

JULY 2020

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

INTERNATIONAL

Virtual ENDOCRINOLOGY

The Rise of Telehealth During COVID-19

Social distancing has dramatically impacted how physicians can treat—or even see—their patients. Thankfully, technology has come to the rescue.

Endocrine News explores how telemedicine has safely brought doctors and patients face to face during this pandemic and how it may have changed the future of healthcare forever.

DRONING ON:

Insulin delivery from above!

TWEETING DURING COVID-19:

Using social media while social distancing.

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Hormone Science to Health

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How clinicians treat patients has been drastically reimagined during the COVID-19 pandemic due to social distancing requirements. Since patients still need to see their doctors one way or another, telemedicine has filled the gap and has been embraced by both the healthcare community and patients alike.

BY DEREK BAGLEY

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Carol Lange, PhD, has been an active member of the Endocrine Society since she attended her very first **ENDO** in 1996 where she "found her people." Over 25 years later, she has taken the reigns of the Society's *Endocrinology* journal this month and tells *Endocrine News* about her remarkable journey, her advice to new members, and what she

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Hailing the Endocrine Society's Hormone Health Network

Despite the current climate and health challenges around the world, I remain amazed at our members' herculean resilience, unwavering contributions to society, and commitment to advancing, uniting, and growing the endocrine community. A sincere thanks to each of you, our most valued members.



The Hormone Health Network (HHN), our public education arm, has continued to embody these principles by creating timely, accurate, relevant information that has helped millions of patients and providers worldwide.

Supporting Patients in a Pandemic

As the compounding effects of COVID-19 impacted communities around the globe, HHN immediately recognized the need to lead the way during the health crisis by pulling together our collective knowledge to help fill gaps for patients. Along with curating resources to support members, the HHN committee leaders swiftly created educational resources to bring "factual" information about the pandemic to the forefront. Additionally, important upgrades were made to the flagship tool "Find an Endocrinologist" directory, including options for members to indicate telehealth availability within their practice and the point-of-care language preferences.

Hormone.org Leading the Digital Way

For more than two decades, **hormone.org** has provided science-based, member authored, reliable patient

information. In June 2019, this site went through a massive overhaul. Beyond a refreshed look and enhanced layout, its improved search engine optimization included a mobile-friendly interface and augmented the experience for global members. Meaningful results were immediately observed — mobile users increased 27%, traffic from organic search increased 21%, global traffic increased 12%, and had an overall average of six million unique visitors annually.

Last month, **hormone.org** received the bronze recognition award from the Digital Health Awards for its engaging design, depth of content, and great translation services.

“

I remain amazed at our members' herculean resilience, unwavering contributions to society, and commitment to advancing, uniting, and growing the endocrine community.

”

The Digital Health Awards is a program organized by the Health Information Resource Center, a clearinghouse for professionals who work in consumer health fields. The goal of the Digital Health Awards is to recognize high-quality digital health resources for consumers and health professionals.

Kudos to the leadership of Caroline Davidge-Pitts, MD – Mayo Clinic, chair of the HHN committee, our HHN committee volunteers, and Endocrine Society staff that continue to make **hormone.org** the premiere public education portal for endocrine-related diseases and conditions!

Patient Engagement Advocacy Activities

The Society has also been engaging patients in several advocacy activities in recent years.

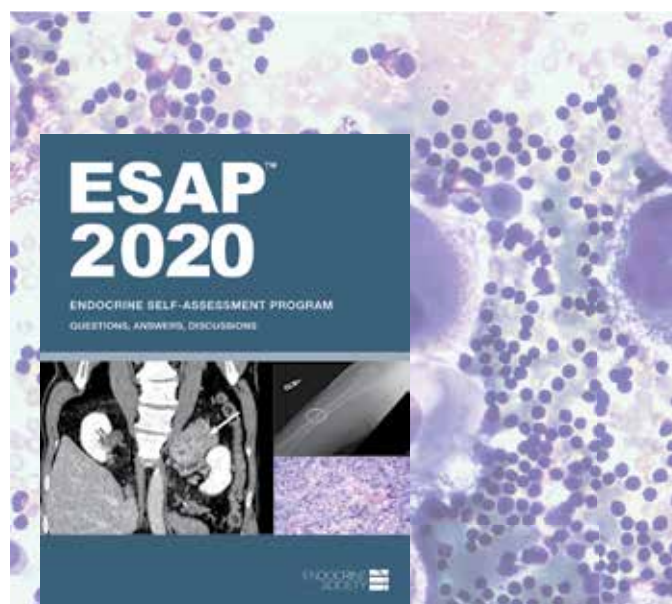
We have hosted a joint Hill Day and congressional briefing with the Diabetes Patient Advocacy Coalition (DPAC), with each group including patients, physicians, and scientists. We participate annually in the Rally for Medical Research (organized by the American Association for Cancer Research) that pairs Endocrine Society members with patients for congressional visits. We have collaborated with JDRE, ADA, and other diabetes patient advocacy groups on various legislative and regulatory efforts.

HHN offers opportunities for patients to engage in advocacy campaigns through a number of modalities. We invite you and them to join us at: www.endocrine.org/advocacy/take-action!

#InThisTogether

If you have any questions or comments, please contact me at president@endocrine.org.

Gary D. Hammer, MD, PhD
President, Endocrine Society



"This was a great review in endocrinology; it was comprehensive and will help me in my practice"
– Beth Cohen, MD

"Overall, nice diversity of endocrinology topics with isolation of some problem issues in managing patients and their diseases"
– Lori Roust, MD

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FROM THE **EDITOR**

In Living Color: The Rise of Telehealth

As we arrive smack dab in the middle of the summer of 2020, one thing has seemingly remained constant regarding the slew of *Endocrine News* cover stories: COVID-19.

Beginning in April, we began ongoing coverage of how the pandemic has affected the science and practice of endocrinology. Since then, the Endocrine Society journals have been turning out several articles featuring research related to this new health threat. Likewise, we have incorporated much of that late-breaking content into our coverage as well. This has made for some very timely, information-packed issues that also highlighted the work being done by endocrinologists around the world, not to mention the sacrifices so many of our members have made in the last few months.

One of the most interesting constants that has popped up in so much of our coverage has been the ubiquitous use of telemedicine or telehealth. Whether it's been endocrine researchers communicating with their lab staff via Zoom meetings or clinicians seeing their patients from the comforts of their own living rooms, it's clear that the forced use of telemedicine has made life easier for millions.

This month's cover story, "Virtual Endocrinology: The Rise of Telemedicine During COVID-19" (p. 34), by senior editor Derek Bagley discusses telemedicine in some detail based not only on a webinar that the Endocrine Society hosted in May (and available online at: www.endocrine.org/telehealth_webinar) but also on a session from the record-breaking **ENDO Online 2020** last month entitled "Telemedicine in the Age of COVID-19." This session was developed in collaboration with the European Society of Endocrinology and was chaired by Endocrine Society president Gary D. Hammer, MD, and Martin Reincke, MD. Among the topics covered were rare endocrine conditions, virtual tumor boards, and e-consult lab measurements.

In the article, Carrie M. Burns, MD, associate professor of Clinical Medicine in the Division of Endocrinology, Diabetes, and Metabolism at the University of Pennsylvania, says she feels fortunate that she has been able to safely care for her patients despite the restrictions the pandemic

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Endocrine News informs and engages the global endocrine community by delivering timely, accurate, and trusted content covering the practice, research, and profession of endocrinology.



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has put in place. “My patients have been grateful as well and have thanked me that we have been able to stay on top of care during such difficult times,” she says. “It has been a good opportunity to check on them and discuss various matters on how they have been surviving during the pandemic: ideas on how to exercise effectively, check on their mood, safe ways to obtain groceries, etc.”

As the pandemic continues, social media has also stepped up to the plate as a useful tool for scientists and clinicians alike. One of the Endocrine Society’s most prolific users of this medium is Joy W. Yu, MD, PhD, an associate professor of medicine at Stanford University School of Medicine, who has written a detailed article on how she has used Twitter during the pandemic. In “Filling the Void: Twitter and the Endocrinologist’s Response to COVID-19” on page 52, Wu gives detailed examples of how she and many of her colleagues have stayed in touch throughout the pandemic, as well as how useful this tool has been in disseminating information.

“The global pandemic has been a time of heightened stress for everyone,” Wu writes. “Concerns abound relating to safety, health, financial, and professional impacts. In many parts of the world previously inconceivable measures such as widespread lockdowns and closures of schools and businesses left many feeling dislocated and anxious. In these times, Twitter has also played a role in providing support and camaraderie.” If you have the opportunity, check out the online version of her article at: www.endocrine.org/twitter_wu. There are dozens of links that illustrate her talking points throughout.

As the pandemic continues, so does new cutting-edge research. We report on some of these new studies as well in: “Can Female Sex Hormones Help in COVID-19 Treatment?” (p. 46), and in “Glycemic Management in Hospitalized COVID-19 Patients” (p. 42), Eric Seaborg details some of the latest studies looking at treating these patients.

It’s difficult to predict what we’ll cover in *Endocrine News* from month to month since we are all living in unprecedented times but keep in mind, we are all in this new world together. If you have any ideas for stories, feel free to contact me at: mnewman@endocrine.org. 

— Mark A. Newman, Editor, *Endocrine News*

New England Journal of Medicine Retracts COVID-19 Study

The *New England Journal of Medicine* has retracted one of the studies cited in the June *Endocrine News* article, “Expert Opinion: COVID-19 & RAS Blockers.”


The *Endocrine News* article described this retracted article as “a database study of 8,910 COVID-19 patients hospitalized in 11 countries on three continents. That study found that neither ACE inhibitors nor ARBs were associated with an increased risk of in-hospital death.”

The retraction of this one article does not materially affect the *Endocrine News* article’s conclusion citing an expert consensus that patients on blood pressure medications that block the renin-angiotensin system should continue taking these drugs during the COVID-19 pandemic unless otherwise instructed by a physician.

The study’s authors wrote that the retraction was necessary “because all the authors were not granted access to the raw data and the raw data could not be made available to a third-party auditor, we are unable to validate the primary data sources underlying our article.”

The *Lancet* also retracted a paper from the same lead author, Mandeep R. Mehra, MD. The *Lancet* paper received a great deal of attention because it found no benefit in the use of hydroxychloroquine or chloroquine to treat COVID-19.

In both cases, the problems related to the use of a database provided by Surgisphere Corp. Surgisphere declined to release the full data set to independent peer reviewers because a transfer “would violate client agreements and confidentiality requirement,” according to the retraction statement in the *Lancet*.

“I did not do enough to ensure that the data source was appropriate for this use,” Mehra said in a statement apologizing for the “disruptions” the papers caused. 

— Eric Seaborg

Endocrine Society Holds Anti-Racism Vigil During ENDO Online 2020

On Tuesday June 16 at 10 a.m., the Endocrine Society held an Anti-Racism Vigil as part of its ongoing virtual annual meeting, **ENDO Online 2020**.

The Society believes that Black Lives Matter and so shared comments from current president, Gary Hammer, MD, PhD; president-elect, Carol Wysham, MD; and immediate past president, E. Dale Abel, MD, PhD; as well as a moment of silence that lasted eight minutes and 46 seconds, the amount of time George Floyd endured the knee on his neck that so horrifically took his life.

Hammer pointed out that while the recent worldwide anger and protests may have started with the killing of George Floyd, the roots of this problem go back centuries. “And while much of the focus right now has been on interactions with law enforcement, we as doctors and scientists are well aware that many of these destructive forces are very much present, in education, in academia, in research, and in our healthcare systems,” he said.

The Endocrine Society has long been a champion of diversity and inclusion — this year the Society celebrates 25 years of the formation of the Minority Affairs Committee, now known as the Committee on Diversity and Inclusion, or CoDI. One of CoDI’s priority initiatives, the Future Leaders Advancing Research in Endocrinology (FLARE) program, has for the past eight years advanced the careers of underrepresented graduate students, postdoctoral fellows, and early-career faculty involved in endocrine-related research, Wysham said. “The training and mentorship of more than 150 FLARE fellows has developed a generation of young leaders in our profession,” she said. And while the Society has actively sought to promote diversity and include minorities in its core programs and strived to combat things like unconscious bias, Wysham said there is still much work ahead. “Particularly in times like these, we acknowledge a greater urgency to get more done,” she said.

Before the moment of silence, Abel laid bare the ugly truth that some may still struggle to face — that even in 2020 there are those who face violence, abuse, neglect, and even mortality, simply because of the color of their skin, and the medical

and scientific communities certainly aren’t immune. “Many of our colleagues are now hurting,” Abel said. “For many, it was a shocking wake-up call, and for others of us, it was a stark reminder that racial discrimination for some can be a matter of life and death.”

Abel called on all who participated in the vigil to use the moment of silence to reflect and commit to working to ensure a more just, fair, and equitable society. For eight minutes and 46 seconds, the screen showed the unfortunately long list of names — black men and women killed because of what they looked like, from Eric Garner, strangled to death by a police officer for allegedly selling loose cigarettes, to Ahmaud Arbery, shot to death by two white men for jogging through their neighborhood, to Breonna Taylor, the EMT shot to death when police officers served a no-knock warrant and raided her apartment, to George Floyd, who endured a police officer’s knee on his neck for eight minutes and 46 seconds and died, because he allegedly used a fake 20-dollar bill in a store.

Toward the end of the vigil, Society leadership announced a new online community of diversity, equity, and inclusion — an exclusive benefit that provides our members a chance to be heard and share their experiences. Go to **community.endocrine.org** to learn more and join the conversation.

“The Endocrine Society will continue to welcome and support scientists and clinicians from all backgrounds,” Hammer said, “because science, like disease, has no borders.”

– Derek Bagley



New Report on Estradiol Ranges in Postmenopausal Women Released

Updated recommendations to establish normal estradiol reference ranges have been released in a new report from the North American Menopause Society (NAMS).

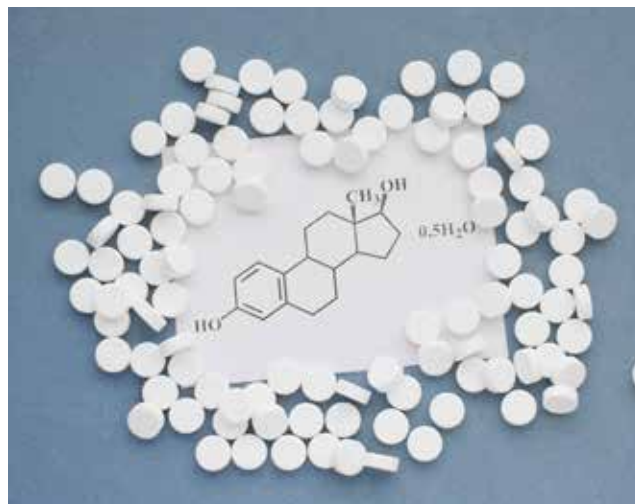
The report is based on a symposium called “Workshop on Normal Reference Ranges for Estradiol in Postmenopausal Women,” that was held in September 2019, in Chicago, Ill., and featured 28 presentations. The Endocrine Society and the Partnership for the Accurate Testing of Hormones (PATH) were supporters of this symposium.

PATH was established in 2010 to help the clinical, medical, and public health communities improve patient care through more accurate and reliable hormone tests. Improved patient care through the universal use of accurate and reliable hormone tests in healthcare and research is PATH’s chief goal, which is why it was one of the participants in this workshop.

The overarching goal of the symposium was to review existing analytical methodologies for measuring estradiol in postmenopausal women and to assess existing data and study cohorts of postmenopausal women for their suitability to establish normal postmenopause reference ranges.

The anticipated outcome of the workshop was to develop recommendations for establishing normal reference ranges generated with a standardized and certified assay that could be adopted by clinical and research communities.

Aside from the Endocrine Society and PATH, the other organizations that lent support for the symposium include: NAMS, the American Society for Reproductive Medicine, the Centers for Disease Control and Prevention, the International



Society for the Study of Women’s Sexual Health, the University of Virginia, Division of Endocrinology and Metabolism, and the International Menopause Society.

Funding companies for the workshop included: Abbott Laboratories, Ansh Labs, ARUP Labs, Endoceutics, Novo Nordisk, Quest Diagnostics, and TherapeuticsMD.

The report from the workshop is published in the June 2020 issue of *Menopause*. More information about accurate hormone assays and PATH is available at www.hormoneassays.org.

Robert W. Lash, MD, Named Interim CEO of the Endocrine Society



The Endocrine Society has named Robert W. Lash, MD — an endocrinologist with more than 25 years of experience in the field — as its interim CEO.

Lash joined the Society as its chief professional & clinical affairs officer in 2017.

“Rob brings a rare depth and breadth of knowledge and experience in endocrinology to the role” says Society President Gary D. Hammer, MD, PhD. “His leadership will keep steady our standing as the world’s largest professional endocrine organization, accelerating scientific research and advances in clinical care.”

As a subject matter expert, Lash represents the Society in outreach to scientific and medical societies, policy makers, and journalists.

The announcement comes a week before the opening of the Society’s largest-ever meeting, **ENDO Online 2020**. More than 26,000 people worldwide have registered to attend the virtual event, which was held June 8-22.

“I am honored to be asked to lead the Society during this time of great challenge and opportunity,” Lash says. “Our Society leaders and staff are proud to be a unifying force supporting our professional community as we navigate these circumstances together.”

Lash spent 20 years at the University of Michigan in Ann Arbor, Mich., where he was a professor of internal medicine at the University’s Medical School and chief of staff for clinical affairs at Michigan Medicine, the university’s healthcare system.

Earlier in his career, he was assistant professor of internal medicine at the University of Maryland School of Medicine in Baltimore, Md. He did his endocrine fellowship at the National Institutes of Health’s National Institute of Diabetes and Digestive and Kidney Diseases. As an active Society volunteer, Lash chaired the Clinical Affairs Core Committee.

Lash graduated with his Doctor of Medicine degree from Albert Einstein College of Medicine in New York, N.Y. He earned his Bachelor of Arts degree from Dartmouth College in Hanover, N.H.

The Society has appointed a search committee to select the organization’s next CEO.

Hormone Health Network Recognized for Digital Health Education


The Hormone Health Network (HHN), the Endocrine Society's patient and public outreach arm, was recognized for its digital health education programming with the Bronze Award for Digital Health Education.



The Digital Health Awards is organized by the Health Information Resource Center (HIRC), a clearinghouse for professionals who work in consumer health fields. The goal of the Digital Health Awards is to recognize high-quality digital health resources for consumers and health professionals.

"I am so proud of our staff at the Endocrine Society and the clinical and scientific expertise of our members who have made the hormone.org site a success!" says Caroline Davidge-Pitts, MD, committee chair. "**Hormone.org** is the leading source of endocrine-related health information, and supports patients and providers alike, by providing a wealth of point of care resources. I am so delighted to lead and work with such an amazing group of professionals!"

HHN has been educating patients and the public for over two decades and relaunched its website, **www.hormone.org**, in June 2019 where it achieved both quantitative and qualitative success, garnering over six million annual visitors. The upgrades included an improved mobile experience, search engine performance for global users, and unique hormone-related educational content such as rare endocrine conditions, transgender health, thyroid health, and diabetes.

To learn more about the Network visit **hormone.org**, follow on social media @HormoneHealthN, or subscribe to its monthly newsletter. 

Endocrine Society Issues Statement on Dexamethasone & COVID-19

On June 17, the Endocrine Society issued a statement on the efficacy of using dexamethasone in COVID-19 patients.

Here is the statement in full:

A new clinical trial out of the University of Oxford, United Kingdom, reports that dexamethasone reduced deaths in patients with severe COVID-19.

It is imperative that our patients and the public understand that use of dexamethasone for COVID-19 patients is for those who are hospitalized with acute respiratory distress and on respiratory support. The drug did not help moderately ill patients who were not receiving oxygen and does not prevent symptoms of

the virus. It may reduce the amount of time patients are on ventilators and may reduce deaths. Data and the study have not been peer-reviewed or published at this time.

Dexamethasone has been around for more than 50 years; it is inexpensive and commonly available. It is widely used to treat diseases like lupus, arthritis, allergies, and cancer. Though it may cause side effects, it is generally safe. The hope is that the drug's ability to reduce inflammation could be a treatment to reduce mortality in severely ill patients with COVID-19, but it is critical that we not rush to judgement and review the complete study.

Additional information about COVID-19 can be found at: **www.endocrine.org/covid19**.



BY DEREK BAGLEY
Senior Editor



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These
healthcare
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contact.
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Hospitalized COVID-19 Patients with Diabetes Represent More Than 20% of ICU Population

The COVID-19 pandemic presents new challenges for clinicians caring for infected patients with diabetes, according to new guidance published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Mary T. Korytkowski, MD, of the University of Pittsburgh School of Medicine, in Pittsburgh, Pa., point out that patients with diabetes comprise 25% to 34% of the patient population receiving care in intensive care unit (ICU) and non-ICU settings. The authors go on to note that hospitalized patients with COVID-19 and diabetes need to receive glucose-lowering therapy in addition to other complex medical management as a way of minimizing risk for complications and death. However, appropriate glycemic management — including bedside glucose monitoring and insulin administration — requires intensive patient interactions and puts clinicians at risk.

“This manuscript provides guidance for healthcare providers caring for patients hospitalized for COVID-19 who also have a prior history of diabetes or who have high blood sugar levels at the time of hospitalization,” Korytkowski says. “These

healthcare providers are at risk for contracting COVID-19, and while glycemic management in the hospital improves patient outcomes, it also intensifies the amount of time with direct patient contact.”

The paper also weaves in a patient case of critical COVID-19 pneumonia in diabetes: A 60-year-old male with an eight-year history of type 2 diabetes, hypertension, hypercholesterolemia, and obesity presented to the ER with coronavirus symptoms. The authors detail his care, including insulin administration and enteral nutrition until the patient was eventually discharged.

The authors recommend that clinicians limit their risk of exposure by minimizing the use of IV insulin infusions and using remote glucose-monitoring devices and non-insulin therapies when possible. Diabetes self-management by selected patients who are knowledgeable and capable of this in the hospital also can be considered as a way of limiting direct patient interactions.

Findings: “Clinicians should be aware that some medications used in treating COVID-19 patients, including glucocorticoids and hydroxychloroquine, can affect blood glucose levels. All patients discharged home with insulin or an insulin secretagogue need to know the symptoms and treatment of hypoglycemia events,” the authors write. “For patients receiving basal bolus insulin therapy, a prescription for nasal or injectable glucagon provides reassurance that they will have appropriate tools in the event of a severe hypoglycemic reaction.”



Study Finds PFAS Exposure May Cause Early Menopause

Per- and polyfluoroalkyl substance (PFAS) exposure may cause menopause to occur two years earlier in women, according to a new study published in *The Journal of Clinical Endocrinology & Metabolism*.

Known as “forever chemicals,” PFAS are manmade and used in a wide variety of nonstick and waterproof products and firefighting foams. PFAS chemicals can contaminate drinking water, and it has been estimated that one out of three may consume drinking water contaminated with these chemicals.

Researchers led by Sung Kyun Park, ScD, MPH, of the University of Michigan School of Public Health in Ann Arbor, point out that although three human studies have examined the associations of natural menopause with PFOS, PFOA, perfluorononanoic acid (PFNA) and perfluorohexane sulfonic acid (PFHxS), the results have been inconsistent. The authors also note other studies have been flawed. “We, therefore, examined the associations between perfluoroalkyl substances and incidence of natural menopause in the multi-racial/ethnic sample of women who were premenopausal at baseline from a prospective cohort, i.e., the Study of Women’s Health Across the Nation (SWAN),” the authors write. “Women were followed every year from 1999 – 2010 and every other year from 2011 – 2017. We also assessed whether the relationship differed by racial/ethnic groups and evaluated the combined effects of chemical mixtures on natural menopause.”

The researchers studied 1,120 midlife women from SWAN in this 17-year-long prospective cohort study. They found that women with high PFAS levels in their blood samples reached

menopause two years earlier than those with lower levels. “Our findings suggest that exposure to select PFAS was associated with earlier natural menopause,” the authors write. “Due to PFAS’ widespread use and environmental persistence, their potential adverse effects remain a public health concern.”



“PFAS are everywhere. Once they enter the body, they don’t break down and build up over time,” says the study’s lead author Ning Ding, PhD, MPH, also of the University of Michigan School of Public Health. “Because of their persistence in humans and potentially detrimental effects on ovarian function, it is important to raise awareness of this issue and reduce exposure to these chemicals.”

“Even menopause a few years earlier than usual could have a significant impact on cardiovascular and bone health, quality of life, and overall health in general among women,” Park says.



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”**



Virtual 2020 Clinical Endocrinology Update/Endocrine Review Board

CEU 2020

Sept. 10 – 12, 2020

EBR 2020

Sept. 16 – 18, 2020

Every year, the Endocrine Society holds Clinical Endocrinology Update (CEU), which brings together hundreds of endocrine clinicians for a unique learning experience.

This year, due to concerns regarding the safety of both attendees and faculty stemming from the COVID-19 outbreak, the Endocrine Society is conducting these sessions in a virtual learning environment.

CEU 2020 offers an opportunity to stay up to date on the newest breakthroughs in clinical endocrinology. Expert faculty deliver a comprehensive three-day program covering a range of clinical practice areas using interactive, case-based learning.

Endocrine Board Review (EBR) is an essential course for endocrinologists preparing to take the boards or practicing physicians seeking an intensive knowledge assessment. The virtual program is designed as a mock exam, with rapid-fire case-based questions emulating the format and subject matter of the ABIM's Endocrinology, Diabetes, and Metabolism Certification Examination. Attendees will have early access to topical on-demand presentations with detailed answer rationale (available in late August).

www.endocrine.org/ceu2020 • www.endocrine.org/ebr2020

American Thyroid Association 2020 Webinar Summer Series

ATA invites you to participate in the American Thyroid Association 2020 Webinar Summer Series. Content from the ATA Personalized Approach to Thyroid Disorders and Controversies in Thyroidology cancelled in-person events due to COVID-19 are now available virtually. Learn from leading experts and earn CME and MOC credits all from the comfort of your home or office. Select courses will be offered live. All are available on-demand once released. Sign up now for our summer series of thyroid education.

www.thyroid.org/professionals/meetings/

American Diabetes Association's 80th Heart in Diabetes

New York, New York

August 7 – 9, 2020

This CME conference is a unique medical meeting that brings clinical leaders in diabetes and cardiovascular disease and practicing clinicians together to improve the care of patients at a high risk of cardiovascular, metabolic, and kidney diseases. This program is designed to evaluate the clinical science aspects of diabetes, obesity, and cardiovascular disease, focusing on the heart and kidney in diabetes. The goal is to develop appropriate, comprehensive clinical management plans aligning endocrinologists, cardiologists, nephrologists, and all other interested clinicians in their understandings of the impact of diabetes and CVD outcome trials on the clinical management of these very high-risk patients.

www.heartindiabetes.com

ADCES 2020 Virtual Conference

August 13 – 16, 2020

The Association of Diabetes Care & Education Specialists (ADCES) 2020 Annual Conference has gone virtual. The online conference will take place Thursday, Aug. 13 to Sunday, Aug. 16. Over four days, ADCES20 will feature innovative research and education across 52 sessions, special themed days highlighting issues impacting quality care and a virtual exhibit hall with the latest products in diabetes technology and management.

www.adcesmeeting.org/

Obesity Week 2020

Atlanta, Georgia

November 3 – 6, 2020

ObesityWeek® is home to the latest developments related to obesity from cutting-edge basic and clinical research to state-of-the-art treatment and prevention to the latest efforts in advocacy and

public policy. Present your latest work and stay up to date on the latest advances in the field by attending ObesityWeek. The overarching theme for ObesityWeek 2020 will be Pathways to Precision Obesity Care. A key component in the development of precision care for obesity is recognizing and understanding the inherent heterogeneity in both the patterns of development and expression of obesity, and ObesityWeek 2020 programming will draw particular attention to these topics.

www.obesityweek.org

Before you make any travel plans, check with the sponsoring organization to make sure the events are taking place as scheduled.



EndoBridge 2020

Antalya, Turkey

October 22 – 25, 2020

EndoBridge® is a unique initiative with the vision of bridging the world of endocrinology. EndoBridge® is co-hosted by the Endocrine Society and the European Society of Endocrinology in collaboration with the Society of Endocrinology and Metabolism of Turkey. The meetings are held in English with simultaneous translation into Russian, Arabic, and Turkish. Accredited by the European Accreditation Council for Continuing Medical Education (EACCME), this three-day scientific program includes state-of-the-art lectures delivered by world-renowned faculty and interactive sessions covering all aspects of endocrinology. EndoBridge® provides a great opportunity for physicians and scientists from around the world to interact with each other, share their experience and perspectives, and participate in discussions with global leaders of endocrinology.

www.endobridge.org

INTERNATIONAL ITINERARY

Endocrine Congress of Sri Lanka College of Endocrinologists (VIRTUA SLENDO 2020)

August 6 – 8, 2020

Virtual Event

The goal of SLENDO 2020 is to update and enhance endocrine knowledge among endocrinologists, physicians, trainees, and primary care doctors, both locally and internationally. SLENDO 2020 will feature the participation of more than 50 eminent speakers from Europe, U.S., Canada, Australia, and New Zealand along with outstanding regional endocrinologists from South Asia.

<https://slendo.lk/>

ICE 2020: 19th International Congress of Endocrinology

Buenos Aires, Argentina

October 4 – 7, 2020

19th International Congress of Endocrinology (ICE 2020), 4th Latin American Congress of Endocrinology (CONLAEN), and 13th Congress of the Argentine Federation of Endocrinology Societies (FASSEN) is organized by MCI Group – Argentina. Topics to be discussed include: big data and its impact in health, human diseases, artificial intelligence and big-data mining; thyroid cancer diagnosis and treatment; advances in pheochromocytomas and paragangliomas; the tsunami of diabetes in lower- and middle-income countries; preserving reproduction in cancer patients; and so much much more.

www.ice-2020.com

AOCE-SICEM 2020

Seoul, Korea

October 28 – 31, 2020

The 17th Asia – Oceania Congress of Endocrinology and the 8th Seoul International Congress of Endocrinology and Metabolism will take place in Seoul, Korea. AOCE – SICEM 2020 will provide a platform to network with colleagues, exchange ideas, discover novel opportunities, and increase professional knowledge. It will be held at the Swiss Grand Hotel in Seoul.

<http://sicem.kr/main.asp>

Virtual ENDOCRINOLOGY:

BY DEREK BAGLEY

The Rise of Telehealth During COVID-19



How clinicians treat patients has been drastically reimaged during the COVID-19 pandemic due to social distancing requirements. Since patients still need to see their doctors one way or another, telemedicine has filled the gap and has been embraced by both the healthcare community and patients alike.

Chirag R. Kapadia, MD, is an endocrinologist at Phoenix Children's Hospital in Arizona. He reports an encounter with a patient he sees with a history of thyroid cancer and hypothyroidism. He manages two components of her care: the post-removal of her thyroid, which was done through a combination of physical exam, lab tests, and ultrasounds; and treating her low thyroid, for which Kapadia prescribes a certain dose of levothyroxine.

That dose can change, depending on what a patient's lab tests reveal, but that change can easily confuse the patients and their families who become unsure of which bottle they're supposed to pull pills from, or which prescription they're supposed to refill. "It's sort of a perpetual problem, because they end up with a lot of bottles lying around," Kapadia says.

Both Kapadia and his patient suspected she may be on the wrong dose of levothyroxine, but Kapadia was able to employ an elegant solution to confirm this was the case – having been invited to beam into his patient's home via a telemedicine visit. "I was asking her, 'How much are you taking of your medicine?'" Kapadia says. "As patients often tell us, 'The white tablet' was the response. They don't really tell us how much they're actually on, just a description of what the pill looks like, which is not really always that useful, because different manufacturers' pills look a little bit different. I said, 'Why don't you go get the bottle?'"

When the patient showed Kapadia her prescription bottle, he discovered she was in fact taking and refilling the wrong dose, something he may not have discovered without this virtual house call. "I was able to correct her and get her to



pull out her other bottles and say, 'That's the one you want to be on and I want you to refill that one every time,'" he says.

Telehealth had already been adopted in spots around the country and was in the works or in its infancy in others, but the COVID-19 pandemic sent the implementation of many telemedicine programs into overdrive. Many institutions have responded swiftly and efficiently. From March 17 to May 31, Phoenix Children's Hospital's Endocrinology Department saw 4,400 patients through telemedicine visits — 86% of total visits. In-person visits comprised only 14% of appointments.

Still, these programs are only just emerging, and they're prone to the tale as old as technology: technical difficulties, legislative hurdles, and good old-fashioned user error. But oddly enough, the COVID-19 pandemic has forced the medical community to innovate in ways that may have taken years to accomplish.



The University of Pennsylvania responded to the COVID-19 pandemic by developing a “switchboard” through which physicians can see their own schedules at a glance, determine whether patients are in virtual waiting rooms and send them messages when it’s time to join or if the doctor is running late, or contact patients through video, phone, or text.

The Endocrinology Department at Penn also developed a workflow in which patients are contacted ahead of time and asked to download any continuous glucose monitoring or pump data prior to the visit.

A Semblance of Normalcy

Prior to COVID-19, Carrie M. Burns, MD, associate professor of Clinical Medicine in the Division of Endocrinology, Diabetes, and Metabolism the University of Pennsylvania, says she had not trialed telemedicine, but once the pandemic hit, the transition was quick, and for the past 10 weeks, she has been exclusively utilizing telemedicine for her busy practice.

“I feel fortunate that I have been able to care for my patients safely during a pandemic,” Burns says. “My patients have been grateful as well and have thanked me that we have been able to stay on top of care during such difficult times. It has been a good opportunity to check on them and discuss various matters on how they have been surviving during the pandemic: ideas on how to exercise effectively, check on their mood, safe ways to obtain groceries, etc.”

And in her role as a professor, Burns has been able to continue her commitment to her teaching mission, using video technology for face-to-face meetings with fellows, who have adopted this emerging technology and run with it. “I have been impressed with how easily they were able to transition to a new way of doing things,” she says. “We have managed to complete inpatient diabetes consults remotely — and [the fellows] impressed me at how determined they were to track down the patients and conduct a thorough interview via video.”

“It maintains some normalcy for us all,” Burns continues. “We actually used telehealth for our standardized patient (SP) curriculum this year and the SPs praised our fellows for establishing connections and empathy.”

The University of Pennsylvania responded to the COVID-19 pandemic by developing a “switchboard” through which physicians can see their own schedules at a glance, determine whether patients are in virtual waiting rooms and send them messages when it’s time to join or if the doctor is running late, or contact patients through video, phone, or text.

The Endocrinology Department at Penn stepped up as well, developing a workflow in which patients are contacted ahead of time and asked to download any continuous glucose monitoring or pump data prior to the visit. “Our staff documents the patients’ passwords in a secure location in the EMR, so that we don’t have to search for it each time,” Burns says. “This allows us to quickly have the data at our fingertips at the time of the visits. Moving forward, we are working on developing pathways to decide which patients need to be seen in the office and who should be seen remotely.”

And endocrinologists are especially tuned in to treating patients with COVID-19, as the virus is particularly devastating to patients with comorbidities like diabetes or obesity. Hospitalized patients with the novel coronavirus

“ I think endocrinology is an ideal field for the e-consult model, just as with telehealth. It has been satisfying for both patients and our primary care colleagues who are frequently frustrated at our long waits.”

— CARRIE M. BURNS, MD, ASSOCIATE PROFESSOR OF CLINICAL MEDICINE IN THE DIVISION OF ENDOCRINOLOGY, DIABETES, AND METABOLISM THE UNIVERSITY OF PENNSYLVANIA



and diabetes account for more than 20% of the intensive care unit population, according to a study recently published in *The Journal of Clinical Endocrinology & Metabolism*. But again, telemedicine presents the opportunity to treat these patients as optimally as possible while still mitigating risks.

Burns points out that when she and her colleagues are consulting on patients hospitalized with COVID-19, they were noticing how rapidly these patients' conditions and treatment plans changed, which meant Burns and her team had to be available at a moment's notice to give recommendations for rapidly changing scenarios. "In addition, we have to be mindful of our nursing colleagues, who are in the rooms frequently," she says. "We are sometimes utilizing regular insulin to be able to dose less frequently to help reduce the number of times our dedicated staff have to don and doff PPE."

Burns says that her practice is slowly transitioning back to a mixture of in-person and telemedicine visits. Still, she doesn't see a future where healthcare is completely devoid of telemedicine. "I think specifically of my patients I treat for osteoporosis — on a snowy or icy day, I would urge them to cancel — now I would be able to convert these visits to telehealth and still safely deliver the needed care," she says.

Value Beyond a Pandemic

The very first patient Michelle L. Griffith, MD, associate professor of medicine and medical director of Telehealth Ambulatory Services at Vanderbilt

Online TELEMEDICINE Tactics

If you missed the Endocrine Society's live webinar on May 20, 2020, "Telehealth in the Time of COVID-19," you can still catch the recording at: www.endocrine.org/telehealth_webinar.

The recording is free to Endocrine Society members (\$45 for nonmembers). Plus, you can earn 1.0 AMA PRA Category 1 Credit™.

The Endocrine Society's record-breaking **ENDO Online 2020** also featured a session called "Telemedicine in the Age of COVID-19" developed in collaboration with the European Society of Endocrinology. Chaired by Endocrine Society president Gary D. Hammer, MD, and Martin Reincke, MD, this session includes separate talks on:

- ▶ "Perspectives on Rare Endocrine Conditions" by Alberto M. Pereira Arias, MD, PhD;
- ▶ "Lessons Learned from Virtual Tumor Boards" by Sophie Leboulleux, MD; and
- ▶ "New Use of Home Lab Measurements for E-consults" by Ravinder J. Singh, PhD.

This session is available at: www.endocrine.org/endoonline_telemedicine.



“From a very practical standpoint, until we have a vaccine for the novel coronavirus, we are likely to continue social distancing measures that are not compatible with full waiting rooms, so telehealth will likely remain an important way to take care of some of our patients.”

— MICHELLE L. GRIFFITH, MD, ASSOCIATE PROFESSOR OF MEDICINE; MEDICAL DIRECTOR, TELEHEALTH AMBULATORY SERVICES, VANDERBILT UNIVERSITY, NASHVILLE, TENN.



University in Nashville, Tenn., saw via a telemedicine visit during the COVID-19 pandemic was a gentleman in his 70s with hyperparathyroidism. He initially had trouble launching the video connection, which required help from the tech support line. Griffith says they were eventually able to connect, they reviewed his records, and they had a good, productive discussion.

“I thought he might be annoyed with the technology,” she says. “However, he closed the visit by saying, ‘We should all see our doctors this way, all the time.’”

“Notably, due to Medicare rules, he was only eligible for this service at this time because of the pandemic-related waivers,” Griffith continues. “With just one telehealth experience — despite some technical challenges — he saw the value was not limited to the pandemic.”

And therein lies the hesitance for some institutions to adopt telehealth, and why legislative red tape could still hamstring this technology once the COVID-19 pandemic becomes a distant memory. Burns says that while some at the University of Pennsylvania had been piloting telehealth programs, her department had not been able to incorporate telehealth because of lack of payment for these services.

Medicare has relaxed many of its restrictions on payment for telehealth visits, but the administration makes clear that these changes are temporary, so it’s still anyone’s guess how things proceed from here. For the time being, endocrinologists seem have taken advantage of these waivers. “Billing has been one of the easiest parts of using telehealth, as the differences from in-office visits for endocrinologists are minimal,” says Chase D. Hendrickson, MD, MPH, associate professor of medicine and Griffith’s colleague at Vanderbilt. “The problem has always

been insurance coverage. The rate and degree of that change over the past several months has been dramatic and allowed us to provide needed care for our patients.”

In order to develop sound telehealth practices at Vanderbilt, Hendrickson says that his department benefitted from a close partnership with the Office of Healthcare Compliance, which was able to provide guidance on things like proper coding. “The most important steps were frequent communication on licensing (i.e., which states we can see what types of patients in) and the proper wording to add to our note to indicate that a telehealth visit was conducted appropriately,” he says.

And until things take a dramatic turn, it looks like telemedicine is going to remain the first line of care for endocrine patients; these wrinkles will need to be ironed out, so physicians and patients can feel comfortable sharing the experience of telemedicine. “From a very practical standpoint, until we have a vaccine for the novel coronavirus, we are likely to continue social distancing measures that are not compatible with full waiting rooms, so telehealth will likely remain an important way to take care of some of our patients,” Griffith says.

Still, it turns out that endocrinology is especially well positioned for this brave new world of healthcare, not just for endocrine patients who can be treated just as well from their couches as exam tables, but for the endocrinologist who was just referred a patient.

Unwavering Flexibility

Referrals for endocrinology are often questions about labs — workup or interpretation, according to Varsha Vimalananda, MD, MPH, of the Center for Healthcare Organization and Implementation Research at Edith Nourse Rogers Memorial



Although social distancing measures and masks are now the norm in waiting rooms around the world, telemedicine offers a safer alternative for those patients who are most at risk.

VAMC in Bedford, Mass. Endocrine lab tests often need to be interpreted in the context of other lab tests. “These types of questions are great for e-consults,” she says. “And for e-consults in general, it’s possible one or two lab tests extra might be ordered if you provide recommendations without seeing the patient in person, but if clinical quality is preserved, then on a population level the benefits of not having the patient come in — reduced travel, less care fragmentation, more room in endocrine clinic for more complex patients — may outweigh that cost.”

Back over at Penn, the Endocrinology Department has emerged as the leader in e-consults, Burns tells *Endocrine News*. The endocrinologists there have utilized e-consults with their primary care colleagues as a way to differentiate cases in which a simple answer can be given to the primary care provider or whether the patient needs more specialized care. “I think endocrinology is an ideal field for the e-consult model, just as with telehealth,” Burns says. “It has been satisfying for both patients and our primary care colleagues who are frequently frustrated at our long waits.”

Vimalananda says that studies find that specialist recommendations are usually, but not always, carried out, which speaks to the primary care provider also having the flexibility to reject the recommendations should they not align with a patient’s priorities and capabilities. “We may also make recommendations that the referring clinician does not feel able to carry out in their clinic either due to their own level of comfort or clinic resources” she says.

And that flexibility is what makes telemedicine so vital to healthcare going forward. “On an individual level, after the technology aspect is sorted out, I



“ Now that patients and clinicians have experienced the convenience and efficiency of telehealth, and payers have established reimbursement to support that, it is going to be very hard to put the genie back in the bottle, and I don’t think anyone will want to.”

— VARSHA VIMALANANDA, MD, MPH, OF THE CENTER FOR HEALTHCARE ORGANIZATION AND IMPLEMENTATION RESEARCH AT EDITH NOURSE ROGERS MEMORIAL VAMC IN BEDFORD, MASS.



think clinicians will really enjoy the opportunity to tailor the mode of healthcare delivery to the case at hand,” Vimalananda says. “In terms of what’s next: ensuring access to the resources needed (for patients and healthcare systems) and developing pathways to determine which patients are most appropriate for face-to-face, telehealth, or e-consult.”

High-Tech Hang-ups

Telemedicine was originally conceived as a way to reach patients who live in remote or distant (from the clinic) locations, or for patients who may have difficulty leaving their houses. Kapadia says that in the past, a patient might have been a no-show because he or she was too busy with work or childcare. But with telemedicine, the patients who previously struggled to keep their appointments have been showing up, connecting to their physicians in previously unprecedented ways.

Phoenix Children’s Hospital also set up a dashboard in which physicians can make determinations whether patients require in-person visits versus telemedicine or simple telephone follow-ups. Physicians are able to look at their future schedules and mark the patients respective to the type of visit needed. However, Kapadia notes that patients can refuse a telemedicine visit and prefer to come in person. “That’s one of the hiccups you can run into because they’re used to coming in, or they may be uncomfortable with the technology,” he says.

And these patients who do live in remote areas may not have the best access to broadband internet, which means a smooth video connection can be next to impossible. “I had a few patients who

had to decline telehealth because they knew their internet access was not going to work for it,” Griffith says. “It’s also important to acknowledge that accessing this kind of care at home requires a smartphone, tablet, or computer, and not every patient has those devices.”

Glitches happen, just the same as when Netflix or Twitter is unavailable. Sometimes Wi-Fi drops out or too many attendees on a virtual meeting overload the system. None of these are new phenomena, and telehealth certainly isn’t immune from these high-tech hang-ups. This is still a work in progress, but the benefits definitely outweigh the disadvantages. Everyone here agrees that telehealth has been an effective tool, especially vital during this pandemic where people should remain six feet apart at all times and stay at home whenever possible.

Lockdown orders don’t just interrupt patient care, but physician learning as well, as fellows have seen some disruptions to their curriculums. “A leading priority to bringing patients back into the office includes a plan in which patients can be seen with endocrine fellows to optimize their learning,” Burns says. “However, since telehealth is hopefully here to stay, the fellowship curriculum should incorporate training in best practices for telehealth and this might be offered to our members as well.”

An Emerging and Essential Technology

Telemedicine has provided the opportunity for physicians to do a little medical training with their patients too. Hendrickson has found that his patients have been able to perform physical exams

on themselves and transmit the images in real time via their smartphones. “Typically, the camera is of much better quality, and it is far easier for the patients to help examine certain areas (e.g. a visual examination of the feet for patients with diabetes),” he says. “More in-depth patient involvement can be quite challenging, such as asking a patient to palpate their pulse and count it aloud to assess for rate and regularity!”

Vimalananda says that telemedicine is now tied intrinsically to the future of healthcare, as the COVID-19 pandemic has laid bare just how essential this emerging technology has become. “Now that patients and clinicians have experienced the convenience and efficiency of telehealth, and payers have established reimbursement to support that, it is going to be very hard to put the genie back in the bottle, and I don’t think anyone will want to,” she says.

And while Vimalananda points out that many institutions and patients lack access to the needed technology, healthcare organizations are rising to the task and addressing the issue.

The Endocrine Society in May hosted a webinar to address the challenges and opportunities presented by telehealth, and **ENDO Online 2020** featured an on-demand session devoted to telehealth. “Endocrine Society members should look at their process of conducting telehealth with an eye towards a future where telehealth remains an important part of the care that we deliver and not a temporary mechanism during the pandemic,” Hendrickson says.

“Employers and health plans are also likely to recognize the advantages of more efficient care provided through telehealth and continue to offer it as a benefit,” Griffith says.

And again, patients seem to be warming to these novel ways of visiting their physicians, as the novel coronavirus pandemic continues to loom over the country. “Right now, the majority of the patients are totally amenable,” Kapadia says. “They say, ‘Hey, yeah, that’s great. I don’t have to leave home.’” ^{EN}

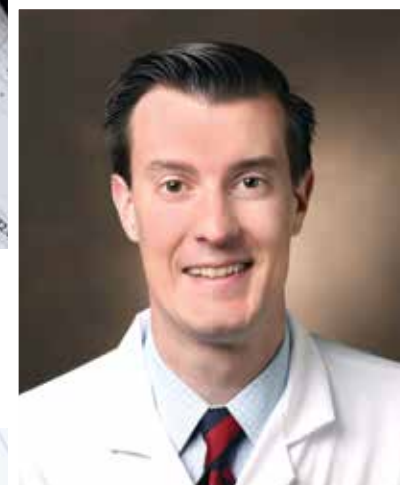
Telehealth or Telemedicine?

Many people have been using the phrases telemedicine and telehealth interchangeably. However, there is a fairly significant difference.

The Office of the National Coordinator for Health Information Technology distinguishes telehealth and telemedicine as such:

“Telehealth is different from telemedicine because it refers to a broader scope of remote healthcare services than telemedicine. While telemedicine refers specifically to remote clinical services, telehealth can refer to remote non-clinical services, such as provider training, administrative meetings, and continuing medical education, in addition to clinical services.”

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE ABOUT PRECAUTIONS BEING TAKEN IN CARING FOR COVID-19 PATIENTS IN A HOSPITAL SETTING IN THE JUNE ISSUE.



“Billing has been one of the easiest parts of using telehealth, as the differences from in-office visits for endocrinologists are minimal. The problem has always been insurance coverage. The rate and degree of that change over the past several months has been dramatic and allowed us to provide needed care for our patients.”

— CHASE D. HENDRICKSON, MD, MPH, ASSOCIATE PROFESSOR OF MEDICINE, VANDERBILT UNIVERSITY, NASHVILLE, TENN.



Glycemic Management in Hospitalized COVID-19 Patients

Hyperglycemia is among the biggest threats to COVID-19 patients. Hospitalized patients both with and without diabetes are exhibiting severe hyperglycemia, which studies have associated with the worst outcomes in this population.

New guidance on glycemic management in these patients published in *The Journal of Clinical Endocrinology & Metabolism* says that keeping patients' blood glucose within recommended limits is a goal that can be achieved while emphasizing protection for caregivers by making some adjustments to standard protocols.

The Danger

A study in the *Journal of Diabetes Science and Technology* of more than 1,100 patients in 88

Hospitalized COVID-19 patients often have elevated blood glucose, which is frequently linked to worse outcomes. Recently published guidelines recommend adjusting protocols, without changing too many routines, to optimize glycemic management and caregiver protection.

BY ERIC SEABORG



hospitals in 11 U.S. states found that patients with diabetes or uncontrolled hyperglycemia had a mortality rate four times higher than that of patients without diabetes or hyperglycemia. A *Cell Metabolism* study of 7,000 patients in China found that COVID-19 patients with diabetes needed more medical interventions and suffered higher mortality, but that well-controlled blood glucose correlated with improved outcomes.

Writing in *Diabetes Research and Clinical Practice* on the experience in Italy, Antonio Ceriello, MD, head of the diabetes department at IRCCS MultiMedica in Milan, noted two mechanisms by which hyperglycemia contributes to worse outcomes in these patients. First, “an acute increase of glycemia is accompanied by a huge increase in inflammatory mediators” that contribute to cytokine storm.

A second reason specific to COVID-19 relates to angiotensin-converting enzyme 2 (ACE2), the enzyme believed to be used by the virus for access to cells. Hyperglycemia contributes to greater glycosylation of ACE2, and this glycosylation is needed for the virus to link to the cellular receptor for intrusion into the cell. More glycosylated ACE2 “could favor the cellular intrusion of SARS-CoV-2, thus leading to ... a higher disease severity,” Ceriello writes.

Stick with What You Do Well

When SARS-CoV-2 began invading the U.S., emails filled the inbox of Robert J. Rushakoff, MD, medical director for inpatient diabetes at the University of California, San Francisco (UCSF) Medical Center, and one of the authors of the guidance. Colleagues from around the country were discussing the unusual symptoms and scrambling to respond to a virus with largely unknown properties.

As patients began to appear with extremely high glucose levels — even by the standards of critically ill patients — the question was how to respond. Rushakoff’s hospital had well-established diabetes management protocols, and his goal was to maintain them as much as possible in order to reduce mistakes: “You

“ If a nurse is in a patient room to monitor a point-of-care blood glucose value, they can also administer an insulin dose or other medications at the same time. **They also can use this interaction to do a clinical assessment and deliver the meal tray. But these patients require very close follow-up, because their conditions can deteriorate rapidly.**”

— MARY KORYTKOWSKI, MD, DIRECTOR, QUALITY IMPROVEMENT,
DIVISION OF ENDOCRINOLOGY, UNIVERSITY OF PITTSBURGH MEDICAL CENTER,
PITTSBURGH, PA.

“

If you change everything and tell nurses, ‘We have to do everything totally differently for this patient,’ it is stressful. **You might have to take [nurses] away from usual care to educate and train [them on new procedures], which should only happen if absolutely necessary.**”

— MARIE E. MCDONNELL, MD, DIRECTOR, DIABETES PROGRAM, BRIGHAM AND WOMEN'S HOSPITAL, BOSTON, MASS.

need to follow what you put in place to begin with, because if you change a lot of basic things the staff is accustomed to doing, there is more risk.”

“If you change everything and tell nurses, ‘We have to do everything totally differently for this patient,’ it is stressful,” agrees Marie E. McDonnell, MD, director of the diabetes program at Brigham and Women’s Hospital in Boston and a co-author of the guidance. “You might have to take [nurses] away from usual care to educate and train [them on new procedures], which should only happen if absolutely necessary.”

Clustered Care to Reduce Exposure

With that in mind, there was an overarching requirement to keep nurses and other providers as safe as possible from the highly infectious virus, and that meant minimizing the number of trips into a patient’s room. Fewer trips into the patient room obviously also reduce the amount of personal protective equipment used and the time required for putting it on and taking it off.

RESOURCES

“A Pragmatic Approach to Inpatient Diabetes Management during the COVID-19 Pandemic” in the *Journal of Clinical Endocrinology & Metabolism*:

<https://academic.oup.com/jcem/advance-article/doi/10.1210/clinem/dgaa342/5851514>

COVID-19 hyperglycemia treatment protocol at Brigham and Women’s Hospital:

https://covidprotocols.herokuapp.com/pdf/Intensive_Subcutaneous_Insulin_Protocol_for_ICU.pdf

That meant clustering as much care as possible into one interaction, says Mary Korytkowski, MD, director of quality improvement in the Division of Endocrinology at the University of Pittsburgh Medical Center and another co-author. “If a nurse is in a patient room to monitor a point-of-care blood glucose value, they can also administer an insulin dose or other medications at the same time. They also can use this interaction to do a clinical assessment and deliver the meal tray. But these patients require very close follow-up, because their conditions can deteriorate rapidly,” she says.

Rushakoff says that his institution sought to deliver care “in one fell swoop. The meal is going to be brought in to the patient anyway, so the nurse who brings the meal in checks their blood sugar at the same time. They have to enter all that into the computer in the patient’s room and give them their shot of insulin.” But to accommodate that timing, UCSF changed from standardized times for delivering insulin to harmonizing these deliveries with the timing of meals, other drugs, and other interventions.

Favoring Subcutaneous Insulin

One change from previous standards was to use subcutaneous insulin where possible instead of intravenous insulin infusions in critical care areas. Guidelines from the American Diabetes Association recommend that critically ill patients with elevated blood glucose are best treated with IV insulin, Korytkowski says, but IV insulin infusions require monitoring of blood glucose values every one to two hours to guide adjustments in the insulin infusion rate.

Subcutaneous insulin, which is longer-acting, fits the needs much better for clustering care and nurses are accustomed to delivering it, although the amounts of insulin needed in COVID-19 can be unprecedented. “The ICU patients can



become extraordinarily insulin resistant, often requiring 300 to 400 units of insulin per day,” Rushakoff says. The insulin needs also change as the disease progresses, so when a patient needs to be intubated and started on enteral feeding, “the insulin requirements ratchet up very quickly,” he says.


McDonnell says because of many factors unique to COVID-19, her institution often achieved better control with the subcutaneous insulin than it might have with IV insulin, but that the high doses concerned some staff members.

“We have a small number of inpatient diabetologists who are comfortable with very high-dose insulin, but most of our endocrinology consultants are not. We had to reorganize our general endocrinology consultation team so there was always a diabetes specialist attending available for consults in the hospital. That was a difficult thing from a workload perspective, but our team met the challenge like we saw in many institutions,” she says.

Protecting the Lines

Another advantage of subcutaneous insulin over IV insulin is that it avoids the extraordinary clotting problems associated with COVID-19 infection. Brigham and Women’s Hospital saw at least 10 cases in which subcutaneous insulin was the only choice because the patients were losing their lines due to thrombosis. They were asked to stick with subcutaneous insulin to conserve the patients’ lines for other critical drugs, such as for blood pressure. “I’ve never seen anything like that before,” McDonnell says.

Of course, IV insulin remained the fallback for the sickest patients and those with severe diabetic ketoacidosis.

The three co-authors say that although some institutions have experimented with continuous glucose monitoring and even trying to move IV lines out of patient rooms to avoid caregiver exposure, in their experience trying to make such drastic changes in the face of a pandemic is likely to be counterproductive. The authors write that they hope to reconcile recommended standards of care with some modified protocols “while also addressing the daily realities of an overwhelmed healthcare system for many parts of the country.” 

— SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA., AND A FREQUENT CONTRIBUTOR TO *ENDOCRINE NEWS*. IN THE JUNE ISSUE, HE WROTE ABOUT THE EFFECTS OF RAS INHIBITORS ON COVID-19 PATIENTS.

AT A GLANCE

- ▶ **COVID-19 patients are appearing in hospitals with extremely high blood glucose levels, and hyperglycemia is associated with much worse outcomes in COVID-19 patients.**
- ▶ **Hospitals need protocols that address the special needs of these patients, protect caregivers from exposure to the virus, and avoid the need for caregivers to suddenly learn new skills.**
- ▶ **Clustering care can protect nurses from infection and administering subcutaneous insulin to patients who might otherwise receive IV insulin can be a part of a specific COVID-19 protocol.**

Can FEMALE SEX HORMONES Help in COVID-19 Treatment?

As part of the high-stakes race for effective COVID-19 treatments, clinical trials are testing whether the female hormones estrogen and progesterone could improve outcomes in hospitalized patients.

The idea for trying these novel treatments stems from the observation that men are at much higher risk than women for severe infections and death. The difference between sexes diminishes with age, which is a clue that hormones could be playing a role, according to Antonios Gasparis, MD, a vascular surgeon at Stony Brook University Hospital in Stony Brook, N.Y. Gasparis proposed the estrogen trial, which is being led by Sharon Nachman, MD, a pediatric infectious disease specialist.

Consistent with the experience elsewhere, Stony Brook's male COVID-19 patients younger than age 55 were dying at a rate three times that of age-matched females. Among older patients, females still incur significantly less morbidity and mortality, but the ratio is much closer.

Searching for possible explanations for the disparity while researching the thrombotic complications of COVID-19, Gasparis encountered studies in mice reporting that females infected with coronavirus did much better than males, but when the females were given an estrogen receptor blocker, their outcomes were the same as males. Because estrogen is not simply a sex hormone, but also affects the immune system, "we started thinking that estrogen may potentially be the key difference between females and males," Gasparis says.

Because male COVID-19 patients are at higher risk for serious illness and death, researchers are looking for the causes of this disparity, as well as potential treatments. New clinical trials are testing whether estrogen and progesterone could lessen the severity of the infection even though the role of these hormones is still not fully understood.

BY ERIC SEABORG





Since estrogen affects the immune system, Antonios Gasparis, MD, and his team began considering that it could potentially be a key difference between male and female COVID-19 patient outcomes.

Studies of Estrogen and Progesterone

The randomized study at Stony Brook University Hospital is enrolling 110 patients who appear at the hospital emergency room with COVID-19 symptoms and do not require intubation. The treatment group will receive a seven-day course of estradiol delivered via a transdermal patch at a dose routinely given to postmenopausal women plus standard of care, and the control group will receive only the standard of care. The study will enroll men over 18, but in an interesting twist, in the older than age 55-plus age group, it will include both men and women to test the treatment in postmenopausal women.

On the other side of the country, a separate randomized study at Cedars-Sinai in Los Angeles, California, is enrolling 40 men hospitalized with mild to moderate symptoms. The treatment group will receive two 100-mg progesterone injections daily for five days in addition to the standard of care, with a control group receiving only the standard of care.

Greater Immune Response

Females generally mount a higher immune response to viral infections than males, and estrogen and progesterone are both immunomodulatory, according to Sabra L. Klein, PhD, professor at the Johns Hopkins Bloomberg School of Public Health, whose research focuses on how males and females differ in their immune responses to viral infection and vaccination.

“There are receptors for estrogen and progesterone on lots of our immune cells. These hormones can alter the immune responses and even limit the cytokine storm,” Klein says.

Her studies have shown that estrogen increases the antibody response to the flu vaccine. “In mice, we can take away the ovaries and then give back estrogen. That significantly increases the antibody response to the flu vaccine. In people, we showed a correlation among both reproductive aged individuals as well as women 65 years and older — the higher your estrogen level, the greater your antibody response to the flu vaccine,” Klein says.

Potential Mechanisms

There are many possible pathways through which sex hormones can make a difference in immune response, but one area specific to COVID-19 infections involves angiotensin-converting enzyme 2 (ACE2), according to Kathryn Sandberg, PhD, vice chair for research in the Department of Medicine and director of the Center for the Study of Sex Differences at Georgetown University.

ACE2 has received a great deal of attention because the SARS-CoV-2 virus surface has a spike protein that can attach to ACE2, making the enzyme a potential entry point where the virus can access cells and replicate. ACE2 is regulated differently in males and females, and estrogen has been shown to play a role: “In mice, if you remove the ovarian hormones,

“ There are receptors for estrogen and progesterone on lots of our immune cells. These hormones can alter the immune responses and even limit the cytokine storm.”

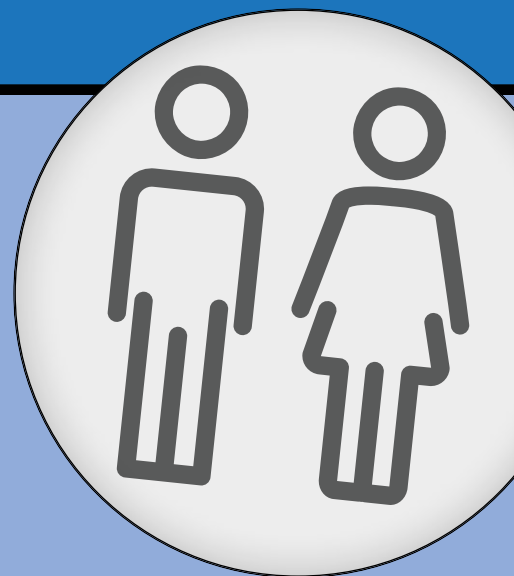
— SABRA L. KLEIN, PHD, PROFESSOR,
JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH, BALTIMORE, MD.

ACE2 expression increases. But if you treat these mice with estrogen, you prevent that increase. It works in the male as well,” Sandberg explains. “If you give estrogen to the male, it lowers ACE2. If you have higher expression of the target that this virus uses to enter cells, it could be that you’ll have higher viral load in males. If you have higher viral loads, that could be one reason that you have worse outcomes.”

The role of ACE2 in COVID-19 is controversial, however. ACE2 plays a major anti-inflammatory role by converting angiotensin II, an inflammation perpetrator, to angiotensin 1-7, which carries anti-inflammatory properties. So the theoretical roles of ACE2 in COVID-19 are contradictory.

Another pathway relevant to general virus response involves type 1 interferon, according to Susan Kovats, PhD, associate member in the arthritis and clinical immunology program at the Oklahoma Medical Research Foundation, Oklahoma City, who studies the role of sex hormones in respiratory virus infections: “Female immune cells produce more type 1 interferon, which directs an anti-viral response. It induces a cascade of genes that act to cut up viral RNA, prevent entry of virus into the cell, or prevent exit of assembled viruses from the cell.” In a French study, when postmenopausal women were treated with an estrogen patch, their immune cells made more type 1 interferon.

Klein is particularly interested in seeing the outcome of the trial testing progesterone, which is often treated like the “little sister” of estrogen, even though “in addition to its immunomodulatory properties, it has beautiful tissue repair properties.” Her team treated ovariectomized mice infected with influenza A with progesterone and found that it altered the inflammatory environment of the lungs and promoted faster recovery by increasing levels of several cytokines, reducing protein leakage into the airway, improving pulmonary function, and upregulating the epidermal growth factor amphiregulin.



AT A GLANCE

- ▶ **COVID-19 infections are more severe in males than females in all age groups, leading researchers to search for causes of the disparity — and potential treatments.**
- ▶ **Because estrogen and progesterone both have immunomodulatory properties, researchers have launched clinical trials testing them as potential treatments for COVID-19.**
- ▶ **Women generally mount a greater immune response to viral infections than men, but the role of sex hormones in this response is not well understood.**

“

I am in infectious disease, and Dr. [Antonios] Gasparis is a vascular surgeon. **In the regular scheme of things, the two of us wouldn't be developing studies together. But thinking across divisions and departments is really critical in the time of COVID.**”

— SHARON NACHMAN, MD, PEDIATRIC INFECTIOUS DISEASE SPECIALIST, STONY BROOK UNIVERSITY HOSPITAL, STONY BROOK, N.Y.

Researchers Explore Androgen Link to Severe COVID-19



As some researchers explore the potential of using female hormones to treat COVID-19, others are looking at the flip side: Are androgens to blame for the greater severity of infections in men?

Several observational studies raise suspicions in the minds of some researchers about the role of androgens. A population-based study in the *Annals of Oncology* of 4,532 men with confirmed COVID-19 hospitalized in the Veneto region of Italy found that cancer patients have an increased risk of COVID-19 infection compared with non-cancer patients. However, prostate cancer patients receiving androgen deprivation therapy appear to be partially protected from SARS-CoV-2 infections.

A letter in the *Journal of Cosmetic Dermatology* reported a “preliminary observation” among 41 male COVID-19 patients hospitalized in Spain of a much higher than expected incidence of androgenetic alopecia (AGA) —

male pattern baldness associated with high levels of dihydrotestosterone in the scalp — compared with the general population. In a research letter in the *Journal of the American Academy of Dermatology*, the same authors found a similar over-representation of AGA among 175 males and females admitted for COVID-19 to hospitals in Madrid. The authors cite a study of male mice infected with SARS-CoV-2 that found a protective effect of prophylactic administration of the anti-androgen flutamide.

The researchers point to a potential pathway by which androgens could contribute to the severity of COVID-19 infections. Angiotensin-converting enzyme 2 has received a lot of attention for having a receptor for the SARS-CoV-2 spike protein that allows the virus to gain access to cells. But another enzyme, the transmembrane protease serine 2 (TMPRSS2) has been also implicated. TMPRSS2 cleaves the spike protein, which activates it for host cell entry. The androgen receptor regulates TMPRSS2 transcription.

A search of **clinicaltrials.gov** reveals two clinical trials related to androgens that will begin enrolling soon. A study at VA hospitals will test the effects of the advanced prostate cancer drug degarelix, a gonadotropin-releasing hormone antagonist, in COVID-19 patients. A study at Johns Hopkins University will test the nonsteroidal anti-androgen bicalutamide.

Michael S. Irwig, MD, director of transgender medicine at Beth Israel Deaconess Medical Center in Boston, Mass., says that studies like Klein's have shown a positive role of progesterone, but that other studies "looking at a mouse model of influenza found that progesterone played a detrimental role, whereas estrogen may have played a protective role. So the studies are not consistent."

He points out that pregnant women were more likely to die from the H1N1 influenza virus despite higher estrogen and higher progesterone levels.

Highlighting the unsettled state of knowledge — and the individuality of viruses — Gasparis says that pregnant women with COVID-19 "usually have a mild form of the disease."

Klein doubts that sex hormones by themselves alone can explain the differences in male and female outcomes because "we are still seeing sex differences in people in their 60s, 70s, 80s, and even 90s, when circulating estrogen cannot be the fundamental factor contributing to why women are protected. These trials could still show that estrogen and progesterone positively impact outcomes from COVID-19, but my prediction is that it would do that in both men and women."

Klein notes that a recent paper in *Nature* of a large-scale screen of compounds that could be repurposed for use against SARS-CoV-2 identified progesterone as one potential drug.

Stony Brook principal investigator Nachman says that to her knowledge, this would be the first time a sex hormone has been used to treat a viral infection, but "repurposing drugs works" and estrogen has a proven safety profile.

And combatting a pandemic requires novel thinking and cooperation. "I am in infectious disease, and Dr. Gasparis is a vascular surgeon. In the regular scheme of things, the two of us wouldn't be developing studies together. But thinking across divisions and departments is really critical in the time of COVID," Nachman says. ^{EN}

“Female immune cells produce more type 1 interferon, which directs an anti-viral response. It induces a cascade of genes that act to cut up viral RNA, prevent entry of virus into the cell, or prevent exit of assembled viruses from the cell.”

— SUSAN KOVATS, PHD, ASSOCIATE MEMBER,
ARTHRITIS AND CLINICAL IMMUNOLOGY PROGRAM,
OKLAHOMA MEDICAL RESEARCH FOUNDATION, OKLAHOMA CITY, OKLA.

A close-up of a person in a white lab coat holding a black smartphone with both hands. A stethoscope is visible around their neck. The background is blurred.

FILLING THE VOID:

Twitter and the Endocrinologist's Response to COVID-19

Many endocrinologists — both clinicians and scientists — have been using social media for years to communicate their own research, share information with patients, or simply stay informed of late-breaking developments from around the world. Joy Y. Wu, MD, PhD, discusses her use of Twitter and why it has been so vital during the COVID-19 pandemic.

BY JOY Y. WU, MD, PhD

For several years, I have encouraged trainees and colleagues to join academic Twitter. Twitter allows me to stay current with published literature in both my clinical (osteoporosis and metabolic bone disease) and research (skeletal biology) arenas. It's also a terrific way to follow the proceedings of scientific conferences in real time and valuable for networking, education, and advocacy.

In recent months as the world was upended by the COVID-19 pandemic, Twitter has played an important role in the global response, enabling information to be shared among physicians and researchers with unprecedented speed and wide-ranging impact. Among endocrinologists, Twitter has been a valuable forum for discussing the clinical, research, and academic issues that have arisen as a result of the pandemic.

Raising the Alarm

The global COVID-19 pandemic unfolded with astonishing rapidity. From the first reports of a novel viral pneumonia in Wuhan, China, in late December 2019, to a dramatic global response including travel restrictions, quarantines,

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We are just beginning to see the results of an enormous effort by researchers to develop strategies to diagnose, treat, and ultimately prevent COVID-19 infections. **As large parts of the world are currently under lockdown conditions, Twitter has been a valuable resource for networking and setting up collaborations among researchers.”**

— JOY Y. WU, MD, PHD, ASSOCIATE PROFESSOR OF MEDICINE, DEPARTMENT OF MEDICINE (ENDOCRINOLOGY), STANFORD UNIVERSITY SCHOOL OF MEDICINE, STANFORD, CALIF.

and national border closings, the number of COVID-19 cases world-wide has surpassed several million in only a few short months.

For a few weeks in February, as the quarantine imposed by officials on Hubei province gradually slowed the appearance of new cases in China, the total number of confirmed cases in the rest of the world was fewer than 1,000. But public health experts were sounding warnings against complacency in the rest of the world.

In a tweet that now seems hauntingly prescient, on February 8, Trevor Bedford, a computational biologist at the Fred Hutchinson Cancer Research Center in Seattle, Wash., noted that cases in Wuhan had progressed from the index case to several thousand cases over a 10-week period. Since international seeding events were believed to have started in mid-January, there was therefore a critical 10-week period (until late March) to contain these nascent outbreaks in the rest of the world.

Ashish Jha, professor of global health at Harvard University, highlighted in a series of tweets the need for greater U.S. preparation, testing, and social distancing. On March 8, he warned via Twitter that hospitals in Northern Italy were being overwhelmed with COVID-19 patients and that the same could happen to U.S. hospitals. This point was soon brought home by chilling reports from physicians in Italy on the dire circumstances in hospitals. Sadly a few weeks later a similar scenario began to play out in New York City hospitals as the epicenter of the pandemic shifted to the U.S. and was eloquently documented by Craig Smith, MD, chairman of the Columbia University Department of Surgery.

A crucial contribution to growing public support for the

necessity of social distancing came from widely shared graphics demonstrating that such measures could “flatten the curve,” that is, spread out the number of cases over a longer period of time to avoid overwhelming medical systems. The original figure (which appeared in a 2007 CDC report) was adapted by Rosamund Pearce, a data visualization journalist, for an article in *The Economist*. The figure was subsequently revised by public health educator Drew Harris, who added a line to represent healthcare system capacity, and then converted it into a GIF by New Zealand microbiologist Siouxsie Wiles and illustrator Toby Morris.

As a growing sense of urgency related to COVID-19 spread in the U.S., physicians and hospitals took to Twitter to appeal for donations of personal protective equipment so desperately needed by healthcare workers. Likewise, as early efforts to ramp up testing were hampered by shortages of supplies and reagents, tweet appeals for donations were met with tremendous response.

Global Exchange of Clinical Information

As COVID-19 spread inexorably around the world, Twitter facilitated the rapid sharing of clinical information. In one early example, webinars hosted jointly by the Chinese Cardiovascular Association and the American College of Cardiology allowed Chinese cardiologists to share their clinical expertise and to discuss clinical questions including the safety of ACE inhibitors/angiotensin II receptor blockers and management of acute

EDITOR'S NOTE: This article is also on the *Endocrine News* website and contains dozens of links to the items Wu discusses throughout her article: www.endocrine.org/twitter_wu.



coronary syndrome in patients testing positive for COVID-19.

The University of Washington shared its protocols relating to COVID-19. The Department of Medicine at Stanford University School of Medicine converted its weekly Grand Rounds into virtual updates on the COVID-19 pandemic, and, like many institutions, made these recordings publicly available.

Publications on COVID-19 have appeared with impressive speed and are widely shared and discussed on social media. Some of the earliest examples included an article published in *JAMA* on March 3, describing the measures that so far have enabled Taiwan, located only 81 miles from and with close business and travel ties to China, to effectively contain the spread of COVID-19, and an article reporting the characteristics of 21 critically ill patients in Washington State.

Preprint servers have also played a prominent role in disseminating information. While there are concerns about the widespread release of data that have not yet been peer-reviewed, social media has allowed for extensive discussion and evaluation of these data.

Endocrinologists & COVID-19

The practice of endocrinology has been dramatically altered by the COVID-19 pandemic. Conversion of in-person clinic visits to telemedicine has been widely adopted by endocrinologists,

and Twitter has provided a valuable forum for sharing experience and best practices. Professional societies devoted to endocrinology around the world have issued statements, collated resources, and hosted webinars dedicated to the management of endocrine conditions during the pandemic.

Management of many endocrine issues during COVID has been addressed on Twitter. For patients with diabetes, COVID-19-related issues have included management of type 1 diabetes in ICU patients on mechanical ventilation, protocols for the management of diabetic ketoacidosis, and use of continuous glucose monitoring in hospitalized COVID-19 patients.

For patients with asymptomatic thyroid nodules, experts recommended deferral of FNA biopsy while many regions were in various states of lockdown due to the pandemic. The American Thyroid Association developed a resource center with answers to frequently asked questions by patients and physicians. And as some regions begin to emerge from lockdown, discussions have begun to focus on how to safely resume thyroid nodule biopsies.

Other resources for endocrinologists available on Twitter include a webinar on the safety of pituitary surgery during COVID, recommendations on the use of glucocorticoids in patients with adrenal insufficiency and COVID-19, and joint guidance from multiple societies on the management of osteoporosis.

Endocrinologists have used Twitter to share their experience in clinical practice during COVID and to share resources to prepare for redeployment to the clinical front lines as needed. Social media has also been an effective platform for advocacy on behalf of patients and providers, for example, in urging the Congress to address issues related to COVID-19, and for raising awareness of the amplification of health inequities by the pandemic.

Virtually Sustaining the Academic Mission

Schools and universities have closed around the world in response to the pandemic, displacing millions of students and upending academic pursuits everywhere. Teaching medical students, residents, and clinical fellows has similarly faced drastic

“Perhaps, one day, looking back we will be able to more quantitatively estimate the impact of Twitter on the COVID-19 pandemic. **In the meantime, it serves as an invaluable source of both information and connection for endocrinologists.**”

— JOY Y. WU, MD, PHD, ASSOCIATE PROFESSOR OF MEDICINE, DEPARTMENT OF MEDICINE (ENDOCRINOLOGY), STANFORD UNIVERSITY SCHOOL OF MEDICINE, STANFORD, CALIF.

changes. Medical educators have used social media to share recommendations for using technology to maintain resident education, and discussions on Twitter have focused on sharing resources available to endocrinology fellowship programs. More changes await as interviews of residency and fellowship applicants for the upcoming academic year will move online.

The COVID-19 pandemic has led to the cancellation of many medical conferences including, of course, **ENDO 2020**. Seeking to sustain opportunities for networking, clinical and research updates, and career development, organizations have launched online virtual meetings that have been widely advertised on social media. Online journal clubs such as #EndoJC have also facilitated global discussions of publications of interest to endocrinologists.

For scientists in academic research laboratories, discussions on Twitter raised the need to plan for impending laboratory closures. Unable to work in the lab, academics have turned to social media to learn new skills such as bioinformatics. Academic issues including challenges faced by women and the impact of research cessation have also been raised on social media. Now as regional lockdowns begin to end, institutions are sharing their plans for safely reopening laboratories.

Data Sharing & Research

As with everything else related to COVID-19, research on COVID-19 has also progressed rapidly. As one example, genome sequencing of viral samples from across the U.S. have revealed how the infection has unfolded in this country.


We are just beginning to see the results of an enormous effort by researchers to develop strategies to diagnose, treat, and ultimately prevent COVID-19 infections. As large parts of the

world are currently under lockdown conditions, Twitter has been a valuable resource for networking and setting up collaborations among researchers.

For data aficionados, real-time tracking of confirmed COVID-19 cases and deaths is readily available on many sites including the Johns Hopkins Global COVID-19 Tracking Map, Our World In Data, and the COVID Tracking Project.

A Sense of Camaraderie

The global pandemic has been a time of heightened stress for everyone. Concerns abound relating to safety, health, financial, and professional impacts. In many parts of the world, previously inconceivable measures such as widespread lockdowns and closures of schools and businesses left many feeling dislocated and anxious. In these times, Twitter has also played a role in providing support and camaraderie.

At the moment, we are still in the midst of the pandemic with cases steadily increasing in many parts of the world. Perhaps, one day, looking back we will be able to more quantitatively estimate the impact of Twitter on the COVID-19 pandemic. In the meantime, it serves as an invaluable source of both information and connection for endocrinologists. Curious about how to get started with social media? That information is also available on Twitter. 

Wu is an associate professor of medicine in the department of medicine (endocrinology) at Stanford University School of Medicine, and a member of the Board of Directors of the Endocrine Society. Both her clinical practice and laboratory research focus on the prevention and treatment of osteoporosis. She speaks regularly on the professional benefits of social media. Follow Wu on Twitter: @JoyYWu



Tuning In:

Patients with Pituitary Disease and COVID-19

Endocrine News tuned into a *Pituitary World News* podcast to hear two neuroendocrinologists discuss treatment options for COVID-19 patients with underlying pituitary conditions.

BY KELLY HORVATH

The ongoing COVID-19 pandemic brings an unprecedented kind of challenge to both patients and healthcare personnel. Patients with complex endocrine disorders are already shouldering the heavy burden of trying to self-educate to understand and better manage their disease.

With the extremely contagious coronavirus circulating, these patients have additional concerns about their particular susceptibility; whether their treatments need to change and, if so, how; and what to do if they become infected with COVID-19. But how do clinicians advise patients about a disease we still know very little about?

In a recent *Pituitary World News (PWN)* podcast, neuroendocrinologists and specialists in pituitary diseases Lewis Blevins, MD, medical director of the California Center for Pituitary Disorders at the University of California, San Francisco, and *PWN* cofounder, and Kevin Yuen, MD, medical director of the Barrow Pituitary Center at the Barrow Neurological Institute, in Phoenix, Ariz., came together to provide some answers to these critical questions, emphasizing that there's still much to be investigated and learned.

As Blevins explains, "the podcast came about because Yuen wanted an efficient way for patients to get their questions answered. Instead of him answering the same questions over and over, he wished to direct his patients to a podcast. He and I are friends, and, both being pituitary experts, we run in the

same medical circles. We had accomplished a successful podcast together and decided to do another on this topic. It's clear that podcasts provide a means of educating a lot of people about one topic."

"This pandemic is causing a lot of anxiety, and generally the more 'well-known' diseases like hypertension and diabetes get a lot of publicity, whereas pituitary patients who are also susceptible to infections may feel left behind. I personally wanted to do this [podcast] to provide some guidance to my pituitary patients," Yuen says. "I want to let them know that they are not forgotten and hopefully give them some tips on how to optimally manage their condition during these stressful times as well as perhaps some hope." *PWN*'s other cofounder as well as chairman and CEO, Jorge Faccinetti, facilitated their discussion.

What Patients Are More Susceptible to Infection?

According to Yuen, patients with poorly controlled diabetes, hypertension, obesity, sleep apnea, severe adrenal insufficiency, high levels of cortisol (e.g., severe Cushing syndrome), and those on high-dose steroids — in other words, patients who probably have some form of immunosuppression — may be more susceptible to developing COVID-19 infection, as they are with any other infections.

Blevins agreed that the morbidity associated with those conditions could increase susceptibility, but we don't know for certain yet. However, given the extreme infectivity of this virus, he raised the possibility that these patients may not actually be more susceptible per se, but they are likely to do more poorly if infected than would an otherwise healthy patient. Susceptibility may be more a function of the degree to which a patient expresses the angiotensin-converting enzyme-2 (ACE2) receptor that the virus binds to in the lungs and also possibly whether the lineage of the virus contracted binds with lesser or greater affinity to the receptor.

COVID-19 and Adrenal Insufficiency or Cushing Syndrome

Yuen stated that patients with severe adrenal insufficiency, in general, are more prone to develop infections. Their concomitant electrolyte imbalances are exacerbated by infection, causing dehydration, which, in turn, can propagate an adrenal crisis.

According to Blevins, the risk is compounded by the fact

“Patients with adrenal insufficiency who become ill are going to require careful adjustments in steroid therapy,” he says. **“As we explained in the podcast, that’s why we give stress-dose steroids for illness and infection in these patients anyway, so you have to make sure that you do that in the setting of adrenal insufficiency and COVID-19 or you get a potentially fatal cytokine storm.”**

— LEWIS BLEVINS, MD, MEDICAL DIRECTOR, CALIFORNIA CENTER FOR PITUITARY DISORDERS, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, CALIF.

“

This pandemic is causing a lot of anxiety, and generally the more ‘well-known’ diseases like hypertension and diabetes get a lot of publicity, whereas pituitary patients who are also susceptible to infections may feel left behind. I personally wanted to do this [podcast] to provide some guidance to my pituitary patients.”

— KEVIN YUEN, MD, MEDICAL DIRECTOR, BARROW PITUITARY CENTER AT THE BARROW NEUROLOGICAL INSTITUTE, PHOENIX, ARIZ.



that if these patients don't make the appropriate increase in glucocorticoid supplementation early enough, they can become rapidly overwhelmed by COVID-19. "Patients with adrenal insufficiency who become ill are going to require careful adjustments in steroid therapy," he says. "As we explained in the podcast, that's why we give stress-dose steroids for illness and infection in these patients anyway, so you have to make sure that you do that in the setting of adrenal insufficiency and COVID-19 or you get a potentially fatal cytokine storm." One of the reasons for stress dosing is to modulate the effects of such immune system hyperactivity.

Yuen advised patients to be very cognizant of how they are feeling and to maintain a low threshold to stress dose with doubling or tripling the normal amounts of glucocorticoids they take, especially if high fever is present. That amount should be maintained until symptoms start to subside. However, there is a danger of potential immunosuppression if patients overdo it for too long to prevent problems from excess steroid administration.

"It's a balancing act with these patients and with patients with

Pituitary World News

To tune into the podcast, "Critical COVID-19 Information for Pituitary Patients," go to the *Pituitary World News* site at: www.pituitaryworldnews.org

Cushing syndrome,” agreed Blevins. It may seem counterintuitive to give more steroids to a patient with excess steroid production, but they could otherwise be unable to mount an adequate response to infection.

By definition, these patients are hypercortisolemic, explained Yuen. First-line treatment is surgery, but because many elective surgeries are being deferred during this pandemic, appropriate medical treatment should be the first line to reduce cortisol levels and keep these patients in eucortisolemic range, or to reduce cortisol action.

But what if a patient on one of these medications such as mifepristone develops COVID-19? Yuen believes these patients need to be well educated on this issue. They should stop the mifepristone immediately and replace it with levels of steroid even higher than stress doses to ward off a cytokine storm, which would be in the form of dexamethasone, and seek medical attention early.


Patients in Quarantine

Blevins advises quarantined patients to call their clinicians to get medication instruction and then figure out where to get tested to find out whether they actually have COVID-19. These patients should work with their clinicians to determine whether they can and should stay home, or if they instead need hospitalization. He also favors social distancing and sheltering at home to prevent the spread.

Yuen added that if patients have already been tested, they should assume that they are COVID-19 positive until proven otherwise so they don't unwittingly infect others.

Final Thoughts

“It may be that genetics is behind all of this and that we'll learn through the process of getting through this illness that that's the case,” Blevins said. “It's speculative at best, but we need to try to understand what's going on.” In the meantime, clinicians can direct their patients with pituitary disease to the podcast to get some interim advice from the experts, rather than attempt to sift through the abundance of misinformation online. “What we're trying to do on *PWN* and with that podcast is to help patients and their physicians understand how we as experts are understanding how this coronavirus infects people and the risk factors and poor outcomes — how do we really fit this into the practice of pituitary endocrinology?” Blevins says.

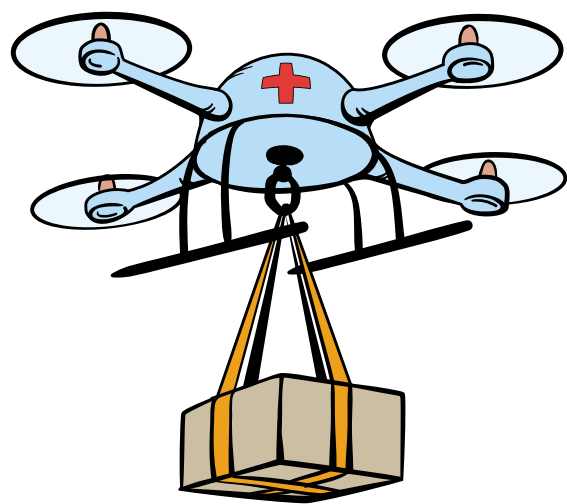
“Doing the podcast was a great way to share my experience with another esteemed colleague and to likewise learn from his experience,” Yuen says. “We are all trying to do the best for our patients. Ultimately, we should pay close attention to our patients' concerns and symptoms as well as advise them not to take their symptoms lightly during this pandemic, to manage their diabetes and adrenal insufficiency optimally, and to seek medical help expeditiously if they are in doubt of what they are doing.” 



AT A GLANCE

- ▶ **A recent podcast conducted by two neuroendocrinologists delved into treatment options for COVID-19 patients with underlying pituitary issues.**
- ▶ **Patients with adrenal insufficiency who develop COVID-19 infection require stress-dose steroids to prevent a potentially fatal cytokine storm.**
- ▶ **Despite having endogenous high levels of stress hormones, patients with even mild Cushing syndrome who develop COVID-19 infection may also require stress-dose steroids in order to be able to mount the appropriate immune response.**

Up, Up &



Drones have delivered medications and other medical supplies to people in underdeveloped areas, but what of their use in times of disaster or even a pandemic to patients with chronic conditions such as diabetes? A multi-disciplinary team has taken the first step to achieving insulin delivery via drone.

BY DEREK BAGLEY

The Aran Islands, located about 12 miles off the west coast of Ireland, are a popular tourist destination, especially in the summer. Visitors come to temporarily inhabit this untouched and pristine part of the world, to stand among rolling green hills and along its rocky coastlines that inspired painters and poets alike.

About 1,200 people live on these islands that stretch out along the mouth of the Galway Bay, staying behind even when all the tourists have made the 45-minute ferry ride back to the mainland. It's how they like it — the slow island life is attractive to many.

But in 2017, Hurricane Ophelia, a category three storm, hit Ireland, flooding streets and stranding people in their homes for days. Fifty-four people died; it was Ireland's deadliest storm in 50 years. Then, a year later, Winter Storm Emma hit Ireland, with snowfall up to 22 inches, again leaving people stranded in their homes for a week.

During both events, it was impossible for people to visit their doctors or refill their medications, a problem even worse for those living in places like the Aran Islands, and especially acute for those patients living with a chronic and potentially deadly disease like diabetes.

A year before Ophelia arrived on Ireland's shores, unmanned aerial vehicles (UAVs) — also known as drones — operated by a company called Zipline had begun successfully delivering blood products in Rwanda. However, in the Western World, drones are typically only used as recreational tools, for racing or photography, but their use transporting medical supplies has only been documented here and there, in remote or underdeveloped areas like the East African jungles or South Pacific islands.

An international medical team figured that this same technology could be deployed in Western, heavily regulated airspace, initially to rural places like the Aran Islands, a remote region that had suffered a devastating one-two punch. The team, led by Derek O'Keeffe, MD, PhD, a consultant endocrinologist at National University of Ireland, Galway, and Spyridoula Maraka, MD, MS, an

Away



*How
Drones
Could
Revolutionize
Insulin
Delivery*

The international, multidisciplinary team, pictured left to right: Steven Flynn of Skytango, Derek O’Keeffe, Wayne Floyd of Survey Drone Ireland, Santiago Montenegro of Wingcopter, Marc Daly of Vodafone Ireland, and Spyridoula Maraka.



endocrinologist with the University of Arkansas for Medical Sciences and the Central Arkansas Veterans Healthcare System, Little Rock, wanted to find a solution for future disasters when people with diabetes in remote regions may be stranded for days without their lifesaving diabetes medicines. “An example of how detrimental this could be is that patients with type 1 diabetes who do not use their insulin for more than a day can slip into diabetic ketoacidosis, a life-threatening condition,” Maraka says.

“We now have the drone technology and protocols in place to deliver diabetes medications and supplies in regulated airspace in an actual disaster if needed,” O’Keeffe says. “This is a milestone in improving patient care.”

“The Seagull Has Landed!”

But this wasn’t something that could just be done with the same ease as a teenager taking his or her drone to the park to fly around for an afternoon. This was a complex project that required a team of experts representing various fields — physicians,

pharmacists, aviators, telecoms specialists — working together to make sure the 32-minute roundtrip test flight was a successful mission.

Maraka’s main role was to identify and address the medical and regulatory issues related to healthcare delivery. The team couldn’t simply load insulin in the drone for delivery. A physician prescribed the medication and a pharmacist dispensed the insulin, ensuring compliance with the Medication Dispensing Legislation.

“Then due to the Medication Transportation Cold Chain Legislation, we needed to ensure that the medications were appropriately packaged and transported in the right temperature and provide data that vibration during the flight would not negatively impact the quality of the medications,” Maraka says. “These are necessary ‘hurdles’ that enable us to maintain the quality of healthcare delivery no matter which mode we choose. The advantage for future projects is that we now know all the steps we need to take, and we can streamline the process.”

“There are multiple opportunities for medical drone delivery, which could be life-saving during sentinel events such as pandemics like the one we all experience today. **Medications and blood samples are an ideal payload cargo for drones due to their low weight and high value.**”

— SPYRIDOULA MARAKA, MD, MS, ENDOCRINOLOGIST, UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES; CENTRAL ARKANSAS VETERANS HEALTHCARE SYSTEM, LITTLE ROCK, ARK.

It took one year from conceiving this mission to the maiden flight on Sept. 13, 2019. The drone — provided by a German company called Wingcopter and nicknamed “The Seagull” because it had a large white wingspan and was doing a lot of coastal flying — flew beyond the visual line of sight during commercial flight operations in regulated airspace. “After a year of planning, it launched from the Irish mainland and flew across the Atlantic Ocean and when it landed on the Aran Islands, we all smiled and said over the comms, ‘The Seagull has landed!’” O’Keeffe says.

The international team had completed the world’s first documented drone delivery of insulin to a patient living in a remote community. The drone also returned with a blood sample collected from the patient for monitoring blood glucose control (HbA1c). “We wanted to find a way to monitor glycemic control remotely,” Maraka says. “It was the full circle of care, which has not been done by drone before.

“Each person had a specific expertise which contributed to the success of the Diabetes Drone Mission,” she continues. “We had to ensure safety and redundancy in all flight operations in order to obtain airspace regulatory approval. Excellence in knowledge, skills, and communication across the team were essential to navigate this process.”

Mission accomplished. But what now?

An Invisible Storm

The beginning of 2020 has been four months of turmoil, with a global pandemic forcing people to remain indoors, cut off from the outside world by the invisible storm of a viral infection. Physicians are resorting to telemedicine more as state and local governments issue stay-at-home orders. This whole new world could be the perfect setting for emerging technology like drone delivery of medication.

“There are multiple opportunities for medical drone delivery, which could be life-saving during sentinel events such as pandemics like the one we all experience today,” Maraka says. “Medications and blood samples are an ideal payload cargo for drones due to their low weight and high value. We showed that drones could, for example, deliver medications to remote communities and bring blood samples back to a clinic for patient monitoring. However, the key point here is that this was a proof-of-concept research mission, and we have used the findings to continue the collaboration with our partners to contribute to the future of medical drone deliveries.”

Indeed, there is still much to be done before the skies are abuzz with drones. In order to have regular drone flight operations, there exists a lot of challenges and opportunities for innovators across the technology, regulatory, and business domains, O’Keeffe says.



AT A GLANCE

- ▶ Patients with chronic conditions like diabetes who live in remote areas can be cut off from life-saving medications should a disaster like a storm strike.
- ▶ Drones have been used to deliver supplies and medications to people in underdeveloped areas, so a team of researchers began a complex mission to deliver insulin to a patient on an island off the coast of Ireland.
- ▶ This milestone achievement could clear the way for a future in which drones delivering medications is commonplace.



WHAT IS A DRONE?

Unmanned aerial vehicles — also known as drones — were military tools for decades, initially used for target practice and described in a 1991 article in *Airpower Journal* as machines that should generally perform missions “characterized by three Ds: dull, dirty, and dangerous.”

Eventually, their value was recognized across a wide variety of applications, professional, and recreational, from police surveillance to racing and photography. Civilian drones now outnumber military drones, and with companies like Amazon and UPS deploying them to deliver products, that number should continue to grow.

Wingcopter — the German company that provided The Seagull — uses drones that can take off vertically and feature a tilt-rotor mechanism that allows for transition between hovering and forward flight, which made it a suitable choice to smoothly navigate harsh weather conditions, a necessary ability when delivering insulin during a storm.

As drones become more ubiquitous, especially in the medical field, we’re sure to be reading more about missions they’ve undertaken that were definitely dangerous, sometimes dirty, but never dull.

“At a minimum, there needs to be increased drone flight testing, to ensure that drones used in commercial operations have the correct flight certification (like normal airplanes) from the statutory agencies whose airspace they fly in (e.g., FAA),” he says. “This comprehensive flight testing of specific drone models will enable protocols and countermeasures to be developed (e.g., parachutes) for safe operations. In addition, a lot of research and development work is underway to establish an unmanned

“ We need to think about our patients’ current and future needs, to continue to innovate, and to be open to interdisciplinary collaboration to achieve success.”

— DEREK O’KEEFFE, MD, PHD, CONSULTANT ENDOCRINOLOGIST, NATIONAL UNIVERSITY OF IRELAND, GALWAY, GALWAY, IRELAND

aircraft traffic management ecosystem to allow beyond visual line-of-sight drone operations (as we have for the traditional airplane Air Traffic Management systems in place around the world). Finally, we need to have societal acceptance of ‘drone corridors,’ which will have to become part of our environment where drone traffic will regularly use, like major road networks.”

For now, O’Keeffe, Maraka, and everyone who worked on the project see a bright future for this technology. The maiden flight of The Seagull in regulated airspace was a towering achievement by itself. O’Keeffe says that next he sees drones first being used in emergencies, then in rural areas, then in light urban areas, and, ultimately, in dense urban areas. Wingcopter has teamed up with UPS to “extend the speed and reach of package delivery” and help move the industry forward. “We need to think about our patients’ current and future needs, to continue to innovate, and to be open to interdisciplinary collaboration to achieve success,” O’Keeffe says.

“Drone delivery can help us connect with our patient communities, especially when usual channels of healthcare delivery are disrupted,” Maraka says. ^{EN}

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE THE PROFILE OF INCOMING ENDOCRINE SOCIETY PRESIDENT GARY D. HAMMER, MD, PHD, IN THE APRIL ISSUE.

Supreme Court Ruling Protects the LGBTQ+ Community

Endocrine Society Provided Scientific Background to Court



In a landmark ruling, the Supreme Court of the United States found that gay and transgender individuals cannot be discriminated against in the workplace on the basis of sex.

The 6 – 3 decision stated that Title VII of the Civil Rights Act of 1964, which prohibits discrimination “because of sex,” includes gay and transgender employees. The ruling came after consideration of three cases, including *Harris Funeral Homes v Equal Employment Opportunity Commission*, which was brought by Aimee Stephens, a transgender employee of Harris Funeral Homes, who was fired after she started dressing consistent with her gender identity rather than her gender at birth.

The Endocrine Society participated in this case by submitting an amicus brief in the case of *Harris v EEOC*. The “friend of the court” brief provided scientific background and context regarding transgender health for the court. Our clinical practice guideline, *Endocrine Treatment of Gender Dysphoric/Gender Incongruent Persons*, was cited in the brief and relied upon by the majority.

This ruling is expected to have far-reaching effects on regulations finalized and under consideration by the Trump administration, including the recent rollback of protection from discrimination in the healthcare system for transgender individuals (Affordable Care Act, Section 1557) that was finalized on June 12, 2020.

White House Announces Part D Senior Savings Model to Reduce Cost of Insulin

*Endocrine Society
Continues to Advocate
for Policies to Address
Drug Prices*

On May 26, the White House announced that 88 insurance companies and all three big insulin manufacturers would take part in a new payment pilot known as the Medicare Part D Senior Savings Model that will cap Medicare beneficiary insulin costs at \$35 a month. The pilot will make these plans available during open enrollment this fall, and participation will be voluntary for insurance companies and drug makers. The Centers for Medicare and Medicaid Services (CMS) says over 1,750 standalone Part D prescription drug plans and Medicare Advantage plans are set to participate. All three insulin manufacturers will also participate in the pilot, allowing seniors to access any of the insulin brands by selecting a Part D plan that covers their brand of choice.

President Donald Trump spoke about the announcement during a Rose Garden speech. Prior to the event, CMS reached out to the Endocrine Society and asked us to share examples of Medicare beneficiaries who do not have access to affordable insulin. We were able to provide several examples, one used by the CMS administrator in her remarks about why addressing the high cost of insulin is necessary.

While House Republicans celebrated the announcement, others noted that the program was modest at best and described it as a small change to Medicare that will likely only have a limited discount on insulin for a small subset of the 60 million seniors with Medicare coverage.



We continue to advocate that Congress and the administration address the high cost of insulin and welcome opportunities to continue to raise the visibility of the problem. We will continue to discuss with industry and policy makers ways to increase access to affordable insulin that will benefit Medicare beneficiaries and other vulnerable patient groups like young adults who roll off their parents' insurance. We also have included the need to eliminate patient cost sharing for insulin in our priorities for COVID-19 relief legislation.

Endocrine Society Congratulates New NIEHS Director



On June 11, the National Institutes of Health (NIH) announced the appointment of Rick Woychik, PhD, as director of the National Institute of Environmental Health Sciences (NIEHS) and National Toxicology Program (NTP).

Woychik has been serving as the acting director of the NIEHS since October 2019, following the retirement of the previous director, Linda Birnbaum, PhD. As director, Woychik oversees the NIEHS' portfolio of research and implements funding strategies to explore the links between environmental exposures and health.

Woychik is an established scientist at the NIEHS, having served as deputy director since 2011 while also leading a research lab focused on understanding the role of epigenomic transcriptional regulation in response to environmental exposures. He brings a wealth of expertise and knowledge to the position of director; his previous experience includes roles as CEO of the Jackson Laboratory, chief scientific officer at Lynx Therapeutics, and vice chair for research and professor in the Department of Pediatrics at Case Western Reserve University.

The Endocrine Society has a longstanding relationship with the NIEHS, given our members' research expertise and clinical interest in how endocrine-disrupting chemicals (EDCs) impact human and ecological health. As co-chair of the Friends of NIEHS, a coalition that works to increase congressional support for the NIEHS, we previously worked with Woychik on a congressional briefing on environmental exposures and autoimmune disease.

The Endocrine Society congratulates Woychik on his appointment, and we look forward to working with him in his new role.


Endocrine Society Argues for Inclusion of EDCs in EU Chemicals Strategy

In May, the European Commission released a roadmap outlining plans for a Chemicals Strategy for Sustainability. The Chemicals Strategy, which will form a component of the European Green Deal, seeks to “reduce the risks associated with producing and using chemicals” by improving the European Union (EU) regulatory process and strengthening the regulatory framework for harmful chemicals.

The Endocrine Society's EU Endocrine-Disrupting Chemicals (EDC) Task Force submitted comments to the Roadmap to ensure that the Chemicals Strategy advances our priorities and improves EU regulation of chemicals that interfere with endocrine systems. Our members stressed the need for ambitious legislative measures to address common EDC

exposures that are consistent with the latest endocrine science. We also called for the identification of gaps in testing strategies and an accelerated and more coherent identification process for EDCs.

As policy makers develop and revise the Chemicals Strategy and other components of the EU Green Deal, the Endocrine Society will continue to ensure that EDCs are prioritized due to the ongoing harm that they cause to humans and the environment.

For the latest news on EDCs in the EU, we encourage members to check out our new online newsletter on the Endocrine Society's EDC webpage at endocrine.org/edc. 



Q&A: Carol Lange, PhD

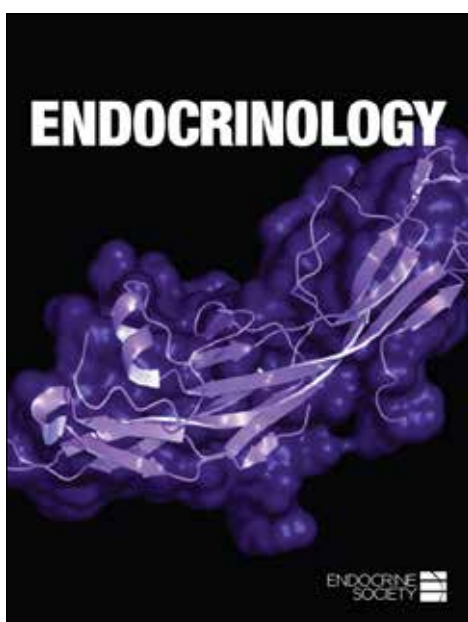
Carol Lange, PhD, has been an active member of the Endocrine Society since she attended her very first **ENDO** in 1996 where she “found her people.” Over 25 years later, she has taken the reigns of the Society’s *Endocrinology* journal this month and tells *Endocrine News* about her remarkable journey, her advice to new members, and what she hopes to bring to the table as editor-in-chief.

Good news is both welcomed and in high demand these days, and for Carol A. Lange, PhD, professor in the Departments of Medicine and Pharmacology at the University of Minnesota Masonic Cancer Center, the good news came in a double dose this year.

Lange was recognized as a 2020 Endocrine Society Laureate Award recipient for her distinguished service to the Society and the field of endocrinology. An active member since her postdoctoral fellow days in the Kate Horowitz Laboratory in 1996, Lange has attended every **ENDO** since chairing sessions, reviewing abstracts, judging posters, leading Meet-the-Professor sessions, and serving on the Annual Meeting Steering Committee from 2003 to 2006. She’s also served on the Society’s Scientific Meetings and Educational Programs Committee, the Publications Core Committee, the Laureate Awards Committee, and is currently on the Nominating Committee.

Through the years, Lange was instrumental in planning the Basic Scientist Track of the Society’s first annual Trainee Day Career Development Workshop in 2007, which is now an **ENDO** mainstay. She served as the Society’s Basic Science Chair in 2008 and has been a mentor for the Endocrine Society Career Day and a host of the Nuclear Receptors Reception. According to her 2020 Laureate Award article in the March *Endocrine News*, Lange’s motto continues to be “never say no to **ENDO!**”

BY GLENDA FAUNTLEROY SHAW



Then in April, she was appointed as the new editor-in-chief of *Endocrinology*, the Society's flagship basic science journal. "I'm honored to join *Endocrinology*'s mission to be the leading source of emerging hormone science and to share this knowledge in a meaningful way with scientists, clinicians, and the public," Lange says, adding that she's dedicated her entire career to understanding the molecular and biochemical underpinnings of hormone action, and looks forward to continuing the journal's commitment to publishing "fascinating original research and molecular mechanistic studies on endocrine pathways, cells, systems, and diseases."

Lange also has the distinction of being the Endocrine Society's first female editor-in-chief when she oversaw *Hormones & Cancer* in 2011.

Endocrine News spoke with Lange to learn how these accomplishments will further impact her service to the specialty.

Endocrine News: We congratulate you on taking over the helm as editor-in-chief of *Endocrinology* on July 1. What do you see as the greatest opportunities and challenges for your new role?

Carol Lange: On the one hand, I want to uphold the strong legacy of this long-lived Endocrine Society journal. I realize I have a tough act to follow in the exceptional leadership of our previous editor-in-chief, Dr. Teresa Woodruff. On the other hand, I am excited to add something completely new to *Endocrinology*. My goal is to attract the very best basic molecular, biochemical, genetic, epigenetic, and cell biology sciences to *Endocrinology*, including areas not traditionally thought of as purely "endocrinology." For example, the endocrinology of neuroscience and aging/longevity, mitochondrial biology, metabolism, and nutrition, as well as tissue regeneration and stem cell biology, to name a few. My charge is to strengthen our basic science base and help integrate this effort with the Endocrine Society annual meeting programming by collaboration with Endocrine Society leadership across the science and educational missions.

EN: There is news that manuscript submissions are on the rise for many science journals as researchers have been shuttered from their laboratories due to COVID-19 and are devoting more time to writing. Is this a similar trend for *Endocrinology*?

Lange: Yes! In fact, we have seen an approximate 60% increase in submissions beginning in April relative to previous

“ I am excited to add something completely new to *Endocrinology*. My goal is to attract the very best basic molecular, biochemical, genetic, epigenetic, and cell biology sciences to *Endocrinology*, including areas not traditionally thought of as purely “endocrinology.”

“The global COVID-19 crisis has reaffirmed my belief in the power of teamwork, creative thinking, inclusivity, and a positive ‘can-do’ attitude. Thus, my editorial team and I are standing by to consider all new submissions this year as fast-tracked for rapid review and publication.”

months. I believe scientists have had more time to write while sheltering at home. I wish to help meet the needs of our junior faculty and trainees during these distressing times. The global COVID-19 crisis has reaffirmed my belief in the power of teamwork, creative thinking, inclusivity, and a positive “can-do” attitude. Thus, my editorial team and I are standing by to consider all new submissions this year as fast-tracked for rapid review and publication. As do all Endocrine Society journals, *Endocrinology* operates on a continuous online publishing model, meaning accepted articles go online for discoverability and citation as soon as they have cleared peer review. We will prioritize manuscripts with trainee authorship and/or from junior faculty laboratories.

EN: The second great honor of the year was your “Distinguished Service” award. What did the recognition mean to you?

Lange: Mostly, I am just really grateful for this award. It serves as an acknowledgement of everything I have been passionate about around advocating for basic scientists as well as fostering the next generation of scientists.

EN: You have been an active member with the Society since your training as a postdoc fellow in 1996. Over the years since, you’ve attended every annual ENDO meeting and served the Society on several committees and leadership roles. What has motivated you to become such an integral part of the Society community?

Lange: It has been extremely rewarding to me both professionally and personally. After my very first ENDO meeting (San Francisco, 1996) I remember telling my parents

that I had “found my people.” Being at the meeting in a new city was energizing, and I had so much fun networking and socializing with the people (members) in my field of nuclear receptor science.

EN: What would be your advice to a postdoc fellow today to encourage them to become more active in the Society?

Lange: Go to the meeting every single year. Sit in the front rows and near a microphone during the symposia you attend. Ask questions, be seen, meet people, and interact as much as possible in all the venues. Smile and have fun. In other words, dive in, find your people, and have a blast! Also, be sure to stay an extra day or two to visit the city and enjoy sightseeing while you clear your head, energize, and plan for your next steps once home and back in the lab. ^{EN}

Endocrinology is a global leader in hormone science and research with more than 43,000 citations and 1.9 million article downloads a year. With continuous online-only publication and monthly issues, the first eight pages free for members, no color charges, and article-level Open Access options, Endocrinology accepts format-neutral manuscript submissions and pre-submission inquiries.

— FAUNTLEROY SHAW IS A FREELANCE WRITER BASED IN CARMEL, IND. SHE IS A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS*.



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DIABETES IN CHILDREN



TYPE 1 DIABETES (T1D)

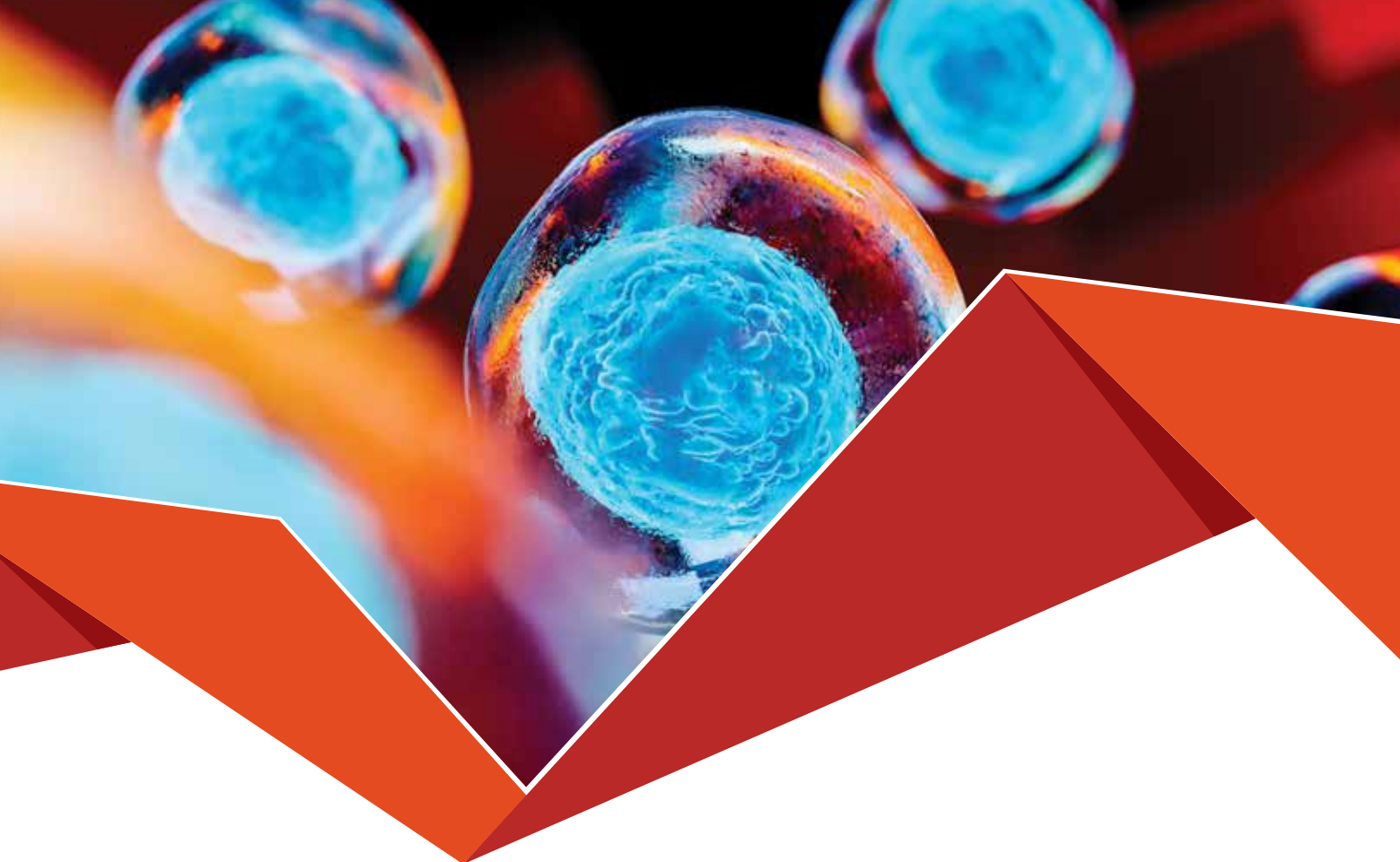
TYPE 2 DIABETES (T2D)

What is T1D and T2D?	What is T1D and T2D?
 <p>In T1D, your child's body attacks cells in the pancreas and prevents it from making insulin.</p>	 <p>In T2D, your child can produce insulin, but their body is unable to use it effectively.</p>
Cause	Cause
 <p>T1D is an autoimmune condition which means the body attacks itself by preventing the production of insulin. The exact reason why this develops is unknown.</p>	 <p>T2D is a chronic disease, which can be prevented. Factors such as pediatric obesity, poor nutrition, lack of exercise, or family health history can increase the risk for developing T2D.</p>
Symptoms	Symptoms
 <p>First signs of T1D may be similar to other conditions. Common symptoms include: increased thirst, frequent urination, unintentional weight loss, fatigue, irritability, and sweet-smelling breath.</p>	 <p>Some children with T2D may have no or very few symptoms. Noticeable symptoms are increased hunger, blurred vision, or patches of dark, velvety skin between the fingers or toes, as well as the back of the neck.</p>
Diagnosis	Diagnosis
 <p>Random blood sugar test Fasting blood sugar test A1C test Diabetes antibody tests</p>	 <p>Random blood sugar test Fasting blood sugar test A1C test Oral glucose tolerance test</p>
Potential Complications	Potential Complications
 <p>If left untreated, your child may experience damage to their kidneys, heart and blood vessels, eyes, and nerves. Keeping your child's blood sugar in the target range can help reduce the risk of complications.</p>	 <p>Managing blood glucose is the best way to prevent complications. Common complications include high blood pressure, heart disease, and high cholesterol.</p>
Treatment Options	Treatment Options
 <p>Your child can take insulin to treat T1D. Be sure to frequently monitor your child's blood sugar levels with glucose meters, keeping track of their carbohydrate intake, and adjusting insulin doses based on their diet, activities, and illness.</p>	 <p>You may be able to help your child treat T2D with only exercise and diet. Your child may also need to take medication to control blood sugar levels. A health care provider will be able to give you the best treatment options for your child.</p>
Supporting Your Child	Supporting Your Child
 <p>Educate family members about T1D and to create a support system for your child. This includes understanding how to check and read their blood sugar levels, how to count insulin doses, and how to treat low blood sugar.</p>	 <p>Family support is a critical factor to your child, encourage them talk freely about concerns, follow a meal plan, exercise often, and take medications as prescribed.</p>

Patients Have Questions. We Have Answers.

The Hormone Health Network is your trusted source for endocrine patient education. Our free, online resources are available at hormone.org.

Reviewers: Ana Creo, MD *Mayo Clinic*; Natalia Genere, MD *Mayo Clinic*



ENDO2020 ABSTRACTS SHOWCASING THE LATEST SCIENTIFIC AND MEDICAL RESEARCH

Although ENDO 2020 was canceled because of the COVID-19 pandemic, we are pleased to announce the publication of more than 2,300 accepted abstracts in a special supplemental issue of the Open Access *Journal of the Endocrine Society* (JES).

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