

IN PURSUIT OF *YOUR CURE.*[™]

COVID-19 and Cancer Care

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A Cancer Center Designated by the
National Cancer Institute

Objectives

- Overview of COVID-19 and current statistics
- Understand impact on cancer care
- Discuss future implications and considerations

About Coronaviruses

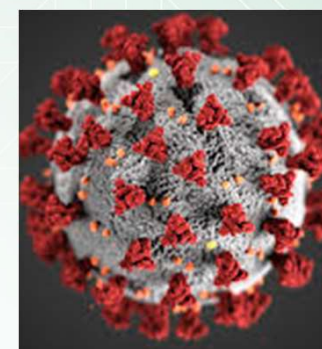
- First identified in 1966 by Tyrell and Bynoe
- Coronaviruses (CoVs) are positive single stranded RNA viruses that can infect both human and animals.
- Spherical morphology with core shell and glycoprotein projections from their envelope, appear “crown-like”
- Some CoVs can be self-limiting while others can result in increased mortality.
 - SARS-CoV-2 (COVID-19)
 - SARS-CoV
 - MERS-CoV

5 June 1965

BRITISH
MEDICAL JOURNAL 1467

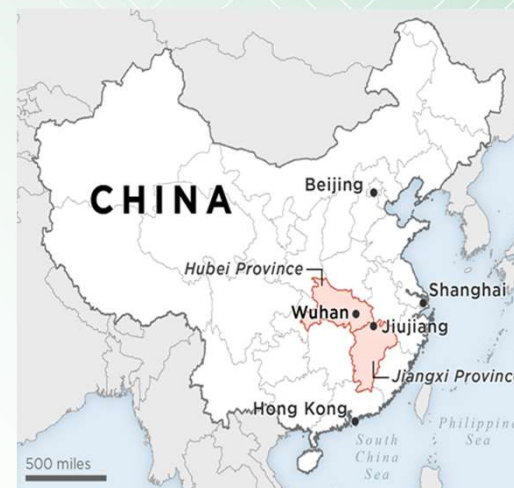
Cultivation of a Novel Type of Common-cold Virus in Organ Cultures

D. A. J. TYRRELL,* M.D., F.R.C.P.; M. L. BYNOE,* M.B., D.T.M.&H., D.OBST.R.C.O.G.



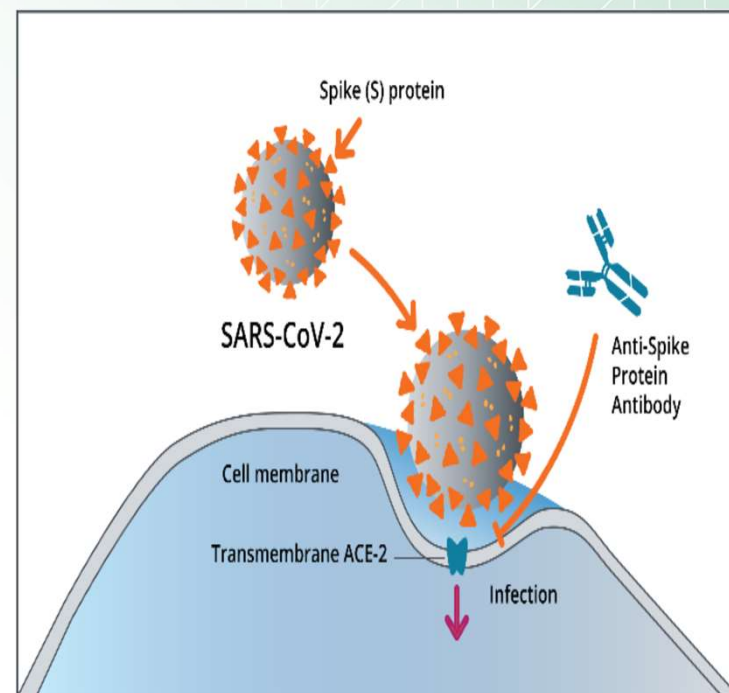
About COVID-19

- First reported in Wuhan, China in December 2019
- Proposed bats were the reservoir for coronavirus
- The severity of the disease can range from asymptomatic disease to acute respiratory distress syndrome (ARDS)
- No potential cure has been reported
- Variety of clinical trials: treatment options and vaccines
- Remdesivir and bamlanivimab only FDA approved treatments for COVID-19.
- Dexamethasone and convalescent plasma



About COVID-19

- Angiotensin converting enzyme (ACE) common binding site: 2002-2003 SARS epidemic and SARS-CoV2.
- Interaction with renin angiotensin-aldosterone system (RAAS) through ACE2 is a key factor for infectivity.
- ACE2 expressed in broadly in numerous tissues
 - Lung alveolar epithelial cells are primary targets
 - GI Tract, Kidneys, and Blood vessels
- Variability symptoms can be attributed to either configuration or number of ACE-2 transmembrane proteins in the body.
- ACEI or ARBs?



Statistics

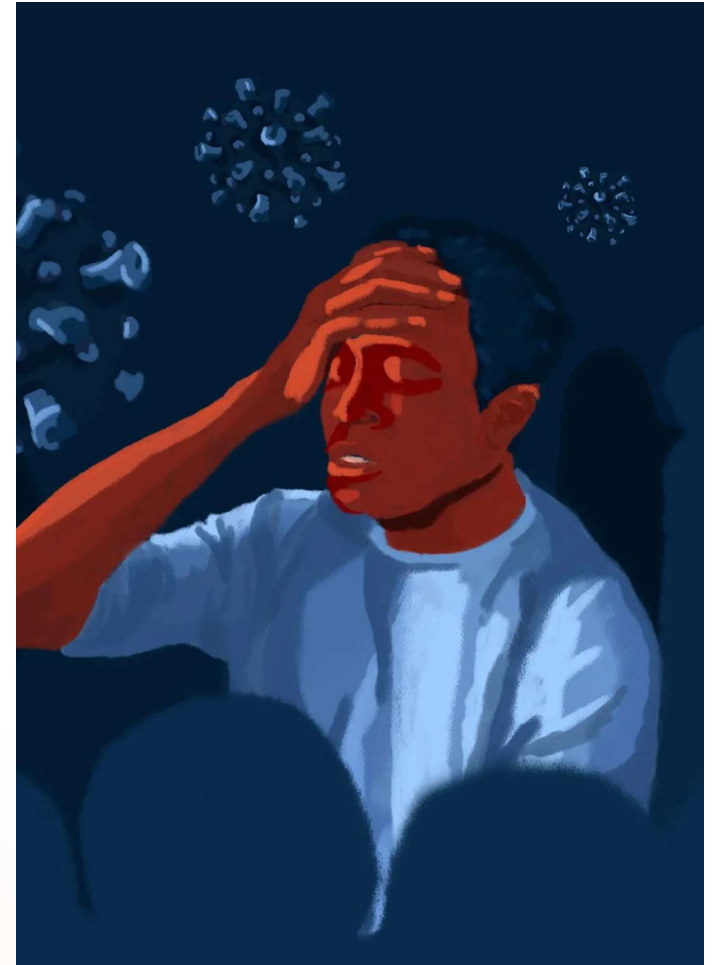


- Cases being tracked since January 21, 2020
 - Total cases: 10,846.373
 - Deaths: 244,810
 - 3,278 per 100,000 cases

*As of 11/15/20
- Cancer patients
 - Higher risk due to immunocompromised state
 - Data from China 3.5 times risk of requiring mechanical ventilation or ICU admission.
 - Fatality rate in cancer patients was 28.6% vs. 2.3% for all COVID-19 patients

Signs and Symptoms

- Fever
- Cough
- Dyspnea
- Headaches
- Conjunctivitis
- Fatigue
- Diarrhea
- Vomiting
- Loss of taste or smell
- Nausea or vomiting
- Nasal Congestion
- Myalgias
- Chills



*May appear 2-14 days after exposure

Risk Factors for Cancer Patients

- Age
- Male sex
- Former smoking status
- Number of comorbidities
- ECOG PS 2 or higher
- Active cancer with progressive disease
- High amount of contact with healthcare providers
- Lymphopenia (poor prognostic factor)
- Increase mortality with azithromycin and hydroxychloroquine

Clinical impact of COVID-19 on patients with cancer (CCC19): a cohort study

Nicole M Kuderer*, Toni K Choueiri*, Dimpay P Shah*, Yu Shyr*, Samuel M Rubinstein, Donna R Rivera, Sanjay Shete, Chih-Yuan Hsu, Aakash Desai, Gilberto de Lima Lopes Jr, Petros Grivas, Corrie A Painter, Solange Peters, Michael A Thompson, Ziad Bakouny, Gerald Batist, Tania Bekari-Saab, Mehmet A Bilen, Nathaniel Bouganim, Mateo Bover Larroya, Daniel Castellano, Salvatore A Del Prete, Deborah B Doroshov, Pamela C Egan, Arielle Elkrief, Dimitrios Farmakiotis, Daniel Flora, Matthew D Galsky, Michael J Glover, Elizabeth A Griffiths, Anthony P Gulati, Shilpa Gupta, Navid Hafez, Thorvardur R Halfdanarson, Jessica E Hawley, Emily Hsu, Anup Kasi, Ali R Khaki, Christopher A Lemmon, Colleen Lewis, Barbara Logan, Tyler Masters, Rana R McKay, Ruben A Mesa, Alicia K Morgans, Mary F Mulcahy, Orestis A Panagiotou, Prakash Peddi, Nathan A Pennell, Kerry Reynolds, Lane R Rosen, Rachel Rosovsky, Mary Salazar, Andrew Schmidt, Sumit A Shah, Justin A Shaya, John Steinharter, Keith E Stockerl-Goldstein, Suki Subbiah, Donald C Vinh, Firas H Wehbe, Lisa B Weissmann, Julie Tsu-Yu Wu, Elizabeth Wulff-Burchfield, Zhuoer Xie, Albert Yeh, Peter P Yu, Alice Y Zhou, Leyre Zubiri, Sanjay Mishra, Gary H Lyman*, Brian I Rini*, Jeremy L Warner*, on behalf of the COVID-19 and Cancer Consortium

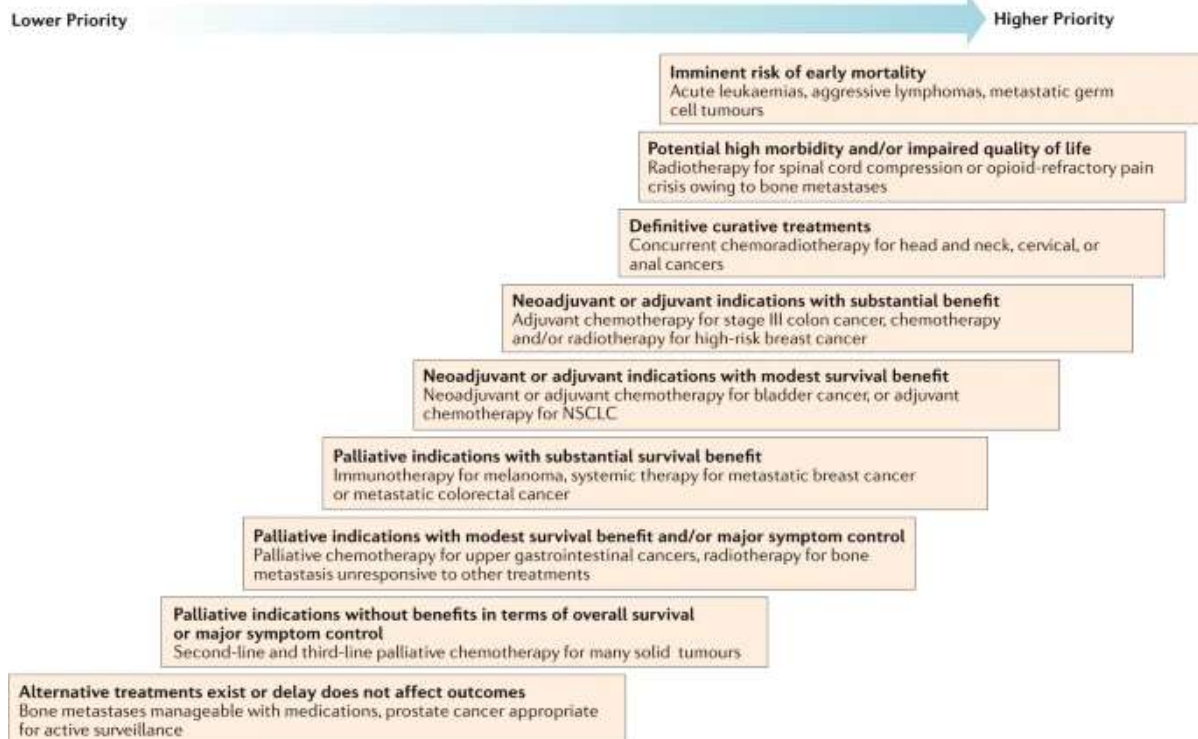
How do we weigh benefit vs. risk?

Patient Testing Guidelines

- Resources
 - National Comprehensive Cancer Network (NCCN)
 - American Society of Clinical Oncology (ASCO)
 - European Society of Medical Oncology (ESMO)
 - American Society for Radiation Oncology (ASTRO)
- Prioritize
 - Low->Medium->High



Patient Testing Guidelines



University of Miami Experience

Special Article

A How-to Guide to Building a Robust SARS-CoV-2 Testing Program at a University-Based Health System

Stephen D. Nimer, MD^{1,2}, Jennifer Chapman, MD^{2,3}, Lisa Reidy, PhD³, Alvaro Alencar, MD^{1,2}, YanYun Wu, MD, PhD^{2,3}, Sion Williams, PhD^{2,4}, Lazara Pagan, MSN², Lauren Gjolaj, MBA², Jessica MacIntyre, MSN², Melissa Triana, MBA², Barbara Vance, PhD², David Andrews, MD³, Yao-Shan Fan, MD, PhD³, Yi Zhou, MD, PhD^{2,3}, Octavio Martinez, MD³, Monica Garcia-Buitrago, MD^{2,3}, Carolyn Cray, PhD³, Mustafa Tekin, MD⁵, Jacob L. McCauley, PhD⁵, Philip Ruiz, MD, PhD⁶, Paola Pagan, MBA³, Walter Lamar, PhD², Maritza Alencar, DNP², Daniel Bilbao, PhD², Silvia Prieto, MBA³, Maritza Polania, MBA³, Maritza Suarez, MD¹, Melissa Lujardo, BSIE³, Gloria Campos, MSIE³, Michele Morris, MD¹, Bhavarth Shukla, MD¹, Alberto Caban-Martinez, PhD, DO^{2,7}, Erin Kobetz, PhD^{1,2,7}, Dipen J. Parekh, MD^{2,8}, and Merce Jorda, MD, PhD, MBA^{2,3}



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Patient Testing Guidelines



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OUTPATIENT AND INPATIENT CRITERIA FOR COVID-19 TESTING

Outpatient		
ONCOLOGY	<p>Head and Neck Radiation Therapy</p>	<p>Example: Any patient with head and neck CA receiving radiation therapy Test: 72 hours prior to initiation of therapy and every 2 weeks while receiving radiation therapy; <i>refer to workflow for patients who previously tested positive.</i> TAT: 72 hours Other considerations: COVID-19 screening questionnaire, delay treatment 7-14 days, if possible (<i>medical judgement will be required</i>). *Continue to monitor symptoms, self-quarantine.</p>
	<p>Elective Initiation of Radiation Oncology for Non-emergent Indications</p>	<p>Example: Any patient receiving radiation therapy Test: Perform 7 days prior to treatment initiation; <i>refer to workflow for patients who previously tested positive.</i> TAT: 7 days Other considerations: Preferably delay treatment (<i>medical judgement required</i>). If treatment initiated, daily screening questionnaire on arrival. Contact provider to assess medical necessity if positive screen. *Continue to monitor symptoms, self-quarantine.</p>
	<p>Initiation of Outpatient Treatments (Symptomatic or Asymptomatic)</p>	<p>Example: Any systemic therapy (oral or IV that is chemotherapy/biotherapy) or any Test: Perform within 7 days prior to initiation of systemic therapy (chemotherapy/biotherapy); exceptions will be made on an individual basis for patients receiving supportive therapy. <i>Refer to workflow for patients who previously tested positive.</i> TAT: 48-72 hours Other considerations: COVID-19 screening questionnaire 24-48 hours prior treatment. If suspicious for COVID-19 delay treatment for 7-14 days, if possible (<i>medical judgement will be required</i>). If symptomatic, must clarify if symptoms not r/t COVID-19. *Mildly symptomatic cases will be scheduled at the end of the day. Severely symptomatic cases should be referred to the ED. **No need to retest if underwent testing within the 7 days (internally/externally) or if transitioning from</p>
	<p>Patients on Active Treatment w/Symptoms or Close Exposure</p>	<p>Example: Any patient on active treatment with symptoms or close exposure. Test: Hold therapy and arrange testing if with active symptoms. If close exposure, ok not to hold therapy if no symptoms. *Close exposure is considered household. Refer to workflow for patients who previously tested positive. If > 3months since last treatment, patient needs new test prior to treatment. TAT: 48-96 hours (as testing capacity allows) Other considerations: COVID-19 screening questionnaire 24-48 hours prior treatment. If suspicious for COVID-19 delay treatment if possible (<i>medical judgement will be required</i>). *Mildly symptomatic cases will be scheduled at the end of the day. Severely symptomatic cases should be referred to the ED.</p>

How has COVID-19 changed cancer care?

ASCO Statement



Cancer Screening: Can/should members of the community continue recommended cancer screening activities (e.g. screening mammography)?

To conserve health system resources and reduce patient contact with health care facilities, ASCO recommends that cancer screening procedures that require clinic/center visits such as screening mammograms and colonoscopy be postponed for the time being. Clinical care teams are advised to carefully weigh the risks and benefits of pursuing elective procedures, such as screening procedures, at this time.

Implications for cancer care



- **Screenings**
 - American Association of Cancer Research (AACR)
 - EMR records from 29 states, screening for breast, colon, and cervical decreased by 85%.
 - Delays in cancer screening will lead to an additional 10,000 deaths from breast and colorectal cancer over the next decade.
 - Maybe more due to other cancers not being considered.
 - Disparities maybe exacerbated with COVID-19
- **Delays in Treatment**
 - 79% of patients actively undergoing treatment had to delay some aspect of their care due to COVID-19.
- **Clinical Trial Enrollment**
 - 30% lower due to COVID-19.

Decrease in new cancer diagnoses

Figure. Newly Identified Cancers, Baseline Mean and Weekly During the Coronavirus Disease 2019 Pandemic

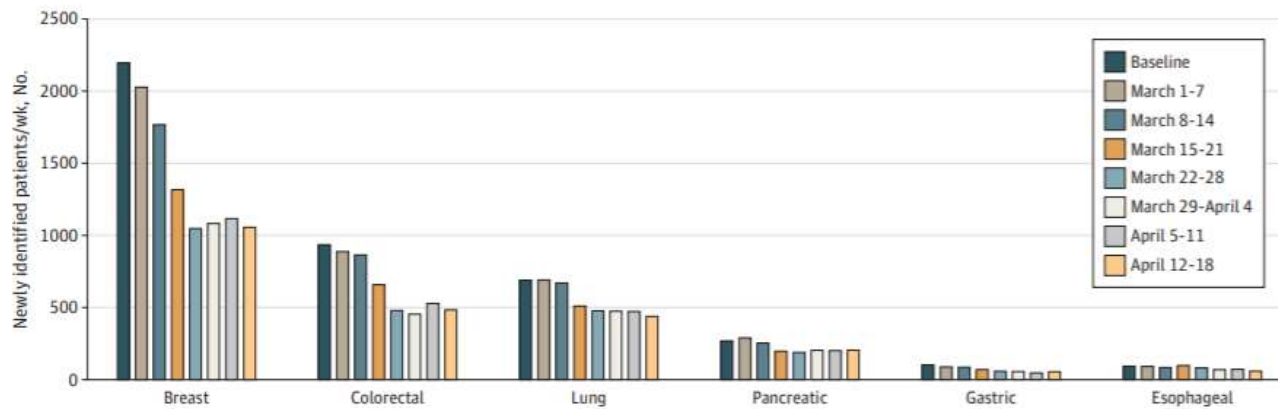


Table. Demographic Information for Patients With Newly Identified Cancer

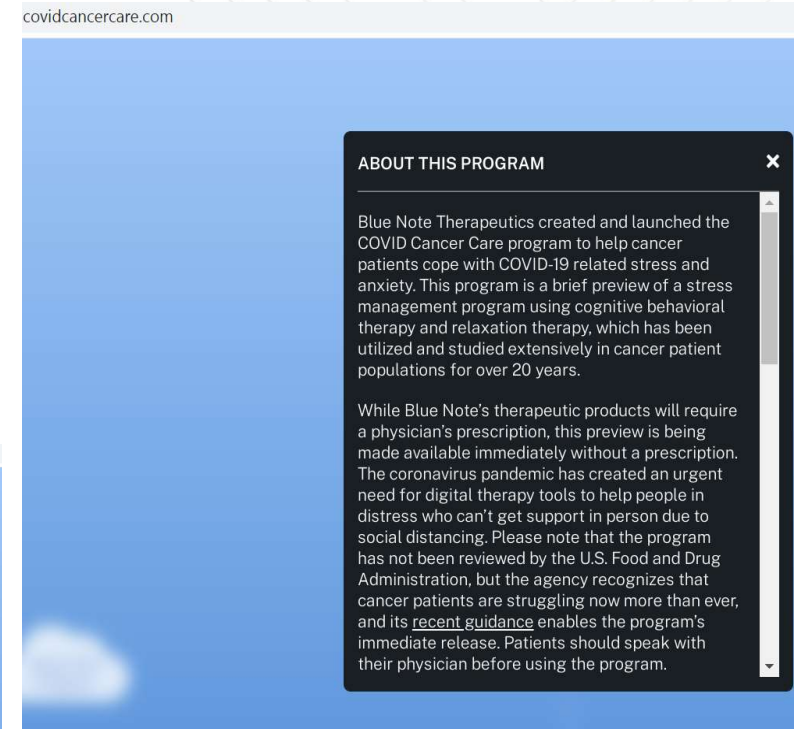
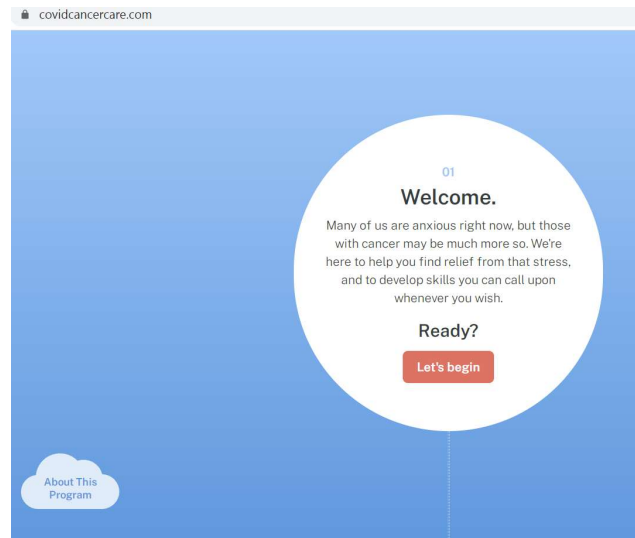
Cancer type	January 6, 2019, to February 29, 2020			March 1 to April 18, 2020		
	Patients, No.	Women, No. (%)	Age, mean (SD), y	Patients, No.	Women, No. (%)	Age, mean (SD), y
Breast	132 513	132 513 (100)	64.3 (12.7)	9475	9475 (100)	63.0 (13.0)
Colorectal	56 744	28 056 (49.6)	66.7 (13.4)	4377	2109 (48.2)	65.4 (13.3)
Lung	41 671	22 332 (53.7)	70.1 (10.6)	3753	1960 (52.3)	69.3 (11.0)
Pancreatic	16 268	8083 (49.8)	67.6 (12.7)	1547	820 (53.0)	66.8 (12.8)
Gastric	5744	2454 (42.8)	67.4 (13.5)	471	180 (38.2)	66.7 (13.8)
Esophageal	5658	1354 (24.0)	68.4 (11.4)	557	142 (25.5)	69.5 (11.0)

Kaufman, H., Chen, Z., & Fesko, Y. (2020). Changes in the Number of US Patient with Newly Identified Cancer Before and During the Coronavirus Disease 2019 (COVID-19) Pandemic, *JAMA Network Open*, 3(8).

Implications for cancer care

■ Mental Health

- Provide mental health support
- Address physical and psychosocial needs
- High distress
- Mobile apps



How can we improve cancer care during COVID-19?

- **Messaging**
 - Collaborate with Marketing/Communications through multiple media channels to be able to reach patients
 - Host virtual forums/webinars as outreach opportunities to provide education
 - Debunk myths, bias, and misinformation
- **Follow-up**
 - Continue to utilize telemedicine as a platform to see patients actively in treatment and for discussions surrounding clinical trials.
 - Assign resources to contact patients for their yearly screenings
- **Safety**
 - Assure that cancer screenings are continued to be offered in a safe and effective way.
 - Plan ahead and prevents backlog in the log run.

UHealth Home / Patient & Visitors / We're Ready to Care for You

We're Ready to Care for You

How can we improve cancer care during COVID-19?

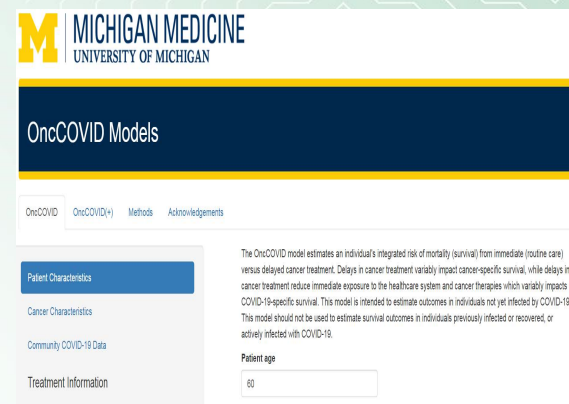
- **Access to care**
 - Improve ability to access care electronically
 - Self-scheduling for cancer care
- **Provide Resources**
 - Local and national advocacy groups
 - Convert cancer support services via video conferencing
 - Apply for grants that support patient financial barriers

Tips to navigating COVID-19 and cancer care

- Strict visitor policy
- Use of oral treatment when appropriate
- Consider treatment breaks
- Home lab draws
- Drive thru pick ups for medications or delivery service
- Consider neoadjuvant therapy instead of surgery when applicable
- Risk-benefit analysis for HSCT patients
- Evaluate clinical trial enrollments on case by case basis

Conclusions

- The emergence of COVID-19 is changing the survival outcomes in cancer
- Delays in screening, diagnosis, and treatment are reported
- Late disease presentation and poorer clinical outcomes are of concern.
- Leveraging Information Technology (IT) and Communications teams to reach patients.
- Utilize creative ways to continue outreach initiatives to reduce health disparities.
- Vaccine effectiveness may be lower in cancer patients, much lower for those with hematologic malignancies.
- Convalescent plasma is an option not to be forgotten.



<https://sph.umich.edu/news/2020posts/app-calculates-risk-of-delaying-cancer-care-during-pandemic.html>

Conclusions

- Patient education is important

A version of chloroquine (chloroquine phosphate) is used as an additive to clean fish aquariums. Consuming this fish tank additive has led to at least 1 death and other overdoses. Do not consume this product—it can kill you.

Drinking bleach or injecting bleach or other household disinfectants is very dangerous and can kill you. Another proposed treatment to avoid is oleandrin, an extract that comes from a toxic shrub. Ingesting even a small amount of the plant can kill you. These are not treatments for COVID-19, and they will not help prevent it.

Cancer.Net[™]

Doctor-Approved Patient Information from **ASCO**[®]

Thank You



A Cancer Center Designated by the
National Cancer Institute