Preparing for Potential COVID-19 Surge

Convention Center, two other field hospitals ready if needed

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The motto of the State of Rhode Island is "Hope." And everyone in the state is hoping the plans announced this week by Governor Gina Raimondo at her daily press briefing on Monday, to phase in a gradual re-opening on May 9th, will occur.

John Murphy, MD, Executive Vice President of Physician Affairs, Lifespan and Interim President, Rhode Island Hospital, in patient room.

"We have started to plateau and if social mobility remains down, maybe we will even see a decline in positive COVID cases in a couple of weeks," she said. The hospitalization number has remained relatively flat for about two weeks now. "Overall, it is a very stable picture," the governor said.

Later on Monday, **JEREMIAH SCHUUR, MD**, Chair of the Department of Emergency Medicine at the Alpert Medical School, spoke during a Brown webinar on preparing for a surge during a pandemic. Acknowledging a flattening of the curve, he spoke on reviewing preparedness for a surge beyond existing hospital structures, one component of disaster preparedness.

Planning to account for models of patient surge, requested by Rhode Island officials, began in March, and within a month, the Rhode Island Convention Center facility, operated by Lifespan, was ready to go with a capacity of up to 600 beds to care for lower acuity patients or patients transitioning out of hospital. That effort was directed by **SELIM SUNER, MD, MS**, on the staff at Rhode Island Hospital, and the Director of Disaster Medicine and Emergency Preparedness in the Department of Emergency Medicine, and **CATHY DUQUETTE, PhD, RN**, Chief Nursing Executive for Lifespan.

In addition to the Convention Center site, there are two other surge facilities available should they become necessary: at the former Citizens Bank facility at Sockanosset Cross Road in Cranston, and at the former Lowe's warehouse in the Quonset Business Park in North Kingston. If necessary, the three facilities could provide more than 1,500 additional hospital beds. Care New England is managing the

Selim Suner, MD, MS, Director of Disaster Medicine and Emergency Preparedness in the Department of Emergency Medicine at Rhode Island Hospital.

Cathy Duquette, PhD, RN, Chief Nursing Executive for Lifespan, in resuscitation room.
[Photos: Rhode Island Medical Journal]

Donald McKaig, RPh, Lifespan's pharmacy manager, in pharmacy area.

At the Rhode Island Convention Center, capacity ranges from 546 beds to 594. The convention center's main display space has been transformed into four wards comprised of 28 pods, each with 24 beds; walls and a curtain separate each individual "unit."

An architect suggested adding Rhode Island street signs, such as Hope Street on the East Side and Nayatt Road in Barrington, along the corridors.

A network of metal ducts provides negative pressure to ensure safe airflow.

Citizens Bank and Lowe's facilities.

"We have not been overwhelmed like New York," Dr. Schuur said. "At this point it does not look like we will need them, but an essential part of preparations in a pandemic have included field hospitals. The best evidence was they would be used in some capacity. Had we not done this and it was needed, there would have been a tremendous amount of suffering."

He noted the two important steps he sees in the resumption of normal hospital operations are having rapid, accurate point-of-care testing and isolating COVID-19 patients when the spread is under control. "I don't see COVID going completely away," he said. ❖

New CNE Covid-19 testing site opens on Memorial Hospital grounds

Care New England's President and CEO **DR. JAMES FANALE**, Pawtucket Mayor **DONALD R. GREBIEN**, and Central Falls Mayor **JAMES A. DIOSSA** announced the opening of a multilingual coronavirus testing site that has more than tripled the capacity of existing test sites in the Blackstone Valley, in addition to the respiratory clinic already provided on the site by Care New England.

The site opened on April 22 at the former Memorial Hospital property, as part of CFP Beat COVID-19, a broad community collaboration aimed at stopping the spread of coronavirus in these two communities.

The launching of the site to provide accessible testing to the Blackstone Valley was a collaborative effort between Care New England, Pawtucket and Central Falls, the Rhode Island Department of Health, and the Rhode Island National Guard.

The coronavirus testing site is staffed by CNE medical professionals Monday-Friday from 8 a.m. to 5 p.m. ❖

[PHOTOS: RIMJ]

Drs. Caliendo, Kurtis to lead COVID-19 testing and validation task force

On April 24th, Governor Gina Raimondo announced at her daily press briefing the formation of a COVID-19 testing and validation task force, to be headed by **ANGELA CALIENDO, MD, PhD**, and **JONATHAN "JAKE" KURTIS, MD, PhD**.

She said the state has received 20,000 antibody tests which will be used to obtain a random sampling throughout the state to assess the prevalence of COVID-19. The task force will analyze and draw conclusions from the tests. She said it would be "weeks, not days" before the state would be able to share results.

She also noted that Rhode Island has had the highest number of COVID-19 tests performed per capita in the nation, now nearing about 3,000 tests per day.

Plans for hospital to re-start procedures

She also announced she has asked Rhode Island hospitals to provide her and the Department of Health with a plan to re-start non-critical surgeries and procedures, which will be evaluated over the next few week. "We now need to get back in the business of allowing hospitals to do these. This is a key source of revenue for hospital systems. After we see and evaluate plans they will be given a date to incrementally bring back these procedures," Governor Raimondo said. ❖

Lifespan reports COVID-19 related financial losses in March roughly equivalent to last year's total losses

On Monday April 20th, Lifespan reported an operating loss of $23.8 million for the month of March related to the COVID-19 crisis. The losses were primarily due to the canceling of elective surgeries, closing of ambulatory sites, and a significant reduction in office and emergency room visits. In addition to lost revenue from declining patient volumes and revenue, there were significant increases in expenses associated with our preparedness efforts including maintaining as many staff as possible on the payroll, expenses associated with procuring personal protective equipment and additional testing and lab expenses. After factoring in $8.9 million for restructuring expenses unrelated to COVID-19, the Lifespan operating loss for the month of March 2020 is $32.7 million. Investment losses included in nonoperating gains/losses of $41.1 million will result in a one month overall net loss of $75.7 million.

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For the entire fiscal year of 2019, Lifespan reported an operating loss of $23 million and a net loss of $34.9 million – their worst loss in more than a decade.

"From a purely financial standpoint, this crisis could not have come at a worse time for Lifespan since we were beginning to reap the financial benefits of our restructuring efforts that began at the end of last year. As we recently reported, operating losses shrunk to $2.6 million for the first quarter of fiscal year 2020 (October 1, 2019–December 31, 2019)," said **DR. TIMOTHY BABINEAU**, Lifespan's President and CEO. "Unfortunately, we anticipate that April and May will be even worse, and we could approach $100 million in operating losses for the time period March-May. We are working around the clock developing plans to mitigate these losses while working hard to keep as many Lifespan staff employed as possible. We sincerely hope the state and federal government will provide enough financial relief to ensure that Lifespan can be here when our citizens need us the most. Recently, we received approximately $25 million in federal relief. Certainly, a help, but much more needs to be done."

In a partial response to these financial challenges Dr. Babineau, Lifespan's president and CEO, stopped drawing any salary as of April 1, 2020. ❖

CNE reports operating loss of $15.2M in March

Care New England had an operating loss of $15.2 million for just the month of March, plus non-operating losses of $29.3 million largely tied to investments.

Care New England already received $8.7 million in additional federal aid from the $2.2 trillion CARES Act that Congress passed earlier.

"At some point, elective [surgeries] will open up – probably sooner than later. But remember – I don't think it's all going to come back right away. If everything came back in May, we'll struggle through a couple months – even though they're devastating losses in March and April. But I don't think it's going to come back right away. It's going to be slow," said CNE President & CEO **DR. JAMES FANALE**. ❖

Immunomic partners with EpiVax and PharmaJet on COVID-19 vaccine

ROCKVILLE, MD, PROVIDENCE, RI, AND GOLDEN, CO – Immunomic Therapeutics, Inc., a privately held clinical stage biotechnology company pioneering the study of nucleic acid immunotherapy platforms, announced in April that it is developing a nucleic acid vaccine candidate against COVID-19 leveraging its investigational UNITE platform for prevention of the novel coronavirus disease caused by SARS-Cov-2 coronavirus.

Immunomic will work with leaders from EpiVax and PharmaJet, who have a wealth of immunology and vaccine delivery expertise, to rapidly develop its COVID-19 vaccine. Immunomic's UNITE platform has been widely applied to create vaccine candidates for rabies, yellow fever, dengue fever, hepatitis C and SARS, a relative to the SARS-Cov-2 coronavirus.

"COVID-19 is a global pandemic and fighting this will take a major global effort investigating many prevention therapies, treatment options and new modalities. We believe that our UNITE platform, which has shown promising results in infectious disease applications, is well-suited to develop novel vaccines for coronaviruses," said **DR. WILLIAM HEARL**, CEO of Immunomic Therapeutics. "To rapidly advance our COVID-19 program, we are excited to collaborate with EpiVax, PharmaJet and our academic and strategic partners to explore ways to flatten the curve and prevent the spread of this deadly virus."

EpiVax CEO, **DR. ANNIE DE GROOT**, said "My company is thrilled to partner with ITI and PharmaJet on this important project. We believe that the UNITE platform, combined with epitopes that have been carefully triaged by EpiVax's advanced computational tools, will generate a highly effective immune response against the pathogen that causes COVID-19, while reducing off-target effects."

"We are pleased to be collaborating with Immunomic and EpiVax on this important program," said **CHRIS CAPPELLO**, President and CEO of PharmaJet, Inc. "The PharmaJet Tropis intradermal Needle-free Injection System has had great success in clinical studies as well as improved the immune response of multiple nucleic acid based (DNA and RNA) vaccines."

This collaboration will combine leading technologies from all three companies: Immunomic's UNITE platform, EpiVax's in silico T cell epitope prediction tool, and PharmaJet's well established Tropis® Needle-free Injection System that precisely targets delivery to the intradermal tissue layer. By bringing these companies' and their technologies together, Immunomic aims to create a vaccine against COVID-19 that produces broad and potent immune responses, is feasible for rapid-responses, scalable, thermostable, safe and easy to administer by healthcare professionals. In addition to working with EpiVax and PharmaJet, Immunomic plans to explore grant initiatives through the U.S. government, other companies and institutions, non-profit organizations, and investigators in the infectious disease field to advance its efforts against COVID-19. ❖

EpiVax Partners with GAIA Vaccine Foundation to make COVID-19 vaccine license free to developing countries

PROVIDENCE – EpiVax, Inc., is using advanced computational tools to accelerate a COVID-19 vaccine candidate (EPV-CoV19) for healthcare workers (HCW) into clinical trials in 6 months. Recently EpiVax announced its partnership with GAIA Vaccine Foundation ("GVF") to crowd-source funds for the project and its pledge to make a free license available to developing countries who qualify, in the context of this partnership.

EPV-CoV19 is a peptide-based, epitope-driven vaccine that can be rapidly and safely produced in most countries. Applying EpiVax's expertise enabled the selection of sequences representing all circulating SARS-CoV-2 genomes that will drive a T cell-mediated immune response, providing HCW with immune system "body armor", reducing their risk of morbidity and mortality. EPV-CoV19 will enter US clinical trials once funds have been raised ($1.75M).

GVF, a 501(c)(3) nonprofit organization, will enable private citizens and foundations to contribute to development of EPV-CoV19. GVF's mission is to reduce incidence of infectious diseases that disproportionately affect the under-served and promote the development of globally relevant, accessible vaccines that can be distributed on a not-for-profit basis in the developing world. **ANNIE DE GROOT, MD**, EpiVax CEO/CSO, said, "The soul of each company will be revealed during this crisis. Personally, I do not believe this is the time to become a billionaire. Each of us should do what we do best to reduce the impact of COVID-19 globally."

As it is the mission of EpiVax to "improve human health everywhere," the company has granted GVF a cost-free, royalty-free license to the EPV-CoV19 design for use in countries that can produce and test the vaccine candidate on the Least Developed Countries list published by the United Nations. Collaborators and a clinical trial site in West Africa have been identified.

Donations to the GVF COVID-19 vaccine fund will be entirely dedicated to the preclinical and clinical development phases of EPV-CoV19.

For more information or to make a donation to the program, visit http://www.gaiavaccine.org/covid19. ❖

About EpiVax: EpiVax is a biotechnology company with a broad portfolio of projects, including vaccines and immunotherapies for infectious diseases, autoimmunity and cancer. www.epivax.com

About GVF: GVF is a 501(c)(3) organization that supports activities to advance healthcare accessibility and educational programs to inform the public about diseases, including HIV, and the importance of vaccines in West Africa. www.gaiavaccine.org

New Southcoast ICU opens ahead of schedule as part of COVID response

St. Luke's adds 16 beds, doubles size of previous unit, which will remain in operation

From left, **Keith Hovan**, President and CEO of Southcoast Health, **Maria Tassoni, RN**, Nurse Manager, and **Dr. Michael Barretti**, Medical Director for the new ICU at the abbreviated ribbon-cutting ceremony for the new ICU.

NEW BEDFORD – Southcoast Health's $14 million, state-of-the-art intensive care unit at St. Luke's was slated to open soon – just not quite this soon.

But the not-for-profit health system opted to accelerate the project's completion as part of its preparation for and response to the COVID-19 pandemic's potential impact in the region, Southcoast officials said recently during a "virtual ribbon cutting" featuring physically distanced administrative and clinical leaders. The timeline was moved up by as much as a month in anticipation of a projected surge, they said.

At 16,000 square feet, the new ICU, built on the fourth floor of St. Luke's, more than doubles the size of the previous unit, which itself will remain in operation to handle increased patient volume related to the coronavirus. At a later date to be determined, the space will be repurposed for medical/surgical patients.

"The fact that this investment in our community could be up and running at such a crucial time is a remarkable achievement on the part of our staff and a testament to the trades and small businesses who stayed on the job to see the project through ahead of schedule," said **KEITH HOVAN**, President and CEO of Southcoast Health. "Amid so much uncertainty right now, these frontline health care heroes and amazing essential workers are a source of confidence who inspire enduring gratitude and hope."

Hovan also thanked the Commonwealth of Massachusetts, the local legislative delegation, and the City of New Bedford for working closely with Southcoast throughout the process.

The new ICU will add 16 beds in 440-square-foot rooms to the hospital's capacity. Other features include an advanced video system for monitoring and safe patient-nurse communication, transitional screening windows for privacy, and images of the region created by local artists to promote a calming, healing environment.

"This new ICU is important for our trauma and critical care patients and staff," said **MARIA TASSONI, RN,** Nurse Manager. "It's more modern, more spacious, and more accessible. We're thankful to everyone who has worked on this project. It's been a group effort, and all involved have been tremendous."

Officials said the new ICU also aligns with Southcoast Health's process to establish St. Luke's as a Level II Trauma Center, meaning patients along the 195 corridor can receive critical care without necessarily needing transport to Providence or Boston during the moments that matter most.

"The Level II Trauma Center required a state of the art medical ICU with enhanced surgical capability, and that's what we have here now to provide our patients with the best possible care," said **DR. MICHAEL BARRETTI,** Medical Director for the new ICU. "The technology and comfort, along with the negative pressure rooms for airborne precautions and upgrades in safety and monitoring features, make this an incredible opportunity and honor for me and our entire staff." ❖

Herbert Aronow, MD, MPH, is author of national recommendations related to cardiovascular care during COVID-19

HERBERT ARONOW, MD, MPH, director of interventional cardiology and of the cardiac catheterization labs at Rhode Island and The Miriam Hospitals, is one of the authors of national recommendations for interventional cardiac procedures during COVID-19. The article, which was accepted for rapid publication by both the American College of Cardiology and the Society for Cardiovascular Angiography and Interventions, examines:

- How preexisting cardiovascular disease affects severity of COVID-19 infection
- the cardiovascular complications that can arise from infection
- the cardiovascular side effects of therapies under investigation
- How the rapid triage of non-COVID cardiocascular patients may be affected by the response to COVID-19
- How the provision of cardiovascular care may make health care workers vulnerable to infection

The group reviewed peer-reviewed and preprint literature pertaining to cardiovascular considerations and COVID-19, and highlighted gaps in knowledge that require further study. ❖

Researchers at Rhode Island Hospital and The Miriam Hospital interviewed people who use opioids to explore the relationships they have with dealers

PROVIDENCE – A study led by researchers at Rhode Island Hospital and The Miriam Hospital suggests that that one strategy for addressing opioid overdoses and deaths may involve the relationships between people who use illicit drugs and their dealers.

The study, which involved surveys and interviews with Providence residents who use drugs, found that many of them seek to protect themselves from harm by acquiring drugs from dealers whom they know and who either refuse to sell drugs that they know contain fentanyl or test their supply for the dangerous synthetic narcotic.

This new study, published in the *International Journal of Drug Policy*, was paid for by both The Miriam Hospital and the Center of Biomedical Research Excellence (COBRE) on Opioids and Overdoses at Rhode Island Hospital – with funding from the National Institutes of Health.

The same trio of researchers published a similar study in the *International Journal of Drug Policy* in 2017, which demonstrated that most people who use drugs in Providence do not seek out drugs containing fentanyl and struggle to control the contents and quality of the drugs they purchase – pushing back on early suspicions that fentanyl was entering the U.S. drug market as a result of user demand for "the ultimate high." This study adds new depth to those earlier findings: while it is certain that fentanyl is being added to the drug supply somewhere in the supply chain, users can better protect themselves from fentanyl overdose by purchasing opioids directly from dealers who are known to them.

"The conventional wisdom that 'we cannot arrest our way out of this' is generally well accepted when we talk about people who are living with a substance use disorder. Our study found that we may be able to save more lives if we apply that logic to people who sell and trade drugs as well," said lead author **JENNIFER CARROLL, PhD, MPH**, a fellow at The Miriam at the time of the research. "Our data shows that arresting someone for drug dealing can immediately increase the risk of overdose faced by the people they regularly sell to., who then may have to buy from a dealer with whom they have no relationship. In other words, our data suggest that enhanced criminal justice responses to drug distribution may actually cause harm rather than reducing the risks posed by substance use."

Carroll, an adjunct assistant professor of medicine at the Warren Alpert School of Medicine of Brown University and on the faculty of Elon University, co-authored the paper with two prominent Lifespan opioid research experts. They are **JOSIAH RICH, MD**, an infectious disease physician at The Miriam Hospital and co-director of its Center for Prisoner Health and Human Rights, and **TRACI GREEN, PhD, MSc**, an epidemiologist with Rhode Island Hospital and on the faculty at Brown and Brandeis universities. Rich and Green are co-directors of the COBRE on Opioids and Overdose, which was established at Rhode Island Hospital in 2018 with an $11.8 million grant from the NIH.

The study involved surveying and interviewing 92 individuals from 2016 to 2017. Of those, 51 discussed their relationships with drug suppliers and indicated that their experience with them was a key part of their strategy to avoid fentanyl. The just-published paper includes excerpts of interviews of anonymous drug users recounting their experiences in Rhode Island.

"This research gives important insight into the nature of the street-level drug market," said Green. "It suggests taking an approach that considers dealer relationships and the social network, possibly as something to intervene on with prevention and harm reduction, rather than just as something to disrupt and dismantle. ❖

Rhode Island's air quality worsened for ozone pollution, finds 2020 'State of the Air' Report

PROVIDENCE – The American Lung Association's 2020 "State of the Air" report found counties in the State of Rhode Island maintained failing grades for ozone pollution with both Providence and Kent recording more unhealthy days than in last year's report. In contrast, all three reporting counties did report less short-term particle pollution, and only Kent reported a slight increase in long term particles – with all continuing to meet the national standard.

The Lung Association's annual air quality "report card" tracks Americans' exposure to unhealthful levels of particle pollution and ozone during a three-year period. As the country continues to grapple with the COVID-19 pandemic, improving air quality is more important than ever – as studies have shown air pollution harms lung health, and emerging research links long-term exposure to particle pollution to increases in the death rate among COVID-19 patients. Once again, the report found that nearly half of all Americans were exposed to unhealthy air in 2016–2018. In Rhode Island, ozone pollution placed the health of its residents at risk, including those who are more vulnerable to the effects of air pollution such as older adults, children and those with a lung disease.

"For many Americans, the COVID-19 pandemic has illustrated just how important lung health really is," said **DR. TERRANCE HEALEY**, Director of Thoracic Radiology at Rhode Island Hospital. "There is no short cut, no alternative to breathing. We must do more to protect our lungs from anything that puts our ability to breathe at risk, be it a virus, tobacco smoke, or air pollution."

"This year marks the 50th anniversary of the Clean Air Act, which has been responsible for dramatic improvements in air quality. However, Rhode Island residents are breathing more unhealthy air driven by extreme heat as a result of climate change, placing our health and lives at risk," said **JENNIFER WALL**, Director of Advocacy for the American Lung Association in Rhode Island. "Furthermore, with nearly half of Americans breathing unhealthy air, our 'State of the Air' report shows that nationally, because of climate change, the nation is heading in the wrong direction when it comes to protecting public health."

Each year the "State of the Air" provides a report card on the two most widespread outdoor air pollutants, ozone pollution, also known as smog, and particle pollution, also called soot.

This year's report covers 2016, 2017 and 2018, the years with the most recent quality-assured data available collected by states, cities, counties, tribes and federal agencies. Notably, those three years were among the five hottest recorded in global history. Rising temperatures lead to increased levels of ozone pollution. Changing climate patterns also fuel wildfires and their dangerous smoke, which increase particle pollution. Ozone and particle pollution threaten everyone, especially children, older adults and people living with a lung disease. Although this report does not cover data from 2020, amid the COVID-19 pandemic, the impact of air pollution on lung health is of heightened concern.

Ozone Pollution

Compared to the 2019 report, the Boston-Worcester-Providence metro area, which includes the counties of Bristol, Kent, Newport, Providence, and Washington, worsened for the second year in a row, ranking 38th most polluted metro area for ozone, and showing an increase in unhealthy days. Both Kent and Providence followed suit with increased unhealthy days, and while Washington slowed a slight improvement, all three maintained their failing grades for ozone.

"Ozone pollution can harm even healthy people, but is particularly dangerous for children, older adults and people with lung diseases like COPD or asthma," said Healey. "Breathing ozone-polluted air can trigger asthma attacks in both adults and children with asthma, which can land them in the doctor's office or the emergency room. Ozone can even shorten people's lives."

This report documents that warmer temperatures brought by climate change are making ozone more likely to form and harder to clean up. Significantly more people suffered unhealthy ozone pollution in the 2020 report than in the last three "State of the Air" reports.

Particle Pollution

"State of the Air" 2020 found that year-round particle pollution levels in Providence were slightly improved, although it continues to be the most polluted county for year-round particles in the Boston-Worcester-Providence metro area. Washington County showed improvement, whereas Kent slightly worsened. Both continue to pass national standards.

"Particle pollution can lodge deep in the lungs and can even enter the bloodstream. It can trigger asthma attacks, heart attacks and strokes and cause lung cancer," said Healey. Particle pollution comes from coal-fired power plants, diesel emissions, wildfires and wood-burning devices.

'"State of the Air" 2020 also tracked short-term spikes in particle pollution, which can be extremely dangerous and even lethal. The report found that Providence had fewer days when short-term particle pollution reached unhealthy levels, raising its grade from a B to an A.

While the report examined data from 2016–2018, this 21st annual report also provides air pollution trends back to the first report. Learn more about air quality across Rhode Island and the nation, in the 2020 "State of the Air" report at Lung.org/sota. ❖