-19 since we last spoke?

GC: I did. It was negative, and my wife also did, and it was negative.

That's good to hear. Last week, you said you had symptoms of coronavirus, but you tested negative.

GC: Yes, yes.

But those symptoms have gone away now?

GC: Yes, absolutely. It's better now. Yes.

That's great. And I know, yesterday [over email] you had mentioned to me that you were actually treating one of your cancer patients who has COVID-19. Could you talk about how you care for your cancer patients who have tested positive for COVID-19?

GC: Yes. This was a cancer patient with non-small-cell lung cancer, with a specific alteration that was RET-amplified on the primary tumor.

He's a patient with metastatic lung cancer, and six months ago he started the treatment with an experimental therapy that is an anti-RET tyrosine kinase inhibitor. Ten days ago, he developed a cough and fever. He was living in a high-incidence area for COVID-19—the city of Bergamo.

So, we really understood that these were symptoms from the infection.

We stopped treatment, and we invited him to contact the national emergency number. He said no, but we did it for him.

We contacted the national emergency number, and the doctors went to his home, picked him up, and they brought him to the hospital. He was COVID-19-positive. After two days of fever, he developed a very serious interstitial pneumonitis, and now he's in intensive care.

We have daily contact with the intensive care unit taking care of him, because he's in a clinical trial. He's alive. He's stable. There is no improvement until now. We hope, we really hope, he can recover.

How many patients with COVID-19 also have cancer?

GC: In China, they have very limited statistics. Out of 1,000 cases, they identified 18 patients with cancer, so it's very limited cases.

The data in Italy, we have the data, they have released today. A first analysis on 355 out of 2003 who died (17.7%)

has been performed. Of 355, they identified 72 patients (20.3%) with history of active cancer concurrent to COVID-19 infection.

According to the data of the Chinese population, the case fatality rates, access to intensive care units, and acute respiratory distress syndrome, was very high for cancer patients.

In a retrospective analysis including 1,572 COVID-19 patients cases, authors identified 18 patients with cancer. Patients with cancer were observed to have a higher risk of severe events (a composite endpoint defined as the percentage of patients being admitted to the intensive care unit requiring invasive ventilation, or death) compared with patients without cancer (seven [39%] of 18 patients vs 124 [8%] of 1,572 patients).

Moreover, patients who underwent chemotherapy or surgery in the past month had a numerically higher risk (three [75%] of four patients) of clinically severe events than did those not receiving chemotherapy or surgery (six [43%] of 14 patients).

Are you only treating cancer patients right now, or, because of the amount of people who have COVID-19, have you switched to the general patient population?

GC: Actually, my center is a comprehensive cancer center that has been selected as a hub center for cancer patients in the area of Milan.

We are two centers, my center and the National Cancer Institute. It means that in my hospital, we treat only patients with cancer. In order to reduce the number of COVID-positive patients, we do

a checkpoint outside the hospital. We do a holistic briefing in order to understand if they have fever, cough, respiratory symptoms, or contacts with other people who are positive.

If we suspect a COVID-19 infection, we test them before admission to the hospital. There is a special area of the hospital where they can stay isolated with a special team of nurses. If they are positive, of course we take care of them if they have mild symptoms.

They will not start treatment. We wait for resolution of symptoms or infection in a specific area of the hospital. If they are negative, they have access to the hospital and we do surgery or we start the treatment.

The center that you're talking about, it's the European Institute of Oncology?

GC: Yes, the European Institute of Oncology.

Did the European Institute of Oncology have to make any changes to how it admits patients, or the number of patients it can take in because of COVID?

GC: We made a lot of changes. First, we make a lot of phone calls. Every day, we contact up to 500 patients. We ask them if they are fine, if they have fever, if they have a cough—in order to limit the access to the hospital of patients who are potentially sick.

For patients taking oral medication, let's say, oral chemotherapy, or oral tyrosine

kinase inhibitors, or any other type of oral treatment, we use telemedicine in order to assess toxicity, and we provide the oral treatments at home.

We have a delivery service, so we provide them with two months or three months treatment. We invite them to do blood tests close to home. Every three weeks, we have a televisit, in which we assess toxicity.

In case patients have any other symptoms before the interval time of three weeks, they can contact us by email, and we do the teleconsultation on the same day.

Then, for any patients who have access to the hospital, we have a checkpoint external to the hospital, where nurses usually take body temperature and do an analysis for cough and contact with other people.

We give a special pin to the patients—a green pin—to enter the hospital, and then there is another checkpoint that is delivered by doctors. We do a second internal checkpoint in order to be sure that the patient is safe and not infected.

For the cases that are suspected, we do the tests for COVID-19, or a nasopharyngeal test. Now, we have several tests that can do assessment of IgG and IgM in the blood, also with a single drop of blood. If they are IgG positive, of course they are not infected. If IgM positive, we also do the nasopharyngeal test.

And then we have a specific area of our hospital with very few patients, less than three, for COVID-infected patients. For patients that are mildly symptomatic, there is a special area, and there is a trained team of nurses and doctors taking care of them.

We expanded the intensive care unit with four sub-intensive care and four intensive care beds, and we already

trained the nurses and doctors from other areas to take care of those patients in case we have patients developing ARDS. So, we are doing a lot of training, training for patients, for nurses, and for doctors. It's another hospital, finally, that is also instructed for COVID infection.

You mentioned that part of this is that you can deliver treatment to your patients. I was wondering about the drug supply. Does it seem like there are disruptions to the drug supply?

GC: The drug supply and the logistics, everything is maintained. There is absolutely nothing disrupted in terms of logistics.

The problem is for some patients, since there is a containment area, and many patients have to travel a lot—not for drugs—but other things are restricted. Many patients have difficulties getting access to the hospital.

For surgery, we have to plan, again, the day of surgery for some patients—but we are trying to take care of any patients. We are trying to minimize the logistical problems for our patients. If you have a patient that is a priority, we adapt our schedule to the logistics of the patient, in order to give the patients the best service available.

And have you seen any disruptions to clinical trials in Italy?

GC: A lot.

I'm sure.

GC: This is a very good question. We are writing specifically, actually, a manuscript on this. We have an increase of protocol violation that is exactly the same of the increase of the COVID-positive patients. Of course, you have to deliver the experimental treatment at home.

Many pharmacies have been very flexible. They said, Yes, you can do delivery, absolutely, because we don't want to have study treatment interruption. They are submitting, of course, an amendment for these problems, but until the amendment is approved, all are in protocol violation.

We have an exponential increase of protocol violations due specifically to missed visits, missed blood tests, or CT scans performed close to home—on time, but close to home, not in the center. And then we review internally in the center.

What I discovered during this crisis, is that many of our patients are very well digitalized. They have access to the internet. They can send you anything with internet, blood tests, images, clinical CT scans or MRIs—so telemedicine is very useful.

The other things that we discovered is that outside the doctors, many administrative people are working at home—so it means that you can do a better job at home without being in the hospital.

I believe many things will change after this crisis, and that we will have a boost for telemedicine and for patient-reported outcomes from home.

We created an app in our hospital. It's very interesting. The app is on the iP-

hone for the patients, in which they can inform us every day about body temperature, respiratory symptoms, contact with suspect COVID-19 cases—but they can also report toxicity day-by-day. So, paradoxically, we have much more data now that the patients are not in the hospital than before.

Wow. So, you developed this app because of COVID?

GC: Yes, a top bioinformatician working in my hospital developed it. Now, we are going to validate the app in a larger population. In my division, we started with a very limited number of patients. It works, and we can collect the data directly from the patients.

Are you able to monitor your specific patients through this app?

GC: Yes, if you collect it, every day you receive data. For all the patients in which there is a suspect of infection, you can call him or her. And also, since you have many other parameters related to toxicity, maybe you can discover that the patient has nausea, vomiting or fatigue—and so you contact them. It's very easy to have a real-life monitoring of patients receiving treatment at home.

Stepping back a little bit, I know that Italy is overwhelmed with cases of COVID right now, and you're hoping to flatten that curve, make the curve go down. Have you or anyone you know had to prioritize certain patients with COVID to receive care?

GC: You mean for the general population of patients?

Yes.

GC: Actually, the attitude of people working in intensive care is to do a baseline assessment of the patient beyond age and comorbidities.

If you have two patients, one that is 35 years old, and another who is 75 years old, in order to decide, if you have one bed in the intensive care unit, it should be the patient that has a higher probability of survival.

There is no selection of patients based on age or comorbidities, but just based on a triage that is based on the probability of survival.

And bringing this back to cancer patients, is there a suspected mortality rate among cancer patients?

GC: As I said before, today we had the first release of some data. A first analysis on 355 out of 2003 who died (17.7%) has been performed. Of 355 they identified 72 patients (20.3%) with history of active cancer concurrent to COVID-19 infection.

How many of your patients that you've treated personally have had COVID?

GC: One confirmed and two suspected.

66

What changed, actually, is that the national atmosphere is more positive now. We have awareness of what is going on, and everybody in the country is trying to stay home and to avoid going around.

99

And that's because, also, you work in the hub that is COVID-free, right?

GC: Yes, we try to maintain a COVID-free hub. In our hospital, there were not so many admissions of many patients who were positive from outside.

In the U.S., researchers here have said that they expect five to 10 undiagnosed cases for each confirmed case. Do you know if something similar might be happening in Italy?

GC: My perception in Italy, actually, is that we have many positive cases at home, and so, these patients will never be tested, even though they have symptoms of COVID-19. Many of them may die, especially if they are elderly patients who live alone. We will never register them as a COVID-associated death.

In my opinion, in Italy we have many more cases at home with mild symptoms, which means that we will not really have a clear scenario of the epidemiology of this infection. We believe that we have 41,035 positive cases, because they had access to hospital, but in my opinion we have much more.

Really?

GC: Yes. We have some doctors who are actually positive in my hospital. The

last update in Italy is that 3,000 health care personnel have been or are infected. We know also that 14 doctors died. Many doctors are at home, they have symptoms, and some of them have not been tested, but they decided to be in quarantine, because they suspect that they have COVID.

Those are cases that we know, probably, are positive, but they are not registered as positive. And they are doctors; think about all the general population of many patients that have fever, cough, with mild symptoms, and nobody to do the test.

If you're quarantining at home, how do you receive a test? Can you only go to the hospitals?

GC: Usually, the recommendation of the National Health Service, if you have fever or cough, you should call an emergency number. An assessment will be done by phone. If a patient has mild symptoms, we have the local practitioner.

The National Health Service in Italy is organized with thousands of doctors close to the patients, and usually those patients are visited by the local doctor, and if they have mild symptoms, they have to stay at home. But they are not tested.

Given the patients who are potentially unaccounted for in Italy, is there a realistic number of deaths that your modelers expect to see at the end of this?

GC: My hope, actually, is that social isolation and containment will reduce the number of deaths. If we reduce the number of positive cases, we will reduce the number of deaths.

I believe the number of deaths in China is underestimated. This is a personal opinion, I believe, because out of 80,000 positive cases, 3,000 have died. That's really a limited number.

Maybe we have many more elderly patients, this can be a reason. Or maybe we have many more patients with comorbidities. The median age of the population in China with COVID-19 was 47 years old, if you look at the paper in [*The New England Journal of Medicine*](#).

The median age of our population is who have died is 79 years old, so it's a little bit different. I don't want to see more people dying. I would like to flatten the curve and to see this infection go down.

I think the U.S. has a lot to learn from Italy, in terms of flattening the curve. It seems like we're just getting on board, but cases are rising exponentially still, so this is very informative. Do you happen to know of an online source about COVID in cancer patients specifically, or do you know of any preliminary papers about COVID and the disease that we can access right now?

GC: We are collecting information with the the Associazione Italiana di Oncologia Medica (AIOM). There is actually a survey in which we are collecting all the

positive cases. It's ongoing work, and we hope to have the data in a few weeks.

Last week, you described the atmosphere in Milan as spectral. You said only pharmacies, supermarkets and hospitals were open. Has anything changed?

GC: What changed, actually, is that the national atmosphere is more positive now. We have awareness of what is going on, and everybody in the country is trying to stay home and to avoid going around.

Everybody knows, now, that we are doing this to protect ourselves first, and to protect the others. There is much more awareness about being Italians, so it's a positive atmosphere, actually.

It's like being in war, but there's also the awareness that we can win this war altogether, positively, for patients who are hospitalized, but also patients with no disease. It is much more important for people with no disease to stay home, because this will help the patients actually hospitalized.

You've probably seen it, but there was a video going around online of people in Italy, on their balconies, singing together.

GC: Yes. These are Italians. Yes, I know. I saw these people on YouTube. In Naples, in Rome, everybody is singing on the balcony, in order to work together and to win this war against COVID-19. Yes.

But Italy is also the country where we increase ICU beds by 50% in 2 weeks. For mild and moderate cases, in Milan, we are going to create a mobile cabin hospital in Fiera Milano Exhibition Center (converted from convention center into temporary large-space treatment center for 600 beds).

That's great. Is there anything else you'd like to add, anything else you think would be really important for our readers to know?

GC: The most important thing is to apply, as soon as possible, procedures of social isolation and of containment in specific areas. I know this will be very expensive in terms of the economy, but I believe that one life is much more important than money.

Of course. I'd love to keep in touch going forward to see how things progress.

GC: Yes, of course.

We do have a lot to learn from your own experiences with the virus, so thank you again for your time.

IN BRIEF



NCCN releases recommendations for standardizing quality measurements in oncology

The National Comprehensive Cancer Network has published a curated list of high-impact measures for assessing quality improvements in cancer care.

The recommendations reflect a landscape analysis from leading oncology experts; they evaluate measures that, if implemented, will move the needle on cancer care standards in America, with potential implications for policy and coverage. The article, *Quality Measurement in Cancer Care: A Review and Endorsement of High-Impact Measures and Concepts*, is available via open access in the March 2020 issue of *JNCCN—Journal of the National Comprehensive Cancer Network*.

The NCCN Quality and Outcomes Committee was first founded in 2016 in order to develop quality and outcome measures in oncology that are:

- more standardized
- contemporary
- clinically relevant
- easily implemented, and
- broadly applicable.

The committee reviewed 528 existing oncology quality measures and new measure concepts that could be appropriate for development. This list was narrowed down into 22 recommendations—based on importance, supporting evidence, opportunity for improvement, and ease of measurement—including endorsement of 15 existing measures and seven new concepts proposed for development.

“The key question underlining all of our efforts is: how can we use quality measurements to improve the experience and outcomes for people with cancer?” Thomas A. D’Amico, of Duke Cancer Institute, chair of the NCCN Quality and Outcomes Committee, said in a statement. “We paid particular attention to cross-cutting measures that would signify better delivery of care for all different cancer types, while also drilling down into specifics for the highest incidence cancers that affect the most people.”

Full descriptions of the 22 recommendations, including an explanation of how they each represent important diagnostic and treatment decisions across the continuum of care, can be found at JNCCN.org.

UCLA awarded \$2.7 million to study AI role in improving cancer diagnosis

Researchers from the David Geffen School of Medicine at UCLA and UCLA

Jonsson Comprehensive Cancer Center have received a \$2.7 million grant from NCI to develop techniques to improve the quality of prostate magnetic resonance imaging and new artificial intelligence methods that use prostate MRI to assist cancer diagnosis.

The five-year project, led by Kyung Sung, associate professor of radiology, and Holden Wu, associate professor of radiology, bioengineering and biomedical physics, will help radiologists improve their ability to diagnose prostate cancer and help identify and predict the aggressiveness of the disease.

The new techniques will be evaluated in men who undergo prostate MRI and proceed to biopsy or surgery.

Previous studies led by Sung have shown artificial intelligence can perform as well as experienced radiologists in detecting prostate cancer. Improvements to the current system could help not only save time but potentially provide diagnostic guidance to less-experienced radiologists. Sung and Wu have also developed advanced quantitative MRI techniques that will be combined with artificial intelligence to maximize the performance for prostate cancer diagnosis.

FDA requires new health warnings on cigarette packages, ads

FDA has issued a final rule that requires health warnings on cigarette packages and in cigarette advertisements.

The warnings feature text and with photo-realistic color images depicting some of the lesser-known, but serious health risks of cigarette smoking, including impact to fetal growth, cardiac disease, diabetes and more.

“The 11 finalized cigarette health warnings represent the most significant change to cigarette labels in more than 35 years and will considerably increase public awareness of lesser-known, but serious negative health consequences of cigarette smoking,” Mitch Zeller, director of FDA’s Center for Tobacco Products, said in a statement. “Research shows that the current warnings on cigarettes, which have not changed since 1984, have become virtually invisible to both smokers and nonsmokers, in part because of their small size, location and lack of an image. Additionally, research shows substantial gaps remain in the public’s knowledge of the harms of cigarette smoking, and smokers have misinformation about cigarettes and their negative health effects.”

Beginning June 18, 2021, health warnings will be required to appear prominently on cigarette packages and in advertisements, occupying the top 50% of the area of the front and rear panels

of cigarette packages and at least 20% of the area at the top of cigarette advertisements. Once implemented, the new warnings must be randomly and equally displayed and distributed on cigarette packages and rotated quarterly in cigarette advertisements.

Also, FDA has issued a [guidance](#) to accompany the final rule.

The final cigarette health warnings each consist of one of the following textual warning statements paired with an accompanying photo-realistic image depicting the negative health consequences of smoking:

- WARNING: Tobacco smoke can harm your children.
- WARNING: Tobacco smoke causes fatal lung disease in nonsmokers.
- WARNING: Smoking causes head and neck cancer.

- WARNING: Smoking causes bladder cancer, which can lead to bloody urine.
- WARNING: Smoking during pregnancy stunts fetal growth.
- WARNING: Smoking can cause heart disease and strokes by clogging arteries.
- WARNING: Smoking causes COPD, a lung disease that can be fatal.
- WARNING: Smoking reduces blood flow, which can cause erectile dysfunction.
- WARNING: Smoking reduces blood flow to the limbs, which can require amputation.
- WARNING: Smoking causes type 2 diabetes, which raises blood sugar.
- WARNING: Smoking causes cataracts, which can lead to blindness.

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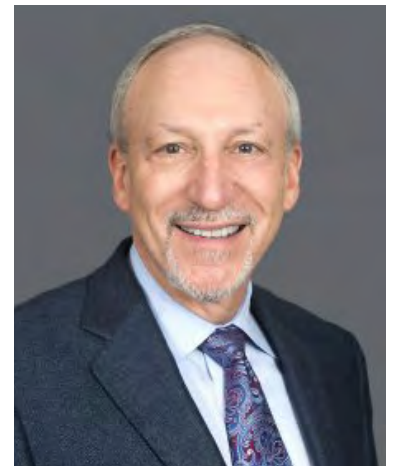
What community cancer centers need to know about COVID-19

As the incidence of the COVID-19 pandemic increases in U.S. communities, the needs of cancer patients, and those caring for them, are at the forefront of our attention and action.



By Jeff Patton

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By Lee Schwartzberg

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Cancer patients are among those at a high risk of developing serious illness or death from COVID-19 pneumonia regardless of age, due to immune system suppression caused by their disease or therapy.

As the pandemic has spread across Asia, exploded in Europe and emerged as a serious threat in the United States, the oncology community has activated to prepare for patient care and to communicate clearly with patients, caregivers, colleagues and staff about how we can best mitigate the risks for those living with cancer as patients, caregivers and providers.

Community cancer centers play an important role in this conversation and in the fabric of caring for those with cancer across the United States. As two oncologists in the community setting and as leaders of a national oncology practice partnership, we've spent the last few weeks with our practices and leaders in our communities, to set in place strategies to flatten the curve of the virus' exponential spread, care for our vulnerable patients, and mitigate exposure to those providing lifesaving care.

Importantly, all acute care settings, including community cancer centers, cannot become COVID screening sites. We're encouraged by the developing public-private partnership and public health response (especially in metropolitan areas with a track record of strong health care coordination) to stand up and organize testing facilities to triage our most vulnerable citizens for symptomatic screening. All communities need plans for screening symptomatic patients so high acuity care, including oncology care, can continue to be provided.

With the developing nature of this crisis, our strategy and discussion for commu-

nity cancer centers is organized by risk and focused on our patients and the physicians and staff who care for them. These recommendations are subject to change on a daily basis in this fluid and rapidly changing environment.

Low-risk patient strategy

Appointment rescheduling: We recommend rescheduling all non-essential treatments, such as screenings, six-month or annual check-ups for those without active cancer, while focusing on treating those with active cancers. We also recommend bringing a maximum of one family member/caregiver with each patient, none under the age of 16.

Utilization of telehealth services: Since community cancer centers are a different type of cancer center from hospital based and academic centers where we see more patients with low acuity than other sites of care, communicating with patients who are not in active treatment to keep them out of cancer centers and practicing social distancing is important.

The Centers for Medicare and Medicaid Services' (CMS) waiver issuance on both HIPAA sanctions to improve data sharing and to allow for Medicare reimbursement providers for telehealth services are significant.

These waivers will allow providers to move six-month and annual checkups to virtual visits, helping keep patients at home. With Medicare reimbursements for telehealth services, providers will be able to utilize platforms, such as FaceTime, Zoom, or Doxy, to remain in constant contact with their patients.

Screening: Practices should be screening patients for the following prior to or immediately upon arrival to the clinic:

- Been in close contact with someone who has been diagnosed with COVID-19 during the last 14 days.
- History of travel to or have been in close contact with someone who traveled to areas of widespread or community COVID-19 transmission during the last 14 days.
- Symptoms of COVID-19 (fever, cough, shortness of breath).
- Optional screening for fever for all individuals entering our clinics is at the discretion of each site but encouraged at sites with higher incidence of documented COVID-19 infections.
- Those that screen positive should contact their health care provider. Importantly, screening centers are beginning to get stood up in some communities around the country.

Medium-risk patient strategy

Active non-symptomatic patients: Physicians are best equipped to work with their patients regarding treatment regimens during this time, but generally patients on active treatment without symptoms should continue with their treatments. Patients and care teams must be in regular communications with patients in active treatment to ensure their treatments continue and so their exposure risk is minimized.

Patients with fever on active treatment: Patients who call in with fever who are on chemotherapy need to be seen by their oncologist or a designated provider who is assigned to evaluate these patients. These patients will need to be triaged—to their homes, isolation or area hospitals when necessary depending on their history and symp-

toms. These patients will likely undergo testing for influenza and COVID-19.

High-risk patient strategy

Vulnerable patients: Patients with neutropenic fever need to be seen by their physician and treated with IV antibiotics and other neutropenic precautions to prevent sepsis. Some of these patients could be sent to hospitals, but isolating them in community clinics may be preferable.

If a patient is suspected of having COVID-19:

- Immediately move the patient from the general waiting area into a well-ventilated space at least 6 ft or more away, preferably to an Airborne Infection Isolation Room (AIIR).
- If an AIIR is not available, then the patient should continue to use a facemask for the duration of the visit.
- Perform nasal swabs for influenza and COVID-19.
- Notify appropriate clinic staff (provider, IPC staff, and administrators).
- The patient's provider will determine the plan of care, including the recommended disposition (home or hospital).

If the patient does test positive for COVID-19:

- Daily telephone and/or telehealth visit with the patient, with disposition based on evolving symptoms.
- Notifying the local or state health department.

Staff strategy

Instill universal public health precautions: Perform hand hygiene (use 60% - 95% alcohol-based hand sanitizers or wash with soap and water for 20 seconds). Implement respiratory hygiene and cough etiquette including the use of a face mask, tissues, and coughing into sleeve, if tissues aren't available.

Wear full protective gear: Protecting those caring for patients is essential. As such, caregivers must use personal protective equipment (PPE), including gowns, gloves, and face masks for patients receiving chemotherapy.

Patient rooms: Clean and disinfect the room and equipment with a health care-grade disinfectant in the same manner used for other airborne illnesses before reusing. Staff cleaning rooms should use full PPE if patients were confirmed or suspected of contracting COVID-19.

Self-monitor and report: Staff and providers who use appropriate PPE or who have brief interactions with patients with suspected or confirmed COVID-19 are considered to be at a low exposure risk. All staff who have traveled overseas or whose families have traveled abroad must report that to the HR department.

Staff should also self-monitor and report acute respiratory symptoms to their provider and appropriate clinic leadership. And, of course, stay home if they have acute respiratory symptoms until cleared by their provider. Employees who stay at home with acute symptoms receive paid time off, so they don't put others at risk.

Exposed staff: Staff who believe they've been exposed to COVID-19 must follow the Centers for Disease Control and Prevention (CDC) protocol to help prevent the disease from spreading and to care for themselves. These steps

include self-quarantining by staying at home, separating yourself from other people and animals in your home. Also, staff need to call their health care provider, monitor their symptoms, and seek medical care if the symptoms worsen. Lastly, ensure your health care providers contact the local or state health departments.

Non-clinical staff/meetings: Change administrative meetings and tumor boards to virtual meetings to the extent possible. Utilize physician communication platforms to discuss patient cases.

Non-clinical staff work from home: Non-clinical departments should implement work-from-home policies.

Call to action

Sometimes, crises catalyze change. While remaining optimistic that by working together (and staying apart), our health care system can help mitigate the damage and protect our most vulnerable, we also hope our health care system can be improved by being tested.

Telemedicine, specifically remote patient communication and monitoring, are areas we believe will be recognized for their value during this pandemic. While community practices are early adopters of technology to improve patient communication outside the clinic, now is the time for practices to lean into this technology and for all payers to recognize the long-term value of remote monitoring with adequate reimbursement, not just during this crisis.

We hope the positive steps we take now to care for our patients and protect our citizenry can also spur change that will strengthen our ability to care for patients, when they are in our clinics and when they remain at home.

CLINICAL ROUNDUP



Pembrolizumab shows promise for some advanced, hard-to-treat rare cancers

A study conducted by researchers at MD Anderson Cancer Center demonstrated acceptable toxicity and anti-tumor activity in patients with four types of advanced, hard-to-treat rare cancers. Study findings were published in the March 17 online issue of the *Journal for ImmunoTherapy of Cancer*.

The open-label, phase II study followed 127 patients who had advanced rare cancers: squamous cell carcinoma of the skin, carcinoma of unknown primary, adrenocortical carcinoma, and paraganglioma-pheochromocytoma. All patients had tumors that had progressed on standard therapies.

The primary objective of the study was to find the proportion of patients who were alive and progression-free at 27 weeks on treatment with pembrolizumab. The median non-progression rate at that time was 28% for 127 patients with advanced rare cancers. Complete response, partial response or stable disease after four months was observed in

38% of the patients. Non-progression rates for each cancer group were: 36% for cSCC, 33% for CUP, 31% for ACC, and 43% for paraganglioma-pheochromocytoma. Treatment-related adverse events occurred in 52% of patients, with the most common side effects being fatigue and rash, with six deaths reported that were unrelated to treatment.

“Our findings that pembrolizumab has a favorable toxicity profile and anti-tumor activity in patients with these rare cancers supports further evaluation in these populations,” Aung Naing, associate professor of Investigational Cancer Therapeutics, said in a statement. “Finding solutions for treatment is vital given that patients with advanced rare cancers have poor prognosis and few treatment options.”

CUP is a type of cancer in which the primary cancer site is not always known, but has spread to other areas within the body, while ACC occurs when malignant cells form in the outer layer of the adrenal glands.

Paraganglioma-pheochromocytoma are tumors formed in nerve-like cells near the adrenal glands and near blood vessels or nerves in the head, neck, chest, abdomen, and pelvis.

Study suggests link between BMI, nutritional markers, and chemotherapy toxicity in older adults with tumors

A combination of body mass index and levels of albumin, a protein made by the liver, can predict how well older adults with cancer will be able to tolerate the side effects of chemotherapy, according to a study led by a researcher at Fox Chase Cancer Center.

The study was published in *Cancer*.

“Oncologists should carefully consider these factors as part of a comprehensive GA [geriatric assessment] before recommended chemotherapy for older adults with cancer,” the authors wrote of their findings, which they believe are the first to document a protective effect of high BMI in this population.

The study, led by Efrat Dotan, an associate professor in the Department of Hematology/Oncology at Fox Chase Cancer Center, used data on 750 patients ranging from 65 to 94 years of age who were treated with chemotherapy. More than half the patients (58.6%) were receiving therapy for metastatic disease. The overarching goal of this large study was to identify the most important factors that affect older adults who are treated with chemotherapy for advanced cancer.

In this report, Dotan and colleagues evaluated the association between chemotherapy toxicity and nutritional factors, including pretreatment BMI, unintentional weight loss in the prior six months, and albumin levels among older adults with solid tumors.

The results showed that among older adults with advanced cancer, higher BMIs and normal albumin levels were associated with a lower risk of grade 3 or higher chemotherapy toxicity, which is graded on a scale of one to five. A score of one indicates minor toxicity and five indicates patient death, Dotan said.

“The main conclusion from this study is that monitoring patients’ BMI is important and can predict for outcomes among older cancer patients who are undergoing anti-cancer therapy,” she said.

“In this study, patients with BMI that was greater than 30 saw the highest benefit in terms of chemotherapy tolerance,” Dotan said. These findings bring into question the appropriate BMI rec-

ommendations for older adults, as BMI greater than 30 is categorized as obesity and considered unhealthy by the Centers for Disease Control and Prevention.

Study: Melanoma is killing fewest Americans

Advances in treatment have led to the largest yearly declines in deaths due to melanoma ever recorded for this skin cancer, results of a study suggest.

Led by researchers at NYU Grossman School of Medicine, its Perlmutter Cancer Center, and Harvard University, the study showed that death rates among white Americans—the group that accounts for almost all cases—climbed 7.5% between 1986 and 2013, but then dropped by nearly 18% over the next three years.

The authors say the size of the declines outstrip comparable decreases in cancers of the prostate, breast, and lung. They also note that the unrivaled drop in melanoma deaths coincided with the introduction of 10 treatments. These treatments either harness the body's immune system to fight the disease or directly target melanoma cells that have a specific gene mutation.

“Our findings show how quickly patients and physicians accepted these new drugs because they profoundly reduce deaths from melanoma,” co-senior study author David Polsky, said in a statement.

The report, published *American Journal of Public Health*, is the first to highlight the role of these new drugs in helping Americans survive melanoma, says Polsky, who is also a professor in the Department of Pathology at NYU Langone.

The newer therapies, which came into use in the last decade, are far more ef-

fective and less toxic than standard chemotherapy, but are much more expensive, the investigators say. The drugs fall into two broad categories: those that target the BRAF gene, which is mutated in a little less than half of melanoma patients; and immune checkpoint inhibitors, which prevent melanoma tumors from tricking the immune system into ignoring the cancer.

For the study, researchers analyzed new cases and deaths from melanoma collected by NCI and CDC. These numbers spanned from 1986 to 2016 and involved nearly a million Americans. Polsky notes that the steep drop in deaths cannot be readily explained by better detection methods, because death rates did not drop steadily over time, but sharply. In addition, many health care groups have been pushing for early detection exams since the 1980s, so the timing of these declines matches up better with the introduction of the new therapies.

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DRUGS & TARGETS



China accepts sNDA for Zejula in ovarian cancer indication

The China National Medical Products Administration accepted a supplemental New Drug Application for Zejula (niraparib) as a maintenance treatment of adult patients with advanced epithelial ovarian, fallopian tube, or primary peritoneal cancer who are in a complete or partial response to first-line platinum-based chemotherapy.

Zai Lab Ltd. sponsors Zejula.

“We believe Zejula is a potential best-in-class PARP inhibitor due to its compelling efficacy, once-daily dosing and superior pharmacokinetic properties including its ability to cross the blood brain barrier,” Samantha Du, founder and chief executive officer of Zai Lab, said in a statement.

The PRIMA study conducted by GlaxoSmithKline demonstrated that Zejula treatment resulted in a 38% reduction in the risk of disease progression or death in the overall study population when compared to placebo. Zejula also demonstrated benefits in all

patient subgroups. For patients whose cancer is associated with homologous recombination deficiency positive status, Zejula treatment resulted in a 57% reduction in the risk of disease progression or death.

FDA previously accepted GSK’s sDNA application for Zejula as first-line maintenance treatment for ovarian cancer based on the PRIMA study.

The U.K. removes Keytruda from Cancer Drug Fund in bladder cancer indication

England’s National Institute for Health and Care Excellence has rejected Keytruda (pembrolizumab) in patients who receive locally advanced or metastatic urothelial carcinoma who have had platinum-containing chemotherapy.

Merck sponsors Keytruda.

The drug has since been removed from the Cancer Drug Fund, where it was available previously.

The National Institute for Health and Care Excellence said it couldn’t recommend the drug because of cost-effectiveness.

FDA approves Herzuma, equivalent of Herceptin, in indications

FDA has approved Herzuma (trastuzumab-pkrb) for injection in the same indications as the biosimilar Herceptin.

Teva Pharmaceuticals USA, Inc., a U.S. affiliate of Teva Pharmaceutical In-

dustries Ltd., and Celltrion Healthcare, sponsor Herzuma.

Indications include adjuvant breast cancer, metastatic breast cancer and metastatic gastric cancer. In these indications, patients should be selected for therapy based on FDA-approved companion diagnostic for a trastuzumab product.

Deaya, Pfizer collaborate on clinical trials

Ideaya Biosciences Inc. and Pfizer Inc. have formed a clinical trial collaboration and supply agreement.

The collaboration includes an Ideaya-sponsored clinical combination study of IDE196, a protein kinase C inhibitor—and binimetinib, a MEK inhibitor that Pfizer has exclusive rights to in the U.S. and Canada, in GNAQ or GNA11 hotspot mutated solid tumors, including metastatic uveal melanoma, cutaneous melanoma, and colorectal cancer.

Ideaya and Pfizer will form a joint development committee, and there will be joint decision making and data sharing of the clinical trial results between the parties. Ideaya will sponsor the study, and Pfizer will supply binimetinib for the study. The clinical combination trial is targeted to initiate in mid-2020.

The clinical combination study will evaluate whether inhibition of the MAP-kinase pathway at two nodes, through upstream PKC and downstream MEK, will enhance the response rate and depth and durability of clinical benefit in patients whose solid tumors harbor GNAQ or GNA11 hotspot mutations. The clinical trial will also study pharmacokinetics of each agent and tolerability of the combination.