

UK Finds COVID Vaccines Have Decreased Number Of Hospitalizations

The first UK studies regarding Britain's mass vaccinations show strong support in that the vaccines have been effective, since numbers clearly show that the vaccines reduce the rate of Covid-related hospital admissions and can be reducing the spread of the virus.

The studies found that just a single dose of the AstraZeneca or the Pfizer vaccine may be able to avert majority of the coronavirus hospitalizations, though more research over time will prove this.

AstraZeneca's vaccine showed the strongest amount of effectiveness and was also the first of its kind to emerge outside of clinical trials.

More studies on the Pfizer shot proclaimed evidence that just one shot can help reduce the spread of the virus, tackling symptomatic and asymptomatic cases of the disease.

The U.K.'s study findings went beyond the studies out of Israel, which recently sparked interest when they reported the Pfizer vaccine and BioNTech showed highly effective protection from the virus in the real-world as well as studies. Britain is not only the largest nation inoculating its people but the first to authorize and being using both vaccines.

The vaccines showed they were effective against the more infectious coronavirus variant that began in the UK, according to the studies released Monday.

"Both of these are working spectacularly well," said Aziz Sheikh, a professor at the University of Edinburgh who helped

run a study of Scottish vaccinations.

There were still a few cautionary things in the findings, which the government scientists warned that more need to be injected in order to prevent cases from spreading into vulnerable, vaccinated groups.

In order to ensure others can get their first doses and be partially protected, the UK has delayed giving people second doses of Pfizer and AstraZeneca until up to three months after their first doses.

Although hospitalizations have significantly reduced, findings so suggest that people are more protected with a second dose. It's unclear how long protection from the first dose lasts.

"We now need to understand how long lasting this protection is for one dose of the vaccine," said Arne Akbar, a professor at University College London and the president of the British Society for Immunology.

19,000 health workers who received the vaccine were examined during the new study. Scientists were able to keep an uncommonly close watch on whether or not the subjects had been infected: They were tested regularly for the virus, whether or not they showed symptoms, allowing the scientists to detect asymptomatic cases.

The Pfizer vaccine lessened the risk of becoming infected by nearly 70 percent. This rose to 85 percent after two doses, scientists said, though they cautioned that the low numbers of cases made it difficult to reach precise estimates.

The aging population was found to be protected highly by Pfizer, who were not as well represented in clinical trials and do not always mount strong responses to vaccines. In people over 80 in England, a separate study showed that a single dose was 57 percent effective in preventing symptomatic Covid-19 cases. Protection rose to 88 percent after a second

dose.

1.3 million doses of Covid-19 vaccines per day are administered on average. Almost 30 million people have received at least one dose, and about 7 million have been fully vaccinated. H

The U.S. is far behind schedule compared to several other countries in getting its population vaccinated.

In the near future, travel may require digital documentation showing that passengers have been vaccinated or tested for the coronavirus. Canada has already done so, among others.

The world looks forward to ending this pandemic with this vaccine's success.

7 Bites Of News And Commentary From The Endocrinology World

A quick list of facts about what's happening in Endocrinology's neck-of-the-woods.

The Philadelphia Inquirer reported that healthcare providers are watching carefully for new cases of diabetes when a November study found that 15% of hospitalized COVID-19 patients developed diabetes.

A modified-release hydrocortisone therapy helped to improve morning and early afternoon biochemical control for adults with congenital adrenal hyperplasia in a phase III study. However, the trial missed its primary endpoint of change in

24-hour standard deviation score of androgen precursor 17-hydroxyprogesterone. (From the Journal of Clinical Endocrinology & Metabolism)

JAMA Network Open recently shared a study that found that Medicare Advantage patients with type 2 diabetes were less likely than commercially insured patients of a similar age to be treated with newer classes.

Insulin remained stable even after exposure to varying temperatures, according to a new study. "These results can serve as a basis for changing diabetes management practices in low-resource settings, since patients won't have to go to hospital every day for their insulin injections," said study co-author Philippa Boule, MBBS, of Médecins Sans Frontières Switzerland in a statement. (PLOS One)

Reported in The Lancet Diabetes & Endocrinology: an 18-year study in Britain found cancer to be the leading cause of death among those with type 1 or type 2 diabetes.

Over 25% of patients on dialysis died from COVID-19 in a recent Canadian study of over 12,501 patients. (CMAJ)

Crinetics Pharmaceuticals announced a phase I study is now underway for an investigational, oral adrenocorticotrophic hormone antagonist, CRN04894, aimed at the treatment of congenital adrenal hyperplasia and Cushing's disease.

Study finds Amyloid Blood Tests for May Cut Need for

PET in Half

Study authors suggest that the positive result of using the blood test methods may lead to faster clinical trial recruitment.

A recent study by authors Ashvini Keshavan, Josef Pannee, et al. aimed to evaluate population-based blood screening for preclinical Alzheimer's disease in a British birth cohort at age 70.

Alzheimer's disease affects more than 5 million Americans and is characterized by normal cognition and abnormal brain biomarkers, to mild cognitive impairment and then clinically apparent dementia.

"Using either [liquid chromatography-mass spectrometry] method to screen before PET scanning has the potential to yield significant savings for clinical trial recruitment, affording further reductions in the required number of PET scans compared to the number of scans needed without pre-screening or when using age, sex and APOE4 carrier status for screening," Schott and team wrote.

Consistent with prior studies, the researchers also noted that most of the discordant cases were "plasma-positive, PET-negative," and this persisted despite changing the PET positivity cutoff. Similar to CSF results, the data suggested that plasma amyloid-beta may become abnormal before a threshold for cortical amyloid-beta positivity is reached. If PET can be eliminated, it would be most beneficial as PET is costly, relatively inaccessible, and involves ionizing radiation.

Apart from affordability, plasma screening might enable screening of more diverse populations at scale and reduce screen failures, leading to faster clinical trial recruitment.

Addressing the issue of false positives and the possibility that amyloid-positive individuals might never develop cognitive symptoms in their lifetime, the researchers stated that “any use of plasma biomarker-based screening will require clear protocols for counselling and communicating plasma test results to prospective participants, including that a positive result is likely to require confirmation with another more definitive modality (PET or CSF).”

“Our study strengthens a growing body of evidence that plasma screening can reduce the numbers of amyloid PET scans required to identify amyloid- β -positive individuals, for recruitment to clinical trials or ultimately for giving anti-amyloid therapies, and suggests that this may be feasible in a preclinical cohort,” they concluded.

These innovations can change the future of research for Alzheimer’s studies.

PET Scans Help Decisions In ER And Breast Cancer

A study has found 100% accuracy for subsequent outcomes with hormonal therapy

A small prospective study showed that PET imaging of the progesterone receptor (PgR) response to an estradiol challenge the usual predicted breast cancer response to hormonal therapy.

PET with a progestin-analog tracer showed increased PgR levels, indicative of functional estrogen receptors (ERs), in 28 postmenopausal women receiving endocrine therapy for

metastatic or recurrent breast cancer, and all 28 benefited from treatment. In contrast, 15 patients without an increase in PgR levels did not benefit, representing 100% sensitivity and specificity. *Nature Communications* reported the 28 women with endocrine-responsive tumors lived significantly longer than did the women with nonresponsive tumors.

Farrokh Dehdashti, MD, of Washington University in St. Louis said the results suggest that PET imaging with the radiolabeled progestin-receptor analog could have a role in treatment selection and monitoring, said

“The fact that you can actually assess the [ER] function in the body was amazing,” she told MedPage Today. “It’s something that is very difficult to do. I’m really hopeful we can move to the next step and do a multicenter trial, if we can secure funding.”

For breast cancer, PET assessment of ER function should be applicable to all types of hormonal therapy. But the effects branch beyond just breast, Dehdashti says the strategy might also help guide therapeutic decision-making for other types of hormonally driven cancers.

Unfortunately, the 70%-80% of breast cancers are hormone-receptor (HR) positive, but as many as half of HR-positive tumors do not respond to endocrine therapy. Conventional testing for ER status of breast cancers is an imperfect predictor of tumor response to endocrine therapy, Dehdashti and colleagues noted.

Dehdashti and colleagues developed a PgR-binding progestin-analog radiotracer (21-[18F]fluoro furanyl norprogesterone, FFNP). In a preliminary evaluation, they observed significantly greater FFNP uptake in PgR-positive versus PgR-negative breast cancers with PET imaging. Their finding? A “rapid and robust” increase in FFNP uptake after estrogen treatment in a preclinical model of breast cancer, findings

that were replicated in studies involving human breast cancer xenografts.

The accumulation of favorable experimental results led to a phase II evaluation of PET with FFNP in postmenopausal breast cancer. Investigators at Washington University's Siteman Cancer Center studied 43 women with locally advanced, locally recurrent, or metastatic HR-positive breast cancer scheduled to be treated with hormonal agents.

Hormonal treatment during the study included tamoxifen, aromatase inhibitors, fulvestrant, and gonadotropin-releasing hormone agonists, and most of them received a CDK4/6 inhibitor.

Baseline PET studies showed no difference in FFNP uptake prior (standardized uptake value, SUV) to estradiol challenge in the 28 patients who had stable disease or objective response to endocrine therapy and the 15 who did not benefit from treatment. Following the 1-day estradiol challenge, FFNP increased by an average of 25.4% in the 28 patients who subsequently benefited from treatment but decreased by 0.7% in the 15 women who did not benefit ($P < 0.0001$). The percentage change in FFNP uptake did not vary significantly according to prior therapy.

The 28 patients who benefited from hormonal therapy had at least a 7% increase in SUV for FFNP (responders), whereas none of the 15 nonresponding patients had as much as a 7% increase in SUV. The 7% threshold was associated with significantly longer overall survival (OS). After a median follow-up of 27.1 months, the estimated median OS was 22.6 months in patients who did not respond, but was not yet reached in responding patients ($P < 0.0001$). Baseline FFNP uptake did not have a significant association with OS.

Ahead of the goal of a phase III trial in breast cancer, the study's author said the PET imaging strategy should interest

oncologists who treat prostate cancer. Since androgen-receptor imaging agents already exist, so clinical interest by the genitourinary oncology community might provide impetus for more study.

Telemedicine In ICU Saves Lives– Tele-Intensivist Care Linked To 18% Lower Mortality Over A Decade

A study recently found that in facilities where 24/7 intensivist care was not available, outcomes for patients were better when care was delivered by “tele-intensivists” compared to traditional care models.

Within the Cleveland Clinic Health System, patients treated by ICU telemedicine at one of their hospitals were found 18% less likely to die and were released from the hospital an average of 2 days sooner than patients who received traditional ICU care, without round-the-clock on-site intensivist care.

The study included around 154,000 ICU patients and the findings were presented at the Society of Critical Care Medicine’s virtual 50th Critical Care Congress.

The COVID-19 pandemic put the spotlight on ICU Telemedicine, noted Cleveland Clinic intensivist Chiedozie Udeh, MD, who presented the findings.

“In an ideal world, patients would have an intensivist at the bedside 24/7, but the reality is that even if we had all of

the money in the world, we don't have enough trained professionals to do the job," Udeh said.

Thanks to technological advancements, the intensivist monitoring a patient via telemedicine has access to monitors, medical records and test results and can do everything that an on-site clinician can do, with the exception of having physical contact with the patient, Udeh said.

The intensivist stays stationed at a remote command center and monitors a dashboard of patients at different hospitals, using real-time audio-visual, two-way communication to interact with bedside nurses.

Software can help identify patients who are quickly deteriorating and need immediate care.

In an interview with *MedPage Today*, Udeh said ICU telemedicine, now used in roughly 20% of U.S. hospitals, offers an intermediate treatment strategy between 24/7 intensivist care, which is rare outside large academic centers, and the more traditional ICU care model, in which an intensivist may be on site at certain times of the day, but not others.

But why is ICU-telemonitoring leading to fewer deaths? Udeh says more research is needed in order to uncover this.

"If I had to speculate, I would imagine this would probably be due to patients' receiving more timely needed interventions," he said.

The Cleveland Clinic Health System installed an ICU telemedicine program in 2014 to support ICUs within the system.

The study performed by the clinic measured 20-day mortality among the ICU's patients treated at the hospital from 2010 to 2019.

During the period, registry data recorded just over 642,000 patients treated in the various ICUs. The current analysis covered 153,987 patients with available data on predicted mortality, measured through APACHE IV scores.

During the decade of follow-up, 108,482 patients included in the study (70%) received ICU telemedicine care during hours when an intensivist was not on-site.

Patients in the ICU telemedicine group were slightly older on average (68.9 years vs 66.7 years), and were more likely to be non-white and to have pulmonary ICU diagnoses, ICU admission for cardiac arrest, or emergency and/or weekend admission.

The main study found the following:

- 30-day mortality among the telemedicine patients was 5.5% compared to 6.9% in the standard care group ($P < 0.0001$)
- 30-day mortality per 1,000 patient days was 2.45 in the ICU group and 3.18 in the non-ICU group ($P < 0.0001$).
- Variables associated with increased 30-day mortality included non-white race, a diagnosis of sepsis or cardiac arrest, emergency admittance and weekend admittance.
- ICU length of stay was significantly shorter in the ICU telemedicine group, as was total hospital stay

“We think these findings provide further reassurance about the value of ICU telemedicine, particularly in light of our collective experience in 2020,” Udeh said. “With the COVID-19 pandemic, telemedicine in general assumed greater prominence.”

Udeh told *MedPage Today* that ICU telemedicine can benefit both large hospital systems and smaller, individual hospitals.

“Smaller hospitals may have no intensivist at all or they may have only one,” he said. One recent survey, he said, found that about half of U.S. hospitals do not have an intensivist

on staff.

An Open Letter To Physicians: Looking After Your Own Heart Health During the COVID Pandemic

**By Lori Sedrak, D.O – Texas Radiology
Associates**

February is Heart Awareness month. Let's take a moment and have a serious talk. Let's talk about Valentine's Day and have a heart-to-heart talk about your heart health and how COVID-19 burnout impacts your health. Remember to love your heart before showering others with love on Valentine's Day.

Physician burnout has always been present, but the COVID-19 pandemic has exacerbated burnout among physicians and other healthcare workers.



Dr. Lori Sedrak

A recent article published in the *Annals of Internal Medicine* highlighted physician burnout in the COVID-19 pandemic world. We are entering the second year of the COVID pandemic. While there are now two approved vaccines that give us hope that an end to the pandemic is achievable, we have a long road ahead of us.

We are reminded of the advice from Randy Pausch in *The Last Lecture* – “Put on your own oxygen mask before assisting others.” Simply put, we can’t look after others if we don’t take care of ourselves first. Physicians must be healthy – physically, mentally, and emotionally.

How Serious is the Problem

While every community is different, the challenges are similar for physicians everywhere.

- Adequate supplies of PPE
- Work schedules versus the high patient workload
- Social stigma from the community
- Frustration over lack of treatment options
- Feelings of helplessness
- Isolation from family

Surges in patient loads and the unpredictability of staffing

continue to exacerbate hospital staff. As new variants emerge, we may be asking ourselves, “How much more?”

Medscape recently released their *National Physician Burnout and Suicide Report 2021*. Here’s what the report shows:

- Over 40% of physicians report burnout, specifically adversely affecting their happiness as a physician.
- Burnout is higher among female physicians – probably, in part, due to their family duties at home, especially if they have school-age children at home.
- 21% of physicians report that their burnout didn’t occur until the pandemic.
- Only 49% of physicians now feel happy compared to 69% in 2019.

Physicians should not feel guilty over the need for self-care. Self-care is neither a sign of weakness nor self-serving. Self-care is essential – self-care is the responsible and ethical response to continue to provide the highest-quality care for our patients.

We must remember that even physicians who are not on the front lines have experienced increased stress too. Surgeries canceled and diagnostic images delayed continue to frustrate physicians caring for patients suffering from non-COVID medical emergencies.

How can we begin to take care of ourselves?

One of the first steps that physicians must take is to acknowledge that physicians must practice self-compassion. Self-compassion is the acknowledgment that we must be looking after ourselves first to care for others. We must be healthy, mentally alert, physically fit, and emotionally stable so that we can care for others.

Small behavior changes are how we start. Simple, informal, or impromptu behavior changes will make a big difference. Try

these ideas, but don't feel guilty.

- Rent a movie that you've always wanted to see.
- Indulge in a nice meal – whether you or a loved one prepares it, or it's take-out.
- Spurge in an extra hour or two of sleep.
- Spend extra time in a warm shower.
- Take your children to the park.
- Take a walk, even if it's for 10 minutes outside the hospital.
- Don't forget for the power of deep breathing.

Tips for Living a Heart-Healthy Life amid a Pandemic

You may be thinking, "I don't have time to exercise or prepare a healthy meal." But, the fact is that simple changes made over a long time yield big results, especially in our heart health. These suggestions are attainable and sustainable.

- **Eat just one extra serving of fruit or vegetables every day.** Bring an apple or banana to work, or order an extra veggie at the hospital cafeteria.
- **Eat a healthy breakfast.** Start your day off with a nutritious breakfast that includes whole grains. There are plenty of choices from whole grain bread for toast, whole grain cereals, or oatmeal.
- **Eat nuts for snacks.** Eat nuts instead of chips or cookies as a snack. Walnuts and almonds are especially heart-healthy.
- **Walk outside for just 10 minutes every day.** Instead of sitting down in a corner during your break, take a brisk 10-minute walk outside. Fresh air and sunshine do wonders for your heart and your mood.
- **Do bicep curls.** Keep a 5-lb. weight in your locker or desk drawer. A few bicep curls every day will help keep your arm muscles strong.
- **Cut out sugary sodas and lattes.** Swap out hot tea, coffee, or water for those sugary drinks to help

maintain lower blood sugar levels and lose a few pounds.

- **Substitute fish and poultry for red meats.** Limit red meat consumption to 18-oz. per week. Remember that red meats include beef, pork, and lamb. Eating fish like salmon that are high in Omega-3 fatty acids is a heart-healthy substitute.
- **Limit salt intake.** Help reduce the risk of high blood pressure by reducing your salt consumption. Processed meats and many restaurant and cafeteria meals are high in salt content.
- **Brush and floss your teeth regularly.** People with periodontal disease experience 2-to-3 times the risk of cardiovascular disease.
- **Have an annual physical.** It's easy to get caught up in your patients' problems and forget to have a physical exam for yourself. Keep track of your vital signs like blood pressure and cholesterol.
- **Reduce stress.** Stress reduction is easier said than done when you're in the midst of a pandemic. Deep breathing, yoga, meditation, or simply sitting for 10 minutes with your eyes closed will help reduce stress.

February is a good month for us to remember the words of Bill Swiggart, "Physicians have 'Permission to be human!'"

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Pulmonary Nodules: What Radiologists Should Recommend

Recently, it was acknowledged that radiologists vary widely in whether they recommend follow ups for pulmonary nodules. But this is something that deeply needs examination.

A new study by Brigham and Women's Hospital, published Sunday in JACR, claims organizations need to reform this.

They remind us that lung cancer is still the deadliest form of the disease in the U.S., and pulmonary nodules are one of the most common reasons for repeat CT exams. Typically, guidelines for radiologists dictate how they should respond in such scenarios, noted specialists with the Boston-based institution. However, Brigham found significant differences in the probability of making a follow-up recommendation among physicians in the same subspecialty division.

"Unwarranted variation for pulmonary nodules could have significant downstream implications on not only frequency of repeat imaging, but overall medical costs and quality of patient care," Neena Kapoor, MD, the Quality and Patient Safety officer in Brigham and Women's Department of Radiology, and colleagues wrote February 7. "How to alter radiologist behavior and reduce variation in reporting of follow-up recommendations is a challenging problem that likely requires multiple interventions and stakeholder engagement."

Logically, the only way to help is to better understand the issue, therefore Kapoor and co-authors analyzed 142,000 chest and abdominal reports, gathered between 2016 to 2018 in its abdominal, thoracic and emergency radiology subspecialty divisions. Kapoor's team harnessed a natural language

processing tool to pinpoint 24,512 reports with pulmonary nodules during that period that ended up being benign.

Altogether, the team found that 4,939 (20%) of reports had a follow-up recommendation for pulmonary nodules. The majority were CT scans of the chest (76%), outpatient studies (63%), and interpreted by thoracic rads (64%). Study authors calculated a 4.3-fold difference between radiologists in the probability of making a follow-up recommendation for a pulmonary nodule.

What are some of the other possible reasons for lack of follow-up? Kapoor et al. also learned that studies for male patients and abdominal CTs were less likely to have a pulmonary nodule follow-up recommendation. On the other side, older patients, the presence of a trainee, inpatient and ED examinations were all associated with higher rates. The authors, however, did not delve into the reasons for these discrepancies. If the sense of urgency leads radiologists to subconsciously push follow ups more often, this needs to be studied and addressed in order to catch early diagnoses of the awfully aggressive disease.

“Our work serves as a first step for future work to quantify the magnitude of variability in follow-up recommendations for pulmonary nodules,” the team concluded. “Further studies will need to determine the downstream implications of variation in follow-up recommendations, including the clinical appropriateness of radiologist recommendations, variability in length of follow-up or imaging modalities used, and downstream imaging costs and quality of care.”