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Is “burnout” a dangerous, misleading label?

MICHAEL S. WOODS, BA, MD’21; EDWARD FELLER, MD, FACP, FACG

• A 2018 JAMA review cited 142 different, published definitions of burnout.1
• In a study of 6,956 surgery residents, burnout prevalence varied from 3% to 91% depending on how burnout was defined.2
• Eighty-six percent of teachers identified as burned out satisfied criteria for depression.3

Burnout, although widely publicized, has not been precisely described in the medical literature. There are too many different, contradictory definitions; some have even measured burnout by simply asking participants a single ‘yes’ or ‘no’ question: “I feel burned out by my work.” The absence of a widely accepted, robust definition amidst too many heterogeneous formulations makes it difficult to assess the validity and practical application of a proportion of the relevant medical literature or compare management strategies. We contend that burnout has become a “catch-all” phrase too frequently applied to widely varying symptoms and settings.4 This mislabeling can have dire consequences.

The problem of burnout as exclusively a work-related entity

Typically, burnout is described as a pervasive, work-related, career-long risk in medicine and other helping professions. Matched to population-based age groups, physicians have a heightened risk of burnout, starting as soon as the first year of medical school.4

The popular concept of burnout as “work-specific” has been challenged as being indiscriminately and inaccurately applied to any and all unresolved occupational distress. Yet, the World Health Organization [WHO] still defines burnout as a syndrome resulting from chronic workplace stress.

More than 90% of published papers on burnout define the entity using the Maslach Burnout Inventory [MBI] in some form.5 The MBI also limits burnout to job distress, including medical school and post-graduate training. The three-factor MBI is characterized by [1] emotional exhaustion (EE); [2] depersonalization (DP) – impoverished empathy, negative, detached interactions; [3] decreased perception of personal accomplishment and self-worth (PA).6 As interpreted by Maslach, the MBI comprises high scores in EE and DP, but low scores on the PA subscale. But, there remains confusion, not agreement, on what burnout is…and isn’t.

What’s the problem? Defining burnout exclusively as work-related distress may lead to missed diagnoses, sub-optimal treatment and poor outcomes of major depression. In one assessment, misidentifying depression as burnout to explain dysphoric moods increased from 0.3% in 2001 to 10.2% in 2011.7

Methodologic difficulties in defining burnout

The MBI is not sufficiently robust to quantify dynamic shifts in improvement or worsening over time. This flaw can limit assessment of whether preventive or treatment strategies help or harm. Burnout has no consensus or gold standard definition, only more than 100 contradictory and wildly varying interpretations. Other, different conceptions of burnout include [1] limited to a unidimensional scale; [2] with or without cutoff sub-scores; [3] stratification as high-medium-low level burnout; [4] increase in any one scale; [5] continuous sub-scale scores; [6] dichotomous rating of burnout as ‘yes’ or ‘no.’ Burnout is not static. Progression or resolution of burnout is a dynamic impairment or recovery incompletely assessed in many static, one-point-in-time reports.

Scores can be influenced by acute situational distress, comorbidities and by physical fatigue and decision fatigue among multiple, diverse factors. The MBI has been linked to personal distress, but system-wide influences also matter as triggers or by “burnout contagion” where transmission of one individual’s impairment can infect groups, teams and organizations.

How did burnout evolve into a misunderstood, imprecise, overdiagnosed, one-size-fits-all description of distress? Medical culture seems to favor burnout as a label, perhaps because burnout is commonly perceived as outside an individual’s control, caused by system or organizational deficiencies. Some sufferers may conclude, “It’s not my problem.” Typical recommendations focus on individual and system-wide behavioral interventions – stress reduction, yoga, mindfulness, more vacation days, better work-life balance.8

But, failure to identify major depression is frequently linked
to fewer recommendations for needed psychotherapy, less medication and failure to seek further explanations for personal distress; thus, doctors may avoid or mitigate the stigma and shame linked to depression.7

Many vulnerable doctors do not receive regular medical care that they recommend to their patients resulting in more frequent misdiagnosis. This lapse can have catastrophic consequences. In addition to increased comorbidities impairing quality of life, physicians have a career-long rate of suicide greater than that of other doctoral-level professionals such as JDs or PhDs or the general American population.9

Is there a clear distinction between personal distress and work distress?

In an oft-cited study (almost 800 citations), Drybre and colleagues reported that professional distress (burnout) was distinct from personal distress (depression); the former was more closely linked to unprofessional behaviors in work or education.10 Others have criticized this conclusion as artificial, claiming that both work and personal stressors contribute to both burnout and depression.11

Moreover, burnout and depressive symptoms frequently co-occur or overlap; some research indicates that burnout and depression can be distinguished using factor analytic strategies; others conclude that depression and burnout are not separate.12 Inconclusive findings also demonstrate important deficiencies in the MBI as another barrier to correctly compare burnout to depression. Clarifying how burnout is best defined remains unresolved.

Conclusion

These are times of unprecedented stress for physicians, beset daily by incessant, competing, intractable problems and demands, exacerbated by COVID-19. Burnout is real and damaging. It is misleading to regard it as exclusively a work-related entity. The current confusion in diagnostic clarity has important ramifications. Overdiagnosis of burnout can lead to a catastrophic failure to identify and appropriately treat major depression and suicidality.

References


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Aetna is proud to support the members of the Rhode Island Medical Society.
This themed issue of the *Rhode Island Medical Journal* highlights ongoing activities in the evolving field of Preventive Cardiology. The section was developed by Guest Editor **DR. WEN-CHIH (HANK) WU**, Chief of Cardiology at the Providence VA Medical Center (VAMC) and Medical Director of the Miriam Hospital Cardiovascular Rehabilitation Center. In 2008, under Dr Wu's guidance, the Division of Cardiology at the Alpert Medical School of Brown University launched one of the first preventive cardiology fellowships in the United States, which, since its inception, has graduated 18 physicians, some of whom remain in Rhode Island and have joined the ranks of the Alpert Medical School.

The program, which is described in the theme's opening article, *The Landscape and Trends in Preventive Cardiology and its Training*, focuses on training in cardiac rehabilitation, the application of exercise physiology and stress testing towards disease detection, risk stratification, and exercise prescription and the skills required to perform population-based outcomes research towards the prevention of heart disease.

**Ambulatory Intravenous Diuretic Clinic Associated with Short-Term Risk Reduction in Mortality and Rehospitalizations in Patients Discharged with Heart Failure** is a non-randomized retrospective study which reviews the format and benefits of an outpatient IV diuretic clinic for heart-failure patients staffed by a multi-disciplinary team, including cardiology fellows, RNs, PharmDs, and clinical social workers.

Telehealth has been a long-standing feature of VA care, especially in underserved areas and even before the COVID-19 pandemic. **Review of Telehealth Solutions for Outpatient Heart Failure Care in a Veterans Health Affairs Hospital in the COVID-19 Era** describes the well-established and varied telehealth options for cardiac care within the VA system and which is especially suited to the present pandemic situation.

Home-based cardiac rehab is a unique aspect of VA rehab programs. **Important Personal Values of Veterans Enrolled in Home-Based Cardiac Rehabilitation** describes the motivational factors that contribute to a successful home-based rehab experience.

Taking a page from the VA playbook during the recent shutdown, **Transition to Home-Based Treatment Plans for Center-Based Cardiac, Pulmonary, and Vascular Rehabilitation during COVID-19** describes the successful transformation of the Lifespan center-based program to a home-based plan for a period of two months, until the shutdown was lifted.

**Promoting Social Connectedness among Cardiac Rehabilitation Patients During the COVID-19 Pandemic and Beyond** explores efforts to mitigate the effects of social distancing through home-based programs which offer remote coaching, supervised exercise training, and support to cardiac patients during the COVID-19 crisis.

Finally, a brief rundown of the varied list of authors and contributors for this themed issue underscores the multidisciplinary nature of Preventive Cardiology, which includes physicians, nurses, exercise physiologists, pharmacists, behavioral psychologists, nutritionists and substance abuse experts, all working together to provide a comprehensive approach to complex cardiac patient care.

**Author**
Kenneth S. Korr, MD, FACC, Associate Editor of the *Rhode Island Medical Journal*, Associate Professor of Medicine Emeritus at the Alpert Medical School of Brown University.
The Landscape and Trends in Preventive Cardiology and its Training
HOJUNE E. CHUNG, DO; GAURAV CHOUDHARY, MD; WEN-CHIH WU, MD, MPH

KEYWORDS: ASCVD, congestive heart failure, pulmonary hypertension, curriculum development, preventive cardiology

INTRODUCTION
Atherosclerotic cardiovascular disease (ASCVD) is the leading cause of death independent of gender and ethnicity in the United States (US) and is estimated to result in a staggering $273 billion economic burden annually.1 Guideline-directed medical therapy (GDMT) in the primary and secondary prevention of ASCVD has afforded our aging population with increased survival times. Nonetheless, the epidemiology of cardiovascular disease is transitioning from ASCVD alone to include the growing prevalence of heart failure.2 Despite advances in GDMT, the mortality from heart failure remains high.3 The traditional model of prevention focusing on ASCVD is insufficient to meet our current needs and highlights the need for innovative training regimens within preventive cardiology.

In light of this public health priority, the opportunities to train in preventive cardiology continue to grow. Fifteen programs were first identified in 20124, with an additional 4 programs in 2017 for a total of 19.5 We sought to provide an updated list of programs that also included their core focus. A total of 24 programs were identified utilizing the search methods as described by Pack et al.4 Even with the continuous growth of cardiovascular disease, the Accreditation Council for Graduate Medical Education and American Board of Medical Specialties do not officially recognize preventive cardiology as a subspecialty. Without accreditation, preventive cardiology fellowships lack a standardized curriculum which has created heterogeneous training experiences.

It is critical that preventive cardiologists are adept in interpreting research outcomes from different disciplines that span from mental health, behavioral change, nutrition, exercise science, substance abuse, clinical pharmacology and population health, among others, and translate them into clinical practice for the benefit of their patients. Programs tend to fall into one of two dichotomies, either blending clinical and research training or solely focused on research typically in one of the disciplines of prevention such as hypertension, lipidology, atherosclerosis, subclinical atherosclerosis imaging or cardiac rehabilitation (Table 1).

DIVISION OF CARDIOLOGY AT BROWN ONE OF FIRST TO LAUNCH PREVENTIVE FELLOWSHIP
In 2008 the Cardiology division at the Alpert Medical School of Brown University launched one of the first preventive cardiology fellowships in the US. In collaboration and support with the Brown University’s general cardiology fellowship, the preventive cardiology fellowship offers two tracks. One is a 2+2 track where the fellow is trained for 2 years in preventive cardiology and related research, and another 2 years in general cardiology. To date, 2 physicians have graduated under this track. The second track offers preventive cardiology training alone, either for 2 years of training in preparation for a future general cardiology fellowship or 1 extra year of training after the general cardiology fellowship. To date, the second track has graduated a total of 18 physicians. Some graduates have continued to serve the Rhode Island community as cardiology faculty within the Alpert Medical School.

At the inception of the fellowship the vision was to equally emphasize the clinical and research components of preventive cardiology. The core of the fellowship was structured around a robust clinical experience where the fellows rotate in general cardiology, heart failure and pulmonary hypertension clinics. As our population ages, patients are at an increased risk of cardiopulmonary co-morbidities which may lead to underdiagnosed pulmonary hypertension. The fellows are actively involved in a multi-specialty pulmonary hypertension clinic staffed by both pulmonary and cardiology. Studies have shown that these combined efforts lead to improved diagnosis and supportive care measurements in this patient population with high mortality.6

CARDIAC REHABILITATION TRAINING PROGRAMS
The fellows also staff one of the largest center-based cardiac rehabilitation facilities in the Northeast that is comprised of two geographically and structurally distinct programs. One follows the standard cardiovascular rehabilitation curriculum set forth by the American Association of Cardiovascular
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<th>Program</th>
<th>Training Experience</th>
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and Pulmonary Rehabilitation (AACVPR), and the other executes the intensive cardiac rehabilitation curriculum from Dean Ornish Heart Disease Reversal® program. The breadth of experience allows exposure to varied program structures and settings, nuanced exercise prescriptions and the physical and mental improvements made possible, which is invaluable when evaluating the natural history of cardiovascular disease.

INTRANEOUS DIURETIC CLINIC
One unique feature of the fellowship is that each fellow is also responsible for an Intravenous Diuretic clinic. The clinic is modeled after the outpatient Oncology infusion suite for chemotherapy and tailored to the goal of administering same-day ambulatory intravenous diuretics. In this way, heart failure patients receive frequent volume assessments with the goal of averting an emergency room visit or heart failure hospitalization. The benefit of this experience is clinically meaningful for both the patient and the trainee, since hospitalizations for heart failure have a cumulative risk in mortality for these patients.

PERFORMANCE AND INTERPRETATION OF STRESS TESTING
An integral part of preventive cardiology is the application of exercise physiology and stress testing towards prevention, disease detection, risk stratification or exercise prescription. Therefore, fellows receive extensive training in the performance and interpretation of stress testing, both pharmacologic and exercise, with and without imaging. Furthermore, some fellows undergo additional instruction in the quantification of coronary artery and aortic valve calcification by Computed Tomography or interpretation of cardiac MRI as part of their research. The imaging opportunities within the program continue to expand with the addition of cardiac pyrophosphate nuclear imaging to diagnosis cardiac amyloid, an increasingly common finding in the heart failure clinic.

POPULATION-BASED OUTCOMES RESEARCH
Fellows are rigorously trained in the scientific method in order to conduct population-based outcomes research. Every fellow is taught how to independently create statistical models that demonstrate which factors have relationships with exposure and outcomes of interest. Fellows routinely conduct analysis using national databases such as the Coronary Artery Risk Development in Young Adults (CARDIA), Jackson Heart Study and the registry of the AACVPR, to name a few. The goal is to nurture physicians who can critically examine the current medical literature and weigh the risks and benefits of current preventive cardiology practices to improve patient outcomes.

Lastly, the epidemiological trends of cardiovascular pathologies and preventive practices require a multidisciplinary approach. The fellows are trained in an inclusive ethos and learn to work with nursing, exercise physiologists, pharmacists, behavioral psychologists, nutritionists and substance abuse experts to provide comprehensive care. Bi-weekly multi-disciplinary research conferences are held to learn the viewpoints from different disciplines. Multi-disciplinary clinical heart failure meetings occur to review all heart failure discharges, staffed by cardiology, home care nursing, home-based cardiac rehabilitation, and palliative care, to coordinate the needs and address the underlying pathophysiology of heart failure patients to prevent future hospitalizations.

CONCLUSION
As the need of our aging patient population becomes more complex, the need for a balanced clinical and research training in preventive cardiology continues to grow. Until a standardized curriculum is enacted, training programs have to evolve and adapt to the change of disease patterns and population health. As preventive cardiology programs strive to equip the modern physician with the knowledge and skills to comprehensively serve our patients with cardiovascular disease, it is necessary that the current and future preventive cardiology fellowships incorporate both clinical and research aspects in the curriculum to experience further growth and success.

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Conflicts of Interest
The authors have no disclosures to declare.

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Ambulatory Intravenous Diuretic Clinic Associated with Short-Term Risk Reduction in Mortality and Rehospitalizations in Patients Discharged with Heart Failure

AMY ST. AMAND, PharmD, BCPS; TRACEY H. TAVEIRA, PharmD, CDOE; KAITLIN E. HENTHORNE, PharmD; WEN-CHIH WU, MD, MPH

ABSTRACT

BACKGROUND: Data on effectiveness of ambulatory intravenous (IV) diuretic clinics for volume management in patients with heart failure to prevent rehospitalization and mortality are limited. Therefore, the primary goal of this research is to evaluate the effectiveness of an outpatient multidisciplinary IV diuretic clinic versus standard observational hospitalizations of less than 48 hours for decompensated heart failure on the time to rehospitalization or death.

METHODS: A retrospective cohort study of patients with heart failure (n=90) at the Providence Veterans Affairs Medical Center was conducted. Patients were included in the analyses if they received at least one ambulatory IV diuretic clinic visit or an observational hospitalization of less than 48 hours for decompensated heart failure between January 1, 2014 and June 30, 2016. Using Cox proportional hazards modeling, we compared the time to any hospitalization or death between the IV clinic and the observational hospitalization cohort over 180 days of follow-up.

RESULTS: In the ambulatory IV diuretic clinic group, 27 patients (mean age 78.3 ± 8.3 years) received a median of 3 (interquartile range [IQR] 2-12), IV diuretic treatments. In the comparison group, 63 patients (mean age 80.3 ± 11.0 years) were hospitalized for observation for 48 hours or less during the same time period. Adjusting for age and imbalances in baseline characteristics, left ventricular ejection fraction and enrollment in hospice care, the hazards of any hospitalization or death (HR 0.39, 95% confidence interval 0.19 to 0.83) were reduced for patients in the ambulatory IV diuretic clinic versus those in the observational hospitalization cohort.

CONCLUSIONS: In patients with decompensated heart failure, an ambulatory IV diuretic clinic was associated with risk reduction of any rehospitalization or death over 180 days of follow up when compared to a strategy of observational hospitalization for less than 48 hours. Future research should prospectively analyze outpatient IV therapy in a larger and more diverse population.
Setting
The organization of the heart failure care program at the Providence Veterans Affairs Medical Center is shown in Figure 1. The goal of the heart failure care program is to improve health status and to decrease hospitalizations and death for patients with an established history of heart failure. The heart failure care team was designed using the tenets of the chronic care model and is comprised of a cardiologist, cardiology fellows, nurse practitioners, registered nurses and clinical pharmacists who provide medication optimization, self-management education, disease state monitoring and care coordination. As per local VA policy all patients who were hospitalized with a primary diagnosis of heart failure were referred to the heart failure care program by cardiology or the inpatient treatment team. Prior to discharge the patient would receive an inpatient transition of care appointment by either the heart failure nurse or clinical pharmacist trained in heart failure care management. The transition of care appointment consisted of brief heart failure education and medication reconciliation. An appointment in either the individual heart failure care program, shared medical appointment group program or outpatient IV diuretic program would be scheduled depending upon the individual patient’s needs. Patients who were assigned to receive heart failure care management in the individual clinic received a 30-minute face to face appointment with a clinical pharmacist or cardiology fellow if they refused to be seen in a group setting or did require immediate post-discharge diuresis. Each visit included patient education, behavioral modification, disease state monitoring and medication optimization. The shared medical appointment program consisted of 2-hour group sessions that met weekly for 4 weeks. The first half of each session focused on self-management education provided by a nurse, registered dietician, social worker or clinical pharmacist. During the second half of each session the clinical pharmacist performed a brief physical exam to assess volume status and provided medication optimization. The ambulatory IV diuretic was staffed by cardiology fellows or a clinical pharmacist and provided an alternative to inpatient admission for IV diuretic therapy for patients with mild to moderate decompensated heart failure. Patients could also be referred to the IV diuretic clinic from the individual heart failure clinic appointment or the heart failure shared medical appointment program at the discretion of the heart failure provider. The frequency of outpatient IV diuretic treatment was determined at the discretion of the treating provider but was generally held once weekly. Providers in the heart failure individual clinic, heart failure shared medical group appointment program and IV diuretic program also provided care coordination and referred patients to home-based cardiac rehabilitation, palliative or hospice care, social work or mental health, home telehealth monitoring or the hospital in-home program on an as needed basis.

Interventions
Ambulatory IV diuretic clinic: Patients in the IV diuresis cohort received IV loop diuretics for hypervolemia in the outpatient setting. As per the Providence VA Medical Center’s protocol, the following items were assessed: vital signs, weight, EKG, laboratory values (basic metabolic panel, heparinized potassium, brain natriuretic peptide [BNP], digoxin levels [if indicated], and magnesium levels). Urine output was recorded hourly and upon the conclusion of IV diuresis therapy. Referral to self-care education, advanced care planning and palliative care were made when applicable.

Observation admission cohort: The observation admission cohort received an evaluation and initial treatment for hypervolemia in the emergency room followed by an inpatient hospitalization of less than 48 hours in duration as per the discretion of the treating emergency
Emergency room physicians did not have the ability to directly refer to the ambulatory IV diuretic clinic but could refer to the heart failure clinic program for further follow-up and subsequent diuresis.

**End Points**
Electronic medical records were reviewed for patient outcomes. The primary endpoint was the time to all-cause rehospitalization or death. The secondary endpoint was the time to heart failure rehospitalization or death.

**Covariates**
Patient demographics, comorbidities and laboratory values were also abstracted from the electronic medical record. Patients were considered to have a history of hypertension, hyperlipidemia, chronic obstructive pulmonary disease, pulmonary hypertension, atrial fibrillation, type 2 diabetes mellitus, obstructive sleep apnea, or stroke if it was documented in the medical record prior to the index event or the patients were receiving active treatment specific for the disease states. Patients were considered to have a history of coronary artery disease if they had documented evidence of a myocardial infarction, prior cardiac stent, or a prior cardiovascular bypass graph. Blood pressure, heart rate and body mass index [BMI], BNP, estimated glomerular filtration rate [eGFR] and potassium and serum creatinine values were abstracted upon presentation to the initial index event and again within seven days post completion or discharge. Patients were considered to be current users if active tobacco use was documented during the index event encounter. The most recent low-density lipid profile level prior to the patients index event was abstracted for the analysis. Antihypertensive medication use was ascertained at the initial ambulatory care IV diuretic visit or upon presentation for an observational hospitalization admission. Antihypertensive medications were categorized into the following classes: angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers, β-adrenergic blockers, calcium channel blockers, thiazide diuretics, loop diuretics, and potassium sparing diuretics.

**Statistical Analysis**
The baseline characteristics of patients who were seen in the ambulatory IV diuretic clinic and those admitted for an observational heart failure hospitalization of less than 48 hours were compared using a t test for continuous variables and Chi-square test for categorical variables. Cox proportional hazards modeling was used to compare the time to all-cause rehospitalization or death and the time to heart failure rehospitalization or death adjusting for variables imbalanced at baseline [BMI, obstructive sleep apnea, COPD, use of loop diuretics], as well as, age, eGFR, left ventricular ejection fraction [LVEF], and hospice enrollment. Our result model had adequate discrimination and calibration for the study population (Harrell C=0.62). Kaplan-Meier curves were used to estimate freedom of hospitalization or death between the two cohort arms. We tested the proportionality of hazards assumptions for the Kaplan-Meier curves by visual inspection and analysis of the Schoenfeld residuals. The proportional hazards assumption was confirmed for the primary analysis (P=0.39).

**RESULTS**
Between January 1, 2014 and June 30, 2016, 167 patients were discharged from the Providence VA Medical Center with a primary diagnosis of decompensated heart failure. Of those patients, 77 were excluded from our analyses because they did not receive a follow-up treatment in either the outpatient IV diuretic clinic or an observational hospitalization of <48 hours. A total of 27 unique patients received a median of 3 interquartile range [IQR 2–12] diuretic treatments in the ambulatory IV diuretic program. The median total urine output for those treated in the ambulatory IV diuretic clinic was 2525.0 mL [IQR 1075-9830mL]. Over the same time period 63 patients were admitted for an observational hospitalization of <48 hours with a primary diagnosis of decompensated heart failure (Figure 2). Seven of the patients in the observational hospitalization of <48 hours cohort were subsequently referred by a heart failure clinic providers to receive ambulatory IV diuretic treatment and received an average of 12.3 ± 12.1 treatments over the 180 days of follow-up.

Baseline characteristics were similar between the two cohorts; however, patients in the observational admission of <48 hours group tended to be older, had significantly lower BMI levels and were less likely to have a diagnosis of chronic obstructive pulmonary disease (COPD) or Obstructive Sleep Apnea (Table 1).

When compared to those patients in the observational admission cohort, those patients in the ambulatory IV diuretic cohort had a lower unadjusted hazard ratio of

**Figure 2. Consort Study Flow Diagram**
any-rehospitalization or death 0.43 (95% CI 0.23–0.81). After adjustment for age, BMI, diagnosis of OSA, COPD, eGFR, loop diuretic use, LVEF, and hospice enrollment, the adjusted hazard ratio for any rehospitalization or death was 0.43, 95% CI (0.21–0.88) for those who received treatment in the ambulatory IV diuretic therapy as compared to those in the observational admission cohort. Figure 3 shows the unadjusted Kaplan-Meier survival curves of those in the observational admission cohort and the ambulatory IV diuretic therapy cohorts over 180 days of follow-up. The median number of days to any rehospitalization or death was 38.0, (IQR 21–87 days) for those who received ambulatory IV diuretic therapy as compared with a median of

### Table 1. Baseline Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Admitted for Observation (n = 63)</th>
<th>IV Diuresis (n = 27)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>80.3 ± 11.0</td>
<td>78.3 ± 8.3</td>
<td>0.40</td>
</tr>
<tr>
<td>Male Sex, n (%)</td>
<td>61 (96.8)</td>
<td>27 (100.0)</td>
<td>0.35</td>
</tr>
<tr>
<td>Caucasian, n (%)</td>
<td>60 (95.2)</td>
<td>27 (100.0)</td>
<td>0.25</td>
</tr>
<tr>
<td>Ejection Fraction at Discharge (%)</td>
<td>45.4 ± 14.2</td>
<td>46.1 ± 12.7</td>
<td>0.82</td>
</tr>
<tr>
<td>HFrEF, n (%)</td>
<td>18 (28.6)</td>
<td>10 (37.0)</td>
<td>0.43</td>
</tr>
<tr>
<td>Coronary Artery Disease, n (%)</td>
<td>49 (77.8)</td>
<td>22 (81.5)</td>
<td>0.69</td>
</tr>
<tr>
<td>COPD, n (%)</td>
<td>18 (28.6)</td>
<td>14 (51.9)</td>
<td>0.03</td>
</tr>
<tr>
<td>Atrial Fibrillation, n (%)</td>
<td>44 (69.8)</td>
<td>17 (63.0)</td>
<td>0.52</td>
</tr>
<tr>
<td>Type 2 Diabetes Mellitus, n (%)</td>
<td>32 (50.8)</td>
<td>15 (55.6)</td>
<td>0.68</td>
</tr>
<tr>
<td>Obstructive Sleep Apnea, n (%)</td>
<td>16 (25.4)</td>
<td>16 (59.3)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Pulmonary Hypertension (%)</td>
<td>10 (15.9)</td>
<td>9 (33.3)</td>
<td>0.06</td>
</tr>
<tr>
<td>Hypertension, n (%)</td>
<td>58 (92.1)</td>
<td>25 (92.6)</td>
<td>0.93</td>
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<tr>
<td>Hyperlipidemia, n (%)</td>
<td>56 (88.9)</td>
<td>24 (88.9)</td>
<td>1.00</td>
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<tr>
<td>Depression, n (%)</td>
<td>20 (31.8)</td>
<td>16 (59.3)</td>
<td>0.02</td>
</tr>
<tr>
<td>Current Tobacco User, n (%)</td>
<td>7(11.1)</td>
<td>4 (14.8)</td>
<td>0.62</td>
</tr>
<tr>
<td>BMI (kg/m2)</td>
<td>28.8 ± 5.7</td>
<td>32.6 ± 7.9</td>
<td>0.01</td>
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<tr>
<td>Systolic Blood Pressure (mmHg)</td>
<td>126.3 ± 20.9</td>
<td>120.1 ± 19.7</td>
<td>0.19</td>
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<tr>
<td>Diastolic Blood Pressure (mmHg)</td>
<td>70.0 ± 10.2</td>
<td>66.7 ± 10.8</td>
<td>0.17</td>
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<tr>
<td>Low Density Lipoprotein (mg/dL)</td>
<td>84.1 ± 34.6</td>
<td>78.0 ± 19.7</td>
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<td>eGFr (mL/min/1.73m2)</td>
<td>49.5 ± 22.7</td>
<td>40.3 ± 15.7</td>
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<td>Serum Creatinine at Discharge</td>
<td>1.7 ± 1.0</td>
<td>2.1 ± 1.4</td>
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<td>BNP(pg/mL)</td>
<td>965.7 ± 814.5</td>
<td>664.7 ± 940.5</td>
<td>0.13</td>
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<tr>
<td>Hosp, n (%)</td>
<td>10 (15.9)</td>
<td>3 (11.1)</td>
<td>0.56</td>
</tr>
<tr>
<td>ACEi or ARB, n (%)</td>
<td>39 (61.9)</td>
<td>15 (55.6)</td>
<td>0.57</td>
</tr>
<tr>
<td>Beta Blockers, n (%)</td>
<td>(82.5)</td>
<td>23 (85.2)</td>
<td>0.76</td>
</tr>
<tr>
<td>Loop Diuretics, n (%)</td>
<td>49 (77.8)</td>
<td>26 (96.3)</td>
<td>0.03</td>
</tr>
<tr>
<td>Calcium Channel Blocker, n (%)</td>
<td>17 (27.0)</td>
<td>5 (18.5)</td>
<td>0.39</td>
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<tr>
<td>Spironolactone, n (%)</td>
<td>6 (9.5)</td>
<td>4 (14.8)</td>
<td>0.46</td>
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<tr>
<td>Isosorbide Mononitrate, n (%)</td>
<td>8 (12.7)</td>
<td>5 (18.5)</td>
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<tr>
<td>Hydralazine, n (%)</td>
<td>5 (7.9)</td>
<td>4 (14.8)</td>
<td>0.32</td>
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<tr>
<td>Thiazide Diuretic, n (%)</td>
<td>3 (3.5)</td>
<td>4 (14.8)</td>
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</tr>
<tr>
<td>Statin, n (%)</td>
<td>49 (77.8)</td>
<td>23 (85.2)</td>
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<td>Fish Oil, n (%)</td>
<td>3 (4.8)</td>
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<td>0.25</td>
</tr>
<tr>
<td>Aspirin, n (%)</td>
<td>50 (79.4)</td>
<td>20 (74.1)</td>
<td>0.58</td>
</tr>
<tr>
<td>Warfarin, n (%)</td>
<td>21 (33.3)</td>
<td>8 (29.6)</td>
<td>0.73</td>
</tr>
<tr>
<td>Direct Oral Anticoagulants, n (%)</td>
<td>3 (4.8)</td>
<td>1 (3.7)</td>
<td>0.82</td>
</tr>
<tr>
<td>Antiarhythmic, n (%)</td>
<td>4 (6.4)</td>
<td>1 (3.7)</td>
<td>0.62</td>
</tr>
<tr>
<td>Digoxin, n (%)</td>
<td>3 (4.76)</td>
<td>2 (7.4)</td>
<td>0.62</td>
</tr>
<tr>
<td>Magnesium Oxide, n (%)</td>
<td>1 (1.6)</td>
<td>3 (11.1)</td>
<td>0.05</td>
</tr>
</tbody>
</table>

All values expressed as mean ± standard deviation unless indicated otherwise

#### Figure 3. Kaplan-Meier Survival Curves for Time to All Cause Rehospitalization or Death

Kaplan-Meier curves showing the proportion of individuals without all cause hospital readmission or death over 180 days of follow-up (red curve = Ambulatory IV Diuretic Clinic; blue curve = Observational Admission <48h).

#### Figure 4. Kaplan-Meier Survival Curves for Time to Heart Failure Rehospitalization or Death

Kaplan-Meier curves showing the proportion of individuals without heart failure hospital readmission or death over 180 days of follow-up (red curve = Ambulatory IV Diuretic Clinic; blue curve = Observational Admission <48h).
DISCUSSION

In patients with mild to moderate decompressed heart failure within the 6-month follow-up period of their previous heart failure hospital discharge, ambulatory IV diuretic clinic was associated with a reduced risk of all cause rehospitalization, heart failure hospitalization or death over 180 days of follow-up when compared to patients who had an observational hospitalization of 48 hours or less during the same time period.

This finding is important because beginning on October 1, 2012, Section 3025 of the Affordable Care Act added section 1886(q) to the Social Security Act establishing the Hospital Readmissions Reduction Program (HRRP). The HRRP requires the Centers for Medicare and Medicaid Services (CMS) to reduce payments to Inpatient Prospective Payment System (IPPS) hospitals with excess heart failure readmissions.11 Thus, the American College of Cardiology Foundation / American Heart Association Task Force on Practice Guidelines added a Class I recommendation to utilize multidisciplinary heart failure disease management programs to facilitate implementation of guideline-directed medical therapy, to address barriers to behavioral modification, and to reduce the risk of subsequent rehospitalization for HF for patients at high risk of hospital readmissions.12

This work builds on a limited number of studies evaluating the safety and effectiveness of outpatient IV diuretic programs demonstrating symptomatic improvements in dyspnea, hypervolemia with low to non-existent rates of serious adverse events and has the potential to reduce hospitalizations.4,5,13 Priors studies demonstrating safety and reduction of rehospitalizations utilized board certified cardiologists to perform IV medication management.4,5,13 However, our study is unique in that the providers of the outpatient IV diuretic treatment team could be comprised of a physician, a nurse practitioner or a clinical pharmacist trained in heart failure care management interchangeably to provide IV therapy medication treatments.

There has been a push to provide novel treatment strategies of more complex patients to the ambulatory care setting. The clinical implications of the present study demonstrates the feasibility and safety of a multidisciplinary care providers to prescribe intravenous diuretic therapy and is an attractive alternative to emergency department utilization or observational hospitalizations for patients with mild to moderate decompressed heart failure. It opens up possibilities of different setting for IV diuretic clinic depending on institutional needs. The current study setting is within the outpatient oncology infusion center of the hospital. Possibilities exist for the IV therapy to be provided in a completely outpatient clinic setting or a carved-out section of an emergency room, similar to a “chest pain unit.”

There are several limitations to this study. The basic assumption of the current study is that patients who required IV diuretic therapy were similar in disease severity whether they were seen in the ambulatory IV diuretic clinic or hospitalized for 48h observation. The results remained significant despite adjustments for age, BMI and COPD which were different at baseline. However, given the retrospective nature of this study, patients were not randomly allocated to the treatment interventions for which the possibility of residual confounding exists and alternative explanation to study findings cannot be excluded.

The intervention took place at a single center within the Veterans Health Administration and the absolute number of patients is small and relatively homogenous (mostly men). Additionally, heart failure hospitalization information was unavailable for private payer non-VA admissions unless records were forwarded by a non-VA provider. Therefore, it is possible that not all hospitalizations occurring outside of the Veterans Health Administration were fully captured in our data.

CONCLUSIONS

In patients with mild to moderate decompressed heart failure, ambulatory IV diuretic clinic was associated with risk reduction of any rehospitalization or death over 180 days of follow-up when compared to a strategy of observational hospitalization for less than 48 hours. However, future research should prospectively analyze outpatient IV therapy in a larger and more diverse population.

References


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**Disclosures**

**Funding:** Wen-Chih Wu, MD, MPH, was supported by the VA HSRD grant 5I01HX001800-005. The views expressed in this publication represent that of the authors and not of the Department of Veterans Affairs.

**Conflicts:** The authors declare no conflicts of interest.

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INTRODUCTION

Telemedicine encompasses methods to deliver care using medical devices to collect and transmit health information and has become a key medium to deliver healthcare in the COVID-19 pandemic. The Veterans Health Administration (VA) was an early adapter of telehealth services starting in 2003. Prior to the pandemic, the VA had already established the nation’s largest telehealth system. The VA reports over 900,000 veterans used VA telehealth services in 2019 encompassing 2.29 million episodes of telehealth care.

The VA hospital employs a multidisciplinary chronic care model for Outpatient Heart Failure management. Important elements of this model include: 1.) Transition of Care consultation for transition between hospital and home, 2.) IV Diuretic Clinic to provide volume assessment and aggressive diuresis as indicated 3.) Shared Medical Visits to provide self-management education and pharmacologic treatment for heart failure by a multi-disciplinary team, 4.) Heart Failure Clinics to provide close follow-up to veterans at risk for re-hospitalization, 5.) Telemonitoring of weight and vital signs for patients at high risk of decompensation.

The VA has established several formats for administering care via telecardiology that are now being used increasingly under Centers for Disease Control (CDC) guidance to limit community exposure to SARS-CoV-2. We provide an example of telecardiology using heart failure management at a VA hospital in New England.

E-CONSULT (ELECTRONIC CONSULT)

If the referral is for a clinical question not requiring face-to-face interaction, it is completed via an e-consult in an asynchronous fashion. A response is provided by the e-consult team within 72 hours. This is performed through a standard clinical workstation with a desktop computer.

In contrast to other forms of telecardiology, e-consultations have seen a decline since the pandemic. The monthly average fell from 78 encounters to 58 encounters after March 2020. [Figures 1 and 2] We suspect that with all non-essential medical procedures and clinic visits on hold, there were fewer referrals from Primary Care and Surgical Services.

Sample e-consult:

Mr. C is a 67-year-old male who lives over 40 miles away from the VA with a past medical history of hypertension, hyperlipidemia, diabetes, coronary artery disease and heart failure with reduced ejection. He has gained 10 lbs. and has worsening shortness of breath for the last week, please provide recommendations.

Chart was reviewed and recommendations made for the patient to be worked up with echocardiogram and nuclear stress test. Will provide follow-up in satellite clinic through CVT.
CLINIC VIDEO TELEHEALTH (CVT)

If the patient requires evaluation but is unable to come in for a face-to-face visit, a CVT visit may be scheduled. This is a synchronous method of telecardiology that utilizes an audio-visual (AV) interface to communicate with a satellite VA clinical location.

Providers are equipped with Globalmed® telemedicine stations that run Cisco® software that allow for more streamlined communication with remote sites. [Image 1] At the off-site locations an electronic stethoscope is used with Care Tone® IP Management System software (product of AmericanTeleCare®) to transmit heart and lung sounds in real time. A high-definition camera “wand” allows attachments of lenses and to examine the integumentary system in greater detail. [Images 2,3, and Audio file]. Some locations feature the Eko Duo® that allows transmission of heart sounds and a single lead EKG in real time. [Image 4].

Image 1. A workstation equipped with a Globalmed® telemedicine station that runs Cisco® software, Cisco IP® telephone, a desktop computer, a mouse, keyboard, speakers, and a webcam with a microphone.

Image 2. A remote workstation equipped with two monitor screens, a desktop computer, a mouse, keyboard, speakers, and a webcam with a microphone. In addition, tools such as an electronic stethoscope and a wand with attachments to examine skin in detail and an otoscope are shown in more detail in Image 3.

Image 3. A closer view of the electronic stethoscope is used with Care Tone® IP Management System software and the high-definition camera “wand” allows attachment with lenses and otoscope.

Image 4. The Eko Duo® that allows transmission of heart sounds and a single lead EKG in real time.
After registering at the off-site location, the patient is accompanied to the exam room by a CVT technician who assists with the physical exam, and cardiac and pulmonary auscultation. The physician then discusses the assessment and plan with the patient and documents the visit.

This format of telecardiology has also seen a decline following implementation of community exposure precautions as it involves the patient visiting the satellite clinic in person. The monthly average has gone from 17 visits to 5 visits since March 2020 (Figures 1 and 2).

**Sample CVT visit:**
Mr. C chose to be seen in the satellite clinic via CVT as he lived greater than 40 miles away from the main VA hospital. The cardiology provider observed that Mr. C was dyspneic walking into the exam room. Testing results were reviewed with Mr. C, which showed a reduced left ventricular ejection fraction and myocardial scar with no ischemia. A physical exam was performed with the assistance of the CVT technician using the electronic stethoscope and camera wand. Bi-basilar crackles and 2+ pitting edema were noted. Guideline-directed medical therapy for heart failure with reduced ejection fraction was started, including oral diuretics. He was further scheduled for an outpatient appointment at the IV diuretic clinic the same week, where he received 1 dose of IV diuretic with 650 cc of urine output and 0.8lbs. of weight loss.

**VA VIDEO CONNECT (VVC)**
If the patient is unable to or advised not to come into the clinic or offsite location, VA Video Connect (VVC) is used. This is a synchronous format that utilizes AV to communicate with the patient at home. The patient is contacted via telephone by clinic staff to ensure they have a device capable of supporting the AV visit. If not, patients may be mailed an iPad® and in select cases, an Eko Duo® device to ensure an adequate cardiology auscultation and rhythm assessment. The patient is sent an appointment email with a link that connects to the secure call via VA VVC platform (VA Video Connect). If the patient has a smart phone or computer access, non-VA platforms can also be used such as Cisco Webex™ or Doximity Inc. There were no VVC visits prior to March 2020. Since then, the numbers have almost tripled every month with a total of 65 VVC visits in July 2020 (Figures 1 and 2).

**Sample VVC visit:**
Mr. C’s CVT follow-up appointment with cardiology at the satellite VA site was changed to a VVC appointment due to SARS-CoV-2 restrictions. Given his lack of smart phone or computer access, an iPad® with built-in Internet access was mailed to him along with an eko® device to ensure an adequate cardiology auscultation and rhythm assessment. Training for the use of the iPad® and Eko® device was provided by VA staff at the patient’s home.

**REMOTE MONITORING**
At the VA, patients who may need closer follow-up are referred to telehealth. This is an asynchronous telecardiology modality that is used to monitor heart rate, blood pressure, pulse oximetry, weight and pedometer steps. A large proportion of this population are patients with heart failure that have had a recent hospitalization for an exacerbation of the same. They are issued home monitoring technology called the In-Home Monitoring Device by Medtronic® with Internet-based transmission capability to record these measurements which are then transmitted to the VA. The device also administers a symptom-based survey of the respective disease process, in this case, symptoms of heart failure. An assigned telehealth case manager downloads the patient’s clinical data on a periodical basis (daily, weekly, PRN) into the electronic medical records on demand. If critical values were noted, the relevant provider is alerted. This format has seen the most robust increase in numbers since March 2020. From a monthly average of 255 encounters a day from August 2019-February 2020, we are now conducting an average of 458 encounters a day since March 2020 (Figures 1 and 2).

**Sample remote monitoring visit:**
After the VVC visit, Mr. C was identified as being high risk of readmission for a heart failure exacerbation. He was issued a remote monitoring device and asked to monitor daily weights, blood pressures and heart rates. On 7/15/2020 it was noted that his blood pressures were trending lower than usual along a decreasing weight, without shortness of breath. His leg swelling was reported to be down as well. The cardiology provider was alerted of this change and dose reduction in the patient’s diuretics was recommended and relayed to him by the telehealth RN. Mr. C has not visited an acute care facility during the COVID pandemic until present.

**CONCLUSION**
The VA hospital employs a multidisciplinary chronic care model for Outpatient Heart Failure management. The pandemic has made telecardiology an indispensable component of cardiology practice, outnumbering face-to-face visits. Some components of heart failure care such as IV Diuretic Outpatient Clinic are indispensable to provide volume assessment and aggressive diuresis to patients in need. Other aspects can be transitioned to a telecardiology format. Heart failure clinics are being conducted via VVC, patients requiring closer follow-up are being scheduled for remote monitoring in place of nursing visits. With the technology available it is straightforward to obtain a relevant history and physical exam.

With the current uncertain climate, we expect that telecardiology will continue to feature prominently in the delivery of cardiovascular care.
References

Disclosures
Supportive foundations: None
Author Disclosure Statement: No competing financial interests exist.

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Important Personal Values of Veterans Enrolled in Home-Based Cardiac Rehabilitation

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ABSTRACT

BACKGROUND: Home-based cardiac rehabilitation (CR) heavily relies on patients’ personal motivation to engage in behavior change. Patients’ core values (e.g., health, family) may serve as motivational factors to strengthen program engagement. This study sought to identify personal values of veterans participating in home-based CR.

METHOD: Veterans enrolled in a home-based CR program at the Providence VA Medical Center completed a self-report questionnaire assessing core values at intake and completion. Descriptive statistics and non-parametric tests (e.g., Friedman, Wilcoxon sign rank comparisons) were used to assess differences in core value ratings between intake and completion.

RESULTS: Sixty-six patients (72±7 years, 86% white, 97% male) completed the questionnaire. Patients most often rated independence (86%), family (70%), and health (67%) as important values. Value ratings did not change from intake to discharge (ps >.20).

CONCLUSIONS: Future research should evaluate whether incorporating values-based activities in home-based CR can improve patient adherence to treatment and outcomes.

KEYWORDS: cardiac rehabilitation, motivation, veterans

INTRODUCTION

Home-based cardiac rehabilitation (CR) is a supervised exercise and cardiac risk factor modification educational approach offered in the home or other nonclinical settings to eligible patients who have limited or no access to center-based CR. Home-based CR in the Veterans Health Administration represents an important accomplishment to increase service delivery capacity and offer greater logistical flexibility for veterans who otherwise would not attend center-based sessions due to transportation or employment-related timing constraints.1 In the VA system, patients receive the major components of center-based CR, including an exercise prescription and education on nutrition, stress management, and risk factor modification through weekly telephone or video contact with a CR provider over 12 weeks.2 Home-based CR most notably differs from center-based CR in that exercise supervision and behavior change coaching is provided partially or entirely remotely and therefore more heavily relies on patients’ personal motivation to engage in behavior change in light of less face-to-face provider and peer support. Patients’ core values (e.g., health, family), or guiding principles that individuals identify as personally important, may serve as motivational factors that shape adherence to cardiac risk factor modification recommendations as affirming one’s values can increase individual health behavior change.3

Prior research in a center-based cardiac and pulmonary rehabilitation (CPR) program revealed a wide variety of values that motivated program participation with only 50% of CPR attendees citing “health” as an important value driving their program engagement.4 As home-based CR represents a behavior change opportunity largely focused on improving CVD-relevant health, it may be beneficial to understand whether improving one’s health is typically identified as a personally important to the attendees. However, to our knowledge, no prior research has examined the personal core values endorsed by patients in home-based CR, which may differ from CPR participants. In addition, it is unknown whether patient-reported core values change over the course of home-based CR. For example, Ellis and colleagues reported that nearly half of their sample of CPR patients described evolving values over the course of program participation. Some patients initially prioritized health improvement or prevention of health decline, however, values were interpreted to become more variable and personalized over time.4 Others have also described values change in response to aging5,6 and life transitions.7 Greater understanding of whether patient-reported values may change following completion of home-based CR may provide additional insight into patient motivational factors that might enhance patient engagement. Therefore, we sought to (1) identify personal core values in veterans participating in home-based CR and (2) examine whether personal core values change over participation in home-based CR.

METHOD

Sample
Participants were veterans enrolled in a home-based CR program between January 2019 and June 2020 at the Providence Veteran’s Affairs Medical Center (VAMC, Providence, RI).
Measures
Demographic and clinical characteristics of the patients were collected by home-based CR staff as part of routine clinical care. Participants also completed a self-report questionnaire of their personal core values as part of clinical intake and discharge assessments. The adapted Chronic Pain Values Inventory (CPVI) measured values across eight value domains including family, friends, health, independence, hobbies/activities/work, spirituality, growth/learning, and intimate relations [e.g., “Being the kind of partner you want to be…”] on a 5-point scale ranging from “not at all important” [0] to “extremely important” [5].

Procedure
Patients were referred to home-based CR following hospitalizations with relevant diagnoses, procedures, and/or events [e.g., heart failure, myocardial infarction, coronary artery bypass grafting (CABG)] or through their outpatient cardiology provider. Upon enrollment, patients attended an in-person intake assessment with a nurse practitioner or registered nurse. At the in-person intake visit, the home-based CR staff member also provided the patient with a patient education workbook, hand peddler, pedometer, and resistance band, and provided instructions for a home-based exercise prescription. Following the initial meeting, patients received 12 weekly telephone calls from the home-based CR staff to assess their weekly behaviors related to home exercise, diet, smoking when applicable, weight, and medications. Patients are also provided with education on these topics as indicated. Phone calls lasted approximately 20–30 minutes. Patients returned to the clinic for the discharge assessment at 12 weeks. The study was approved by the Providence VAMC Institutional Review Board.

Analytic Plan
Summary statistics [e.g., means, medians, percentages] were used to describe the sample. The Friedman test was used to test differences in importance ratings across value domains. Pairwise comparisons via Wilcoxon signed rank tests with a Bonferroni correction were used to further evaluate significant Friedman tests. Analyses were conducted in Stata/SE version 14.2.

RESULTS
The demographic and clinical characteristics of the sample are provided in Table 1. Sixty-six patients [mean age 72±7 years, 86% white, 97% male] completed the adapted CPVI at intake and program discharge. Most participants were admitted to the program due to heart failure [63%]. All participants completed the 12 weekly telephone calls during the home-based CR program.

Table 1. Sample characteristics at home-based CR intake (n = 66).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (SD) or n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>72.06 (7.03)</td>
</tr>
<tr>
<td>Male</td>
<td>64 (96.70)</td>
</tr>
<tr>
<td>Race/ethnicity (n = 64)</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>55 (85.94)</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>1 (1.56)</td>
</tr>
<tr>
<td>Asian</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Non-Hispanic Other/Unknown</td>
<td>7 (10.94)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1 (1.56)</td>
</tr>
<tr>
<td>Diabetes (n = 64)</td>
<td>27 (42.19)</td>
</tr>
<tr>
<td>Hypertension (n = 64)</td>
<td>57 (89.06)</td>
</tr>
<tr>
<td>Admission Diagnosis (n = 64)</td>
<td></td>
</tr>
<tr>
<td>Heart failure</td>
<td>40 (62.50)</td>
</tr>
<tr>
<td>Coronary artery bypass grafting</td>
<td>7 (10.94)</td>
</tr>
<tr>
<td>Percutaneous coronary intervention</td>
<td>7 (10.94)</td>
</tr>
<tr>
<td>Stable angina</td>
<td>4 (6.25)</td>
</tr>
<tr>
<td>Valve replacement/repair</td>
<td>3 (4.69)</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>2 (3.13)</td>
</tr>
<tr>
<td>Peripheral vascular disease</td>
<td>1 (1.56)</td>
</tr>
</tbody>
</table>

Abbreviations. SD, standard deviation; n, number of participants

Importance of Core Values at Home-Based CR Intake
At program intake, patients reported independence [n = 57; 86%], family [n = 46; 70%], and health [n = 44; 67%] as their most important values [i.e., rated as “very” or “extremely” important] (Figure 1). Spirituality was rated as least important, with 35% rating spirituality as “very” or “extremely” important [n = 23]. Friedman tests examining the importance ratings indicated that the ratings were significantly different across the value domains, $\chi^2 (7) = 219.12$, $p < .001$. Post-hoc comparisons with a Bonferroni correction indicated that

Figure 1. The proportion of participants who rated each value domain as “very” or “extremely” important at intake and discharge (n = 66).
importance in that value domain.

Abbreviation. SD, standard deviation; IQr, interquartile range

independence was rated more highly than friends \( z = 4.642, p < .001 \), intimate relationships \( z = 3.33, p < .001 \), growth and learning \( z = -5.09, p < .001 \), hobbies/activities/work \( z = 5.49, p < .001 \), and spirituality \( z = 5.79, p < .001 \). Family was rated as more important than friends \( z = 3.98, p < .001 \), growth and learning \( z = 3.65, p < .001 \), hobbies/activities/work \( z = 4.36, p < .001 \), and spirituality \( z = 5.63, p < .001 \). Health was rated more highly than growth and learning \( z = 4.04, p < .001 \), hobbies/activities/work \( z = 3.79, p < .001 \), and spirituality \( z = 3.61, p < .001 \). Friends \( z = 3.36, p < .001 \) and intimate relationships \( z = 3.81, p < .001 \) were also rated more highly than spirituality. The importance ratings at intake are presented in Table 2.

Importance of Core Values at Home-Based CR Discharge
At program discharge, independence \( n = 59, 89\% \), family \( n = 53, 80\% \), and health \( n = 45, 68\% \) remained the value domains most often rated as “very” or “extremely” important (see Figure 1). The pattern of ratings was similar to intake with four exceptions: [1] independence was rated more highly than health at post-test \( z = 3.14, p = .002 \); [2] family was rated more highly than intimate relationships \( z = 3.67, p < .001 \); [3] health was no longer rated more highly than growth and learning \( p = .002 \); and [4] intimate relationships and growth and learning were no longer rated more highly than spirituality \( p > .002 \). The importance ratings at discharge are presented in Table 2.

Changes in the Importance of Core Values Over Time
No significant change in the importance of each core value was found from intake to discharge \( ps > .23 \), data not shown.

**DISCUSSION**
Home-based CR patients most often rated independence, family, and health as highly important values. These findings corroborate and extend prior research with center-based CPR patients showing multiform personal values identified by patients. This research, however, also showed being active, defined by the authors as “regular active engagement in physical, social, and mental tasks, hobbies, etc.” (pg. 311) was the most frequently identified value and was endorsed by approximately 70% of participants. Similarly, a national study of veterans found that “activity” was frequently included in veterans’ perceptions of successful physical, emotional, and cognitive aging. However, unlike these prior two studies, our response options were not open-ended and perhaps did not fully capture how remaining active physically, cognitively, and emotionally may be important to veterans or may be infused throughout home-based CR attendees’ other core values. Veterans in home-based CR may prioritize being active in self-defined ways that do not necessarily clearly map on to a specific hobby, occupation, or volunteer opportunity. Alternatively, uncaptured differences in health status may contribute to the lower importance placed on hobbies, work, and activities in our sample. In addition, our finding that spirituality was the value least often identified as important is inconsistent with prior research showing that religion is an important value for older adults. This finding may have been influenced by sample, geographic, cultural, or site-specific factors.

No changes in the value importance ratings were detected from home-based CR intake to discharge. It is possible that age-related value shifts identified in prior work were not observed due to the short duration of the home-based CR program. Additionally, although cardiac events and interventions preceding CR referral likely represent significant health events, and transitions for some, values shifts may have occurred prior to CR enrollment at another point during the illness course. Alternatively, veterans may enter CR with distinct prior life experiences that have cemented or stabilized their values, or uniquely alter the impact that CR has on these life priorities. Additional research is needed to clarify how veteran status or cardiac history of the sampled patients may have contributed to the observed results.

**Clinical Considerations**
Values information may be useful to clinicians to engender patient-centered care. Patients may describe themselves as motivated to engage in health behavior change for the purposes of improving their health but improving health may not be the most important value for all patients. Affirming other important values, such as independence, may also promote openness to behavior change, buffer against stress, and increase personal relevance of cardiac risk factors.
recommendations.\textsuperscript{14,15} However, additional research is needed to clarify whether values identification may create distress when patients are confronted with values for which they are not currently engaging in values-consistent behavior.

Values-based approaches are increasingly incorporated into psychotherapeutic and behavioral health settings and may offer an opportunity to further motivate behavior change through supporting patients in the identification of individualized, values-based goals. For example, Acceptance and Commitment Therapy and Behavioral Activation emphasize the importance of values-guided behavior change. Future research exploring whether and how such principles may be incorporated into the home-based CR protocol is warranted.

\section*{Limitations}
Our results should be interpreted within the context of the study's limitations. First, our sample size was small, and the results need replication in a larger sample with greater representation of persons of color and women. Second, our results may not generalize to non-veteran samples and center-based CR patients. Third, our self-report survey included limited response options of value domains. Other values not captured by this tool may also be relevant. Future research should examine whether different values or value patterns are associated with CR outcomes. If so, values assessment may assist clinicians in identifying patients at risk of sub-maximal benefit in the context of competing life priorities.

\section*{CONCLUSIONS}
Independence, family, and health are important values for veterans enrolled in home-based CR. Future research is warranted to better clarify how identifying individualized core values can assist home-based CR clinicians in delivering patient-centered care and supporting values-driven goal setting as part of cardiac risk factor modification recommendations for veterans.

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\section*{Disclosures}
\textbf{Funding:} Emily C. Gathright, PhD, was supported by K23AG061214-01A1 from the National Institute on Aging. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. Wen-Chih Wu, MD, MPH, was supported by the VA HSRD grant S101HX001800-005. The views expressed in this publication represent those of the authors and not of the Department of Veterans Affairs.

\textbf{Conflicts:} The authors declare no conflicts of interest.

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Transition to Home-Based Treatment Plans for Center-Based Cardiac, Pulmonary, and Vascular Rehabilitation during COVID-19

HAYDEN RILEY, MS; LOREN STABLE, MS; WEN-CHIH WU, MD, MPH

ABSTRACT

BACKGROUND: Traditional rehabilitation services, whether they are cardiac, pulmonary, or vascular, consist of 6-36 center-based, supervised sessions; however, due to COVID-19, in-person visits were suspended. This study sought to implement a transitional home-based treatment plan (HBTP) to patients.

METHOD: Patients enrolled in a rehabilitation service at the Miriam Hospital during the time of temporary closure were provided with a HBTP that was individualized to their needs and multi-disciplinary in nature. Patients were called weekly for continual guidance and support.

RESULTS: Of the 129 patients that received a HBTP, 115 (89%) participated in follow-up correspondence (63±12 years, 83% white, 66% male, 81% enrolled in cardiac rehab). Nearly 70% of patients continued to participate in regular exercise and upon re-opening, 69 (60%) of patients returned to center-based care. Psychosocial factors appeared to inhibit treatment adherence.

CONCLUSIONS: Patients are receptive to an HBTP and subsequent follow-up throughout temporary closure of rehabilitation services.

KEYWORDS: home-based cardiac rehabilitation, pulmonary rehab, vascular rehab, COVID-19

INTRODUCTION

Cardiac (CR), pulmonary (PR), and vascular (VR) rehabilitation are evidence-based, secondary prevention programs comprised of behavior modification and health education. The following rehabilitation services provide patients with a continuum of care following the diagnosis of heart disease, lung disease, and peripheral vascular disease, in order to reduce rates of morbidity and mortality.1

Standard cardiac rehabilitation services in the US include 6 to 36 in-person sessions to be completed over the course of 18 to 36 weeks depending on program involvement and payer coverage. Programs are usually center-based and do not traditionally involve home-based delivery of care; however, due to COVID-19 and consequent stay-at-home orders, many rehabilitation programs were temporarily suspended. As a result, we described the implementation of a quality improvement (QI) initiative in the setting of COVID-19 based on the Plan-Do-Study-Act (PDSA) cycle.2 The QI initiative was two-fold: [1] preparation and distribution of individualized, home-based treatment plans, and [2] weekly follow-up support and interventions provided by a clinical staff person. The primary purpose of the present QI intervention was to ensure the health and safety of the patient population during temporary closure, while continuing to provide secondary prevention guidance and support to maintain a healthy lifestyle.

METHODS

This is a retrospective report of a QI intervention based on the Deming’s PDSA cycle to implement home-based treatment plans for patients enrolled in center-based rehabilitation services at a city site in Rhode Island during a temporary closure between April 6, 2020 and May 27, 2020.

An enrolled patient was defined as a patient that participated in 1 to 11 week(s) of cardiac, pulmonary, or vascular rehabilitation. As of March 31, 2020, center-based rehabilitation services were temporarily suspended due to COVID-19 guidelines and restrictions. At this time, enrolled patients met with their assigned case manager, in person or on the phone, to discuss a temporary home-based treatment plan. A personalized treatment plan was designed for each interested patient and then provided to the patient via mail or e-mail. Upon receiving the treatment plan, patients were called weekly by a staff exercise physiologist for follow-up care.

Home-Based Treatment Plan (HBTP)

A treatment plan was developed for all patients enrolled in a rehabilitation service and was tailored specifically to their needs based upon their referring diagnosis, whether it be cardiac, pulmonary, or vascular, as well as their comorbidities, fitness level, access to home exercise equipment or community resources and their goals. Regardless of diagnosis, each treatment plan consisted of three main domains: exercise, nutrition and psychosocial recommendations.

Within the exercise domain, patients were provided with specific exercise recommendations based upon their entry graded exercise test if applicable, the Frequency, Intensity, Time and Type (FITT) principle, instructions on how to gauge exercise intensity using rating of perceived exertion...
[RPE] and heart rate, online exercise resources, and printed resources, including an exercise tracker. Online exercise resources included: “Staying Active during the Coronavirus Pandemic” from the American College of Sports Medicine (ACSM) and videos pre-recorded by the center that were published to the rehabilitation center’s private YouTube® channel [www.youtube.com/channel/UCGsvzn92NlzpwrktMTRLgw]. Printed resources included staff-created handouts regarding safe home exercise. The exercise tracker, on paper, provided patients with an opportunity to record their exercise activity, workload, duration, RPE, heart rate, pain level, and additional notes regarding specific dates. Mobile phone applications used to track exercise were encouraged on an individual basis during follow-up phone calls if a patient was interested and capable.

Within the nutrition domain, the staff dietician provided “quick quarantine nutrition tips,” various pre-recorded nutrition lectures posted to the centers private YouTube® channel, an abundance of online nutrition resources, a weight tracker, and a food log. Online nutrition resources included: My Fitness Pal®, Calorie King®, Healthy Dining Finder®, Diabetes Food Hub®, nutrition information from the American Diabetes Association, recipes from the American Heart Association, The Garden Grazer® recipes, Minimalist Baker® recipes, Nutrition News® and 2020 Dietary Guidelines. The weight tracker provided was a paper log used to describe the patient’s weight on a day-to-day basis and track weight fluctuations. The food log provided patients with a way to record on paper the foods they consumed on each day of the week. Patients were asked to provide specific brand names, sizes, amounts, among other details. Patients were encouraged to follow the template during closure for review by the staff registered dietitian upon rehabilitation re-opening for in-person participation.

Lastly, within the psychosocial category, patients were provided with “Stress Coping Plan for the COVID-19 Pandemic” written by Joel Hughes, PhD, FAACVP, as well as “Keys to Embarking on a Path Toward Reduced Stress and Improved Well-Being” by Mindy, Caplan, ACSM-EP. Online resources, such as Gentle Chair Yoga for Beginners & Seniors® were included, along with phone applications and online resources for guided relaxation [Headspace®, Calm, Mindful.org, Mindbodygreen.com]. Instructions on how to start meditation were provided, as well as a paper log that could be used to record the type of relaxation/meditation practiced, and the time spent practicing.

Additional information regarding COVID19 guidelines as it applies to execution of the rehabilitation recommendations, medication compliance, symptom management, self-management tips of diabetes, heart failure and hypertension; energy conservation strategies on activities of daily living, oxygen use and tobacco use, were provided on an individualized basis where applicable. Lastly, the HBTP was provided in conjunction with an education book titled, Living Well with Heart Disease or Living Well with Chronic Lung Disease, depending on the patient’s diagnosis.

Follow-up Care
Follow-up contact was provided primarily via telephone; however, email was also used if preferred. Patients were contacted at least one time per week. If contact could not be established within the first three attempts, no further attempt to reach the patient was made.

When a patient was contacted, they were first asked, “What are some of the challenges that you are facing being home every day?” In addition, patients were asked to report their exercise participation, nutrition choices, weight, mental health, and patient-specific goals, such as the management of symptoms, diabetes, heart failure, blood pressure, tobacco use, where applicable, similar to the themes covered during exercise and education sessions by the patient’s case manager during the in-person rehabilitation sessions. Additional support and resources were provided to the patient, as needed, and a summary of each call was transcribed into the patient’s medical record. Clinical changes were tracked and documented per patient self-report.

Management supervision
Each week, the management of the rehabilitation services facilitated a conference call with the clinical staff to discuss how to improve follow-up care based upon patient progress and barriers. As a result, a list of resources was compiled and distributed to the staff to aid in patient phone calls for subsequent weeks.

RESULTS
Of the 129 patients that were mailed a HBTP package, 120 (93%) responded to follow-up care on at least 1 occasion. Of those 120 patients, 5 (3%) deferred weekly follow-up care, resulting in 115 patients (89%) that were called or contacted by email weekly throughout the closure period. Reasons for deferring follow-up included: lack of interest [2], confidence in ability to progress independently [2], and disinterest in CR services due to copay for center-based program [1] despite these sessions being free to the patient. As a group, the 115 patients were 63 years old (± 11.8), 66% male [n = 76], and 83% white [n = 96], with 93 (81%) enrolled in CR. On average, each patient communicated with a clinical staff person 4 to 5 times (4.56) over the 7-week closure.

Assessment of treatment plan adherence
Of the 115 patients, 80 (70%) reported participating in regular, weekly, home-based exercise. Home-based exercise varied from patient to patient depending upon individual exercise capacity and access to exercise equipment; however, exercise ranged from 2–7 days of participation per week. In addition, 78 patients (68%) tracked one or more
of the following metrics: weight, diet, blood pressure, blood glucose, heart rate, and/or oxygen saturation, with weight being the most commonly tracked variable (69 patients, 60%). Additional resources were provided to patients based upon their personal interests, goals, and reported barriers. Most commonly, patients were provided with additional exercise resources, such as home-exercise handouts, online videos, mobile phone applications, among the most common ones (34 patients, 30%) to overcome the barrier of limited exercise capabilities at home. Furthermore, 25 patients (22%) received additional educational materials, via email or the center's YouTube® channel, beyond what was provided in their HBTP to provide additional support related to patient-specific goals and/or barriers.

For individuals who expressed concern with their weight (8 patients, 9% of CR patients), an online weight loss research study particular to CR patients was offered. Of those 8 patients, 6 gained weight and 2 lost weight, which resulted in an average weight gain of 1.3lbs. For patients that were recent or current tobacco users (18, 16%), tobacco treatment or relapse prevention counseling was provided by a tobacco treatment counselor. As a result, 3/18 patients received smoking cessation pharmacotherapy [1: varenicline, 1: bupropion, 1: nicotine replacement].

**Barriers to treatment adherence**

**Psychosocial:** after three weeks, in response to a common theme of patients having difficulty coping with stress, anxiety, depression and isolation surrounding COVID-19, a fee-for-service virtual group therapy intervention was established. As a result, 13 patients (11%) were referred to participate. There were 6 patients interested in participating; however, only 2 patients completed the 6-week program. Reasons for not participating included: insurance co-payment and lack of interest in group therapy. Patients (11, 9%) were also referred to a hospital-based therapy access line which provided patients access to an on-call fee-for-service 1:1 therapy session.

**Physical:** 11 patients reported various limitations/injuries (i.e. back pain, shoulder pain, leg pain/claudication, tendon tear) that limited their participation in exercise.

**Clinical Changes during closure period**

By self-report, 6 patients (5%) were tested for COVID-19; however, no patients tested positive. Despite no hospitalizations due to COVID19, 5 (4%) patients were hospitalized for the following reasons: a mechanical fall (2), stomach pain, kidney stones, and chest pain, respectively. The patient who was hospitalized with chest pain underwent successful percutaneous coronary intervention with three drug-eluting stents, and one patient that fell had to undergo a hip replacement. Of note, 2 additional patients reported chest pain, both were in contact with their physicians; however, one passed away at home due to cardiac arrest, and the other was medically managed.

**Return to cardiac, pulmonary or vascular rehabilitation after re-opening**

Overall, 60% (69) of patients returned to rehabilitation services: 56 (81%) CR, 16 (11%) PR and 2 (3%) VR when in-person care was reestablished. Comparison of patients who returned versus those who did not showed that there were no significant associations between gender ($p = 0.17$), race ($p = .41$), or specialty (CR, PR or VR) of rehabilitation service provided ($p = .92$) and return to center-based care upon reopening. However, the number of times in which a patient was contacted was significantly associated with a higher likelihood of a patient’s return to rehabilitation services upon reopening ($p < 0.001$).

**DISCUSSION**

The following QI initiative was based upon Deming’s Plan, Do, Study, Act Cycle as shown in Figure 1. From this project, we learned that close to 90% of patients participating in cardiac, pulmonary, or vascular rehabilitation, are receptive to participating in home-based rehabilitation services in the setting of a temporary closure, such as COVID-19 stay-at-home orders. Approximately 70% of the patients were responsive to follow-up phone calls and were willing to track their individual progress in one or more areas. As a result, upon the re-opening of rehabilitation services, more than half of the patients returned to the center-based program.

In the setting of a pandemic recurrence, it appears that a home-based treatment plan is a feasible option to bridge...
the gap of a temporary suspension of center-based care. Follow-up contact should be consistent and frequent to ensure adherence and re-enrollment upon the reopening of in-person services. Similar to in-person visits, treatment plans should be individualized and include psychosocial interventions, such as individual or group support sessions.

References


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Disclosures

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Cardiac rehabilitation (CR) is a critical component of the continuum of care for cardiovascular patients and includes physician-supervised exercise, patient counseling and education to address risk factors for cardiovascular disease, and social support. The effectiveness of center-based CR is well established, and the benefits include reduced mortality and rehospitalizations, improved physical functioning, fewer depressive symptoms, and increased quality of life. The social distancing recommendations to reduce the spread of COVID-19, however, has made it necessary to close, alter, or limit the availability of center-based CR services. Avoiding close-contact settings, confined and enclosed spaces, and limiting contact with other people are essential to preventing COVID-19 transmission, especially among people with underlying medical conditions such as heart failure or coronary artery disease. Nonetheless, measures used to mitigate the spread of COVID-19 concomitantly increase cardiac patients’ risk for poor physical and mental health. Furthermore, social isolation during the COVID-19 pandemic is a serious public health concern given the association between loneliness and poor cardiovascular and mental health outcomes. Home-based programs can mitigate these health risks by offering remote coaching, supervised exercise training, and support to cardiac patients during the COVID-19 crisis. Home-based CR programs have been successfully used in other countries (e.g., Australia, Canada, United Kingdom) but have largely been limited (with some exceptions, e.g., Kaiser Permanente HMO) in the United States to patients in the Veterans Affairs (VA) Healthcare System. Unlike many center-based programs outside the VA, home-based CR programs within the VA continued and, in some cases, were extended to veterans receiving center-based CR during the COVID-19 pandemic. While the Centers for Medicare and Medicaid Services (CMS) expanded reimbursement for telehealth coverage for patients during the COVID-19 pandemic, reimbursement for home-based CR was not included. The ongoing social distancing efforts to mitigate the transmission of COVID-19, and the lack of CMS reimbursement for home-based CR, has resulted in delayed critical secondary prevention services as patients are waitlisted due to prolonged center closures or reduced access to in-person rehabilitation services. Concerns about the safety and efficacy of home-based CR may contribute to the reluctance to offer the program to all patients but meta-analyses of randomized controlled trials showed that home-based CR is as safe as center-based CR and associated with reduced rehospitalizations or cardiac events relative to usual care (RR = 0.56, 95% CI = 0.39, 0.81, p < .001). These benefits strongly suggest that home-based CR should be considered for all patients eligible for center-based CR to minimize the care gap during the COVID-19 pandemic. As others have asserted, “there is no better time than now” for providers to explore new approaches to deliver cardiac rehabilitation programs.

The social distancing required to mitigate the transmission of COVID-19 conflicts with the innate human need for social connection, which may increase loneliness. Innovative methods to enhance social connectedness during home-based CR will be critical for keeping patients motivated and healthy until a vaccine for SARS-CoV-2 becomes available. While technology is vastly underutilized in the management of cardiovascular diseases, the COVID-19 pandemic has renewed interest in the use of innovative strategies to provide ongoing care. The growing popularity of digital health technology such as smartphones, video-based platforms, and social media, and the social distancing required to avoid spreading COVID-19, presents a unique opportunity to engage and motivate home-based CR patients while promoting social connection.

Many technology tools are readily available to the healthcare community at low or no cost to the CR provider or patient. Facebook, for example, is the largest freely available social media platform with more than 2.5 billion monthly active users worldwide. Seven out of ten U.S. adults are Facebook users with 74% visiting the site at least once per day. Facebook is the most popular social media platform across all age groups. It has also become an important source of health information with 90% of users ≥50 years of age using Facebook to find and share health information. Furthermore, Facebook has become an important tool to share information about COVID-19 with 74% of the public posts sharing news articles on COVID-19. Users are not only sharing information about COVID-19 on their Facebook feeds but they are also using other features of the platform, such as Facebook Groups, a place to communicate with others about common interests, to connect with family, friends, and neighbors while socially distancing. Identifying credible groups is critical to enhancing knowledge, increasing motivation, and forging social connections. Thus,
social media groups that are facilitated and moderated by the health care team may offer home-based CR patients the opportunity to share and receive accurate, real-time information to support disease management and social connections while reducing their risk for COVID-19.

Social media platforms offer the additional advantage of enhancing patient care by enabling providers to provide ongoing support to their patients. Healthcare providers can interact directly with patients by sharing critical information on cardiovascular risks via text or infographics, responding to posted messages, and engaging with patients using a live video streaming tool to support healthy behaviors. Recommendations\(^\text{12}\) on the adaption of health-related interventions for social media delivery can guide the process: closed or private groups allow for the content and activities to only be shared among individuals invited to participate in the group; content must be adapted to align with how users interact with the platform, and participants must be trained to optimally use the platform; moderators can facilitate the flow of content to the group, and provide reminders regarding privacy and personal safety to participants; and peer “champions” can be trained to motivate and engage with other patients and to support healthy social behaviors. Implementation of a group to support home-based CR patients can not only support patients during the COVID-19 pandemic but may also bridge the gap between the adoption of new behaviors and implementation within patients’ home, work, and community environments.

Clinical care is often slow to change, requiring extensive study often over a long duration. The COVID-19 pandemic changed healthcare delivery and afforded clinicians and researchers a rare opportunity to rapidly explore innovative tools, methods, and approaches to deliver cardiac rehabilitation to all cardiac patients. Now is the time to show how cardiac rehabilitation that uses modern methods to promote social connectedness can improve cardiac outcomes during the COVID-19 pandemic and beyond.

References

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Disclosures/Conflicts
None

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An Errant Sheep in Wolf’s Clothing
ANDREW HSU, MD; NANCY FREEMAN, MD

KEYWORDS: CMV, mononucleosis, atypical lymphocytes, lymphoproliferative disorder

A 27-year-old healthy male had routine bloodwork done for his PCP. CBC (normal in 2017) was remarkable for a WBC of 11,900 k/cmm with 38% lymphocytes, 44% atypical lymphocytes. Smear review by pathology noted “intermediate to large lymphoid cells, with irregular nuclei, variably dispersed chromatin, nucleoli, scant to abundant basophilic cytoplasm with occasional vacuoles, suspicious for a lymphoproliferative disorder (LPD); an occasional myelocyte, a few tears cells, and rare nucleated RBCs suggestive of bone marrow involvement.” AST/ALT were elevated at 147/383 U/L, LDH 257 U/L. Hematology was consulted and smear was notable for rare tear cells, no nucleated RBCs, no organisms, increased monocytes and atypical lymphocytes with more open cytoplasm, Döhle bodies, and vacuoles, without early cells, all suggestive of a viral illness. ([Figure 1]) The patient noted fever, chills, headache, and diarrhea for 10 days prior to his CBC. Patient denies recent consumption of shellfish/seafood, sick contacts, and had three negative COVID tests. The patient did not present for a physical exam due to concerns over COVID.

Though a follow-up CBC was suggested with peripheral flow cytometry if persistently abnormal, a flow was done and negative for any LPDs. Viral studies (EBV, toxoplasmosis, hepatitis) were negative, but the CMV IgG was >10 U/mL. The patient improved and one month after the onset of his illness, his lab work normalized.

The number of atypical lymphocytes on the original smear was higher than anticipated for a viral etiology (normally >10%), interestingly this may persist for many months (2–11 months) after the symptoms resolve. CMV only accounts for 5–7% of mononucleosis syndromes. After hematology and clinical review, a potentially devastating LPD turned out to be an uncommon, but well-described viral syndrome.

Figure 1. (A–C) atypical lymphocytes with intermediate to large lymphoid cells, irregular nuclei, cloverleaf nuclei (Panel A), variably dispersed chromatin, nucleoli, scant to abundant basophilic cytoplasm with occasional vacuoles (x100 objective, total magnification x 1000); (D) myelocyte with atypical lymphocyte (x100 objective, total magnification x 1000); (E) neutrophils with Döhle bodies (x100 objective, total magnification x 1000); (F) smudge cell and neutrophil with Pelger-Huet anomaly (x100 objective, total magnification x 1000).
References

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Massive Hemothorax from Bronchial Artery Bleeding after Endobronchial Ultrasound Transbronchial Needle Aspiration

MICHAEL KWOK, MS; LINDSEY MORAN, APRN-BC; THOMAS NG, MD

ABSTRACT
Endobronchial ultrasound (EBUS) with transbronchial needle aspiration (TBNA) is performed with a very low complication rate. We present a unique case of massive life-threatening hemothorax from bronchial artery bleeding after EBUS-TBNA, presenting in a delayed fashion and requiring operative intervention. Although exceedingly rare, along with the unusual delayed timing of the presentation, practitioners should be aware of this complication. It may be helpful to perform EBUS with color doppler examination of the subcarinal space to identify and avoid bronchial arteries prior to TBNA of subcarinal lymph nodes.

KEYWORDS: hemothorax, hemorrhage, EBUS

INTRODUCTION
Endobronchial ultrasound (EBUS) with transbronchial needle aspiration (TBNA) is commonly performed to biopsy thoracic lymph nodes for diagnosis and for staging of lung cancer. Reported complication rates are low, in the range of 1% or less, most common being airway hemorrhage and mediastinitis. Here, we report a unique case of massive hemothorax, with delayed presentation, requiring surgical intervention after EBUS-TBNA, to raise awareness of this exceedingly rare complication.

CASE REPORT
A 63-year-old male presented for an initial pulmonary evaluation given his medical history of dyspnea, chronic obstructive pulmonary disease, and tobacco dependence. He denied history suggestive of coagulation disorder and denied use of anticoagulant or antiplatelet therapy. He underwent screening CT scan, finding a 3.4 cm central left lower lobe lung mass which was followed up with a PET scan, showing this mass to be the only site of activity with standard uptake value of 10.5 (Figure 1). Bronchoscopy was then performed confirming the presence of a left lower lobe endobronchial mass, which was biopsied by fine needle aspiration. At the same time, EBUS was performed to stage the mediastinum, with a 1.5 cm subcarinal node undergoing TBNA with four needle passes. The right and left paratracheal nodes were reported as being exceedingly small; therefore, no biopsies were taken at these stations. Ultimately pathology of the endobronchial and subcarinal node biopsies revealed adenocarcinoma, lung primary, with thyroid transcription factor -1 positive on immunohistochemistry staining.

The next day, approximately 30 hours after the procedure, the patient presented to an outside hospital with complaints of weakness, dyspnea and chest pain. He was found to be hypotensive and hypoxic. Concerned for pulmonary embolism, CT scan with contrast was performed, finding no pulmonary embolism but a large right hemothorax, large mediastinal hematoma, and bleeding from a bronchial artery as indicated by active contrast extravasation (blush) seen in the subcarinal space (Figures 2a, 2b, 2c). With this finding, the patient was intubated and transfusion of packed red blood cell was initiated for transportation to a tertiary-care hospital for thoracic surgical management. Upon transfer to our hospital, the patient was taken to the operating room where he underwent right thoracoscopy, evacuation of hemothorax, and ligation of bronchial artery. Postoperatively, the patient slowly recovered and was discharged 15 days after surgery. He had received a total of 4 units of packed red blood cell transfusion. Currently he is undergoing concurrent chemotherapy/radiation for his advanced-stage lung cancer.

Figure 1. Positive Emission Tomography scan shows an avid 3.5 cm central left lower lobe lung mass (arrow).
EBUS with TBNA is generally considered a well-tolerated procedure with large series and systematic reviews reporting complication rates around 1% or less.\textsuperscript{1-3} The complication of thoracic hemorrhage (as opposed to endobronchial hemorrhage) is exceedingly rare, with only two known case reports describing non-life threatening small mediastinal hematoma or hemothorax, which were self-limiting, without the need for blood transfusion or surgical intervention.\textsuperscript{4-5} Our unique case is based on the massive life-threatening nature of the hemothorax and the 30-hour delay in presentation, requiring surgical intervention.

Contrast CT showed bleeding from bronchial artery, as indicated by the active extravasation (blush) seen (Figure 2). The delayed aspect of the presentation was likely due to the slow but continuous bleed from this small-sized artery, as opposed to the higher rate of bleeding from a larger-sized great vessel of the thorax. Bronchial arteries typically carry 1% of the cardiac output but when hypertrophied, as in situations of large and/or central tumors, they can carry up to 18 to 30% of the cardiac output.\textsuperscript{5} Therefore, it may be appropriate to examine the subcarinal space in detail for bronchial arteries using EBUS with color doppler prior to TBNA of subcarinal nodes; similar to evaluating for the azygous vein, pulmonary artery or aorta when preparing to biopsy other nodal stations.\textsuperscript{5} Although the benefit of this practice would be difficult to prove statistically due to the rareness of the event, it does makes sense and has little to no downside.

In conclusion, we present a unique case of massive life-threatening hemothorax from bronchial artery bleeding after EBUS-TBNA of a subcarinal lymph node. The patient presented in a delayed fashion and required surgical intervention. With this case report we hope that practitioners will be mindful of this rare but devastating complication, that it may present in a delayed fashion, and to consider inspection of the subcarinal space for bronchial arteries using EBUS with color doppler prior to TBNA of subcarinal nodes.

References

Figure 2. Contrast CT scan shows bleeding from bronchial artery as indicated by the active contrast extravasation (blush) seen in the subcarinal space (arrow), along with large mediastinal hematoma and hemothorax, a) axial image, b) coronal image, c) sagittal image.
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Disclaimers
Conflicts of Interest: None
Funding: None

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Responding to COVID-19 in an Uninsured Hispanic/Latino Community: Testing, Education and Telehealth at a Free Clinic in Providence

KATHERINE BARRY; MEGHAN MCCARTHY; GILLIAN MELIKIAN; VALERIE ALMEIDA-MONROE, MSN, APRN, NP-C; MORGAN LEONARD; ANNE S. DE GROOT, MD

ABSTRACT

The COVID-19 pandemic has exacerbated the effects of existing health disparities throughout the United States. While Hispanic/Latino individuals account for only 16% of the Rhode Island (RI) population, Rhode Island Department of Health (RIDOH) data show that 45% of COVID-19 cases and 36% of individuals who have been hospitalized identify as Hispanic/Latino. Clínica Esperanza/Hope Clinic (CEHC) mobilized a comprehensive effort to offer telehealth visits, health education and accessible, walk-up COVID-19 testing for low-income, uninsured and Spanish-speaking individuals living in Rhode Island. With support from CEHC volunteers, the City of Providence, the State of Rhode Island, and local foundations, CEHC has administered 1,649 individual COVID-19 tests as of October 2020. The overall COVID-19 test positivity rate at CEHC was 23%, peaking in April at 48%. Additionally, CEHC has distributed more than 1,600 meal boxes to patients experiencing food insecurity, provided emergency financial resources, while rapidly scaling up healthcare services for the increasing numbers of uninsured individuals in RI.

KEYWORDS: COVID-19, free clinics, immigrant health, Hispanic/Latino Community

INTRODUCTION

Clínica Esperanza/Hope Clinic (CEHC) is a free healthcare clinic that was established on the West Side of Providence in 2010 to provide healthcare to uninsured Rhode Island (RI) residents. Over the past decade, CEHC has provided walk-in healthcare, primary care clinics and specialty healthcare services, health education programs, and community outreach screenings to the local community. CEHC and its staff, which is comprised of 30 active volunteer providers, several nurses, and 10 medical assistants (MAs) and healthcare workers, all of whom have become a trusted source of care for a vulnerable population of largely low-income, Spanish-speaking immigrants from Central and South American countries. The number of patients seen at CEHC has grown significantly, mostly by word of mouth, from approximately 500 patients in 2010 to its current size, serving more than 3,000 patients in 5,000 visits per year. Most CEHC patients are uninsured because they are ineligible for subsidized or public medical insurance because of their immigration status or because they do not earn sufficient income to pay for employer-based or private insurance.

Due to many disparities in access to care, health literacy and chronic disease rates, CEHC’s patients belong to a community that is especially vulnerable to COVID-19. According to RIDOH, Hispanic/Latino adults have the highest rates of uninsurance (41.2%), of reporting not having seen a doctor in the past year (29.3%) and of experiencing financial barriers to healthcare (31.3%) when compared to all other racial and ethnic groups in RI. Due to this lack of access to regular healthcare services, many individuals in this population do not engage in regular preventive health screenings and therefore suffer from undiagnosed and/or unmanaged chronic diseases. These healthcare disparities are even more pronounced among CEHC’s uninsured patient population. About 30% of patients seen at CEHC are diagnosed with pre-diabetes or diabetes; 48% have hypertension and 76% are overweight or obese. Nearly three-quarters of patients report a household income of less than $15K per year, and 80% are Spanish-speaking.
The health disparities experienced by CEHC’s patient populations are highlighted in COVID-19 prevalence and incidence data collected by RIDOH. The ZIP codes that CEHC primarily serves (02909, 02908, 02907) have seen the highest number of cases in RI. In the city of Providence, as of early June 2020, the rate of positive tests has been as high as 20%, which was much higher than the average rate of about 10% in the state as a whole. Hispanic/Latino individuals account for only 16% of the RI population (2018 ACS one-year) but 45% of COVID-19 cases and 36% of individuals who have been hospitalized to date are Hispanic.

This article provides a brief synopsis of CEHC’s efforts to expand access to COVID-19-related public health information, testing and other healthcare access during the first six months of the pandemic. In addition, data from six months of offering testing at CEHC’s site are presented here, with a discussion of the major risk factors and structural determinants of health that have led to the disproportionate impact of COVID-19 on the CEHC patient population.

METHODS

CEHC’s Early Response

Beginning in early March, a few days after the first COVID-19 case was identified in RI, CEHC implemented screening procedures of all patients entering the clinic, including temperature checks, symptom screenings and travel-related questions. CEHC also employed a SMS text messaging system (CareMessage) and called patients who had scheduled visits to inform them of screening procedures and that ill patients were requested to call from their homes to discuss their symptoms prior to coming to the clinic. As additional risk factors for COVID-19 were identified, the clinic visit screening procedures were revised and updated.

COVID-19 Testing

Beginning in mid-March, the medical advisory board began collaborating with RIDOH to establish a COVID-19 testing on-site at CEHC to promote access for patients who were unlikely (or unwilling) to gain access to the federally funded testing sites. Walk-up/drive-up testing for COVID-19 at CEHC began on April 13, 2020 and is ongoing as of the time of this publication. On average, 20 testing appointments are available per day, typically during designated times [Monday–Friday from 4–9 PM and Saturday from 2–6 PM]. Early on, testing was limited to individuals who had risk factors for COVID-19, such as close contact with someone positive for COVID-19. With funding from the City of Providence, CEHC was able to expand capacity to test anyone who requested one in May. Testing is currently available to all who request it at CEHC, regardless of whether they are an established CEHC patient.

Patients in need of testing are required to contact CEHC staff ahead of time to schedule an appointment for testing, but same-day testing is often available. Screening for COVID-19 risk factors and health provider information is documented prior to the visit by CEHC volunteers [Brown University medical students]. PPE and COVID-19 testing materials are provided by RIDOH. COVID-19 testing is performed outdoors under a tent in front of the clinic door, where nurses and community health workers (CHW) wearing full personal protective equipment (PPE) approach each car (or individuals who have walked up to the door for their appointment) to collect a nasopharyngeal specimen for testing.

COVID-19 Health Education and Outreach

CEHC also began conducting Spanish-language education and outreach to patients and the surrounding community members. CEHC posted signs in Spanish and sent out text messages to patients about COVID-19 in Spanish, while providing links to informative websites for patients on topics like social distancing guidelines, common COVID-19 signs and symptoms and preventive measures to reduce the risk of contracting COVID-19. In addition, CEHC volunteers, staff, and the Chairman of CEHC’s Board of Directors advocated with the Governor of Rhode Island and RIDOH for making RI-specific information about COVID-19 resources available to Spanish-speaking individuals.

Educational pamphlets on COVID-19 infection and self-quarantine are also provided to patients when they arrive at the clinic for drive-up testing. These pamphlets provide patients with information about how and when to self-quarantine, the practice of social distancing, and the importance of wearing masks and hand washing.

When test results become available, bilingual and bi-cultural CHWs [Navegantes] call each patient and advise them based on the test result. If they test positive, patients are advised to follow RIDOH and CDC guidelines related to self-isolation and quarantine. If the test comes back negative, they are advised to continue monitoring themselves for symptoms and counseled on how to take appropriate safety measures.
Telehealth
Beginning in mid-March, efforts were underway to implement telemedicine at the clinic, and by April, the majority of visits were being carried out by telemedicine in order to best protect the health of staff, volunteers, and patients at CEHC. Communicating with patients virtually presents a particular challenge in this population, where low-income families may not have reliable access to the Internet or the appropriate level of literacy to use certain services. CEHC providers use video platforms such as Zoom, Skype, or FaceTime, and confirm before they begin that each patient feels comfortable with the visit occurring virtually. Navegantes are available to assist clinicians with the telemedicine visit; introductions are made at the beginning of the visit to notify the patient that an interpreter, nurse, or other staff member is present during the visit.

While not ideal in some ways, telehealth visits enable CEHC providers to safely follow up with COVID-19 positive patients more regularly (approximately every three days), without placing clinic staff and patients at risk. During telehealth visits, CEHC providers were also able to educate patients about the importance of participating in the Census, and to understand their needs relating to food and rental assistance. Between April and September, 441 patients have been seen in 643 telehealth visits.

Food Insecurity
Food insecurity is a growing issue among low-income families in the midst of the closure of schools and the economic recession caused by the pandemic. CEHC partnered with the City of Providence, The Elisha Project (a Providence-based community organization) and the RI Food Bank to provide food for patients that screened positive for food insecurity during the intake process for COVID-19 testing. Food donations are able to be picked up at the clinic or delivered to patients’ homes. Brown University medical students worked with the clinic Navegantes to deliver food to quarantined patients. As of mid-September, 1,638 meal boxes have been given out since the beginning of the COVID-19 pandemic; this includes 233 boxes delivered to homes, 650 boxes given at outreach events, and 760 boxes handed out at the clinic.

RESULTS
Through October 1, 2020, 1,649 individual COVID-19 tests had been conducted at CEHC. Some of these corresponded to patients who had multiple tests in that time period, and only the responses from the first testing encounter were included for analysis. Data reported below include the 1,029 tests for which a valid result (positive or negative) had been received by September 18, 2020.

Demographics
As seen in Figure 1, of the individuals whose valid test results had been reported to CEHC at the time of analysis, 47% were female and 53% were male. Over 80% of individuals tested self-identified as Hispanic/Latino, which is similar to the demographic composition of the CEHC patient population and the surrounding community. Ages were widely varied [range = 15-92], with the majority of patients reporting an age between 25 and 54 years. Positive test rates for each age group can be seen in Figure 2.

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<td>Female 482</td>
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<td>Not Insecure 632</td>
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Figure 1. Demographics
Number of tests completed (bars) and positivity rate (dots) by age group.

Figure 2. Age Groups
Symptoms
At the time of specimen collection, patients were asked if they had been experiencing any of the symptoms commonly associated with COVID-19. More than a third (40%) of patients had at least one symptom, while others were tested due to known contact with positive cases or concerns about potential exposures at work or in the community. Fifty-four percent (54%) of those who tested positive had at least one symptom, with the most common symptoms being cough, body aches and fever. Rates of all symptoms for both all patients and those who tested positive are available in Figure 3.

Figure 3. Symptoms

<table>
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<tr>
<th>Symptom</th>
<th>Positive Patients (%)</th>
<th>Total Patients (%)</th>
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<tbody>
<tr>
<td>Chills</td>
<td>31 (12.9%)</td>
<td>65 (6.3%)</td>
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<td>Headache</td>
<td>44 (18.3%)</td>
<td>177 (17.2%)</td>
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<tr>
<td>Rhinorrhea/congestion</td>
<td>5 (2.1%)</td>
<td>10 (1.0%)</td>
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<tr>
<td>Loss of taste/smell</td>
<td>6 (2.5%)</td>
<td>9 (0.9%)</td>
</tr>
<tr>
<td>Sore throat</td>
<td>43 (17.9%)</td>
<td>150 (14.6%)</td>
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<tr>
<td>Cough</td>
<td>73 (30.4%)</td>
<td>200 (19.4%)</td>
</tr>
<tr>
<td>Body aches</td>
<td>95 (39.6%)</td>
<td>244 (23.7%)</td>
</tr>
<tr>
<td>Fever</td>
<td>66 (27.5%)</td>
<td>138 (13.4%)</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>22 (9.2%)</td>
<td>73 (7.1%)</td>
</tr>
<tr>
<td>None</td>
<td>110 (45.8%)</td>
<td>619 (60.2%)</td>
</tr>
<tr>
<td>One or more</td>
<td>130 (54.2%)</td>
<td>410 (39.8%)</td>
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</table>

Rates of positives
According to RIDOH as of June 15, the City of Providence had the highest number of tests in the state, with 15% of the population tested so far. Among Providence residents who were tested, 20% were positive for COVID-19, which is much higher than the positivity rate of approximately 10% that had been seen throughout the state as a whole. During the month of April, the rate of positive COVID-19 tests at CEHC was 48%, and Figure 4 shows how the positivity rate changed over the months since then.

The rate of positive test results was significantly higher among male than female patients (30% vs. 16%, p<0.001) and among Hispanic than non-Hispanic patients (28% vs. 3%, p<0.001). It was also significantly higher among individuals without health insurance than those with health insurance (31% vs. 10%, p<0.001), and those experiencing food insecurity (41% vs. 19%, p<0.001). Figure 5 shows the geographic distribution of positive tests in Providence and the surrounding areas based on ZIP code.

Figure 4. Months
Number of tests completed (bars) and positivity rate (dots) by month and overall. September excluded because only 25 tests had been resulted by the time of publication.

Figure 5. Zip Codes
Number of tests completed by patients living in each ZIP code (displayed for ZIP codes with at least 10 tests).
DISCUSSION

CEHC serves some of the most vulnerable and disenfranchised members of the community, including those who do not have the opportunity to stop working because they are ineligible for unemployment insurance or face unsafe work conditions due to being ‘essential’ workers.

Many social and structural factors lead to the disproportionate effect of COVID-19 on CEHC’s patient population observed in the data reported here. First, there is a high rate of chronic comorbidities in this patient population, such as heart disease and diabetes, which are known to predispose individuals to both infection with the novel coronavirus (SARS-CoV-2) as well as severe health outcomes. Most CEHC patients are low-income, which has been shown to be independently associated with poor severe COVID-19 cases when compared to those with higher incomes. In addition, low-income Hispanic communities in Rhode Island often experience higher levels of environmental exposure to COVID-19, as many live in higher density residential settings and are less likely to be able to work remotely or in safe conditions due to a combination of economic and job-related factors. Language barriers and low health literacy may also contribute to this community’s ability to access health-related information on how to stay safe during the pandemic. For example, information about COVID-19 was not made immediately available in languages other than English in Rhode Island, which may have further exacerbated the impact of the pandemic among non-English speaking communities. It is important to recognize that each of these factors are rooted in structural racism and discrimination, and the disparities exacerbated by the pandemic highlight their direct effects on health.

The immense economic impact of the COVID-19 response has had significant effects on the lowest wage earners in the community with a disproportionate effect on Hispanic/Latino and other non-white populations. In April, RI had one of the highest rates of unemployment claims in the country, reaching 17.9%, and remains high at 13.0% as of August 2020. CEHC’s patient population of largely Spanish-speaking immigrants are often not included in the national economic relief efforts.

It is clear that there is a complex and multifactorial effect of the COVID-19 pandemic on underserved communities. The data presented here from CEHC’s testing site highlight key risk factors and structural determinants that underly the disproportionate impact of COVID-19 on CEHC’s patient population. Nearly 1 in 6 patients being tested at CEHC reported that they are experiencing food insecurity, and those who reported experiencing food insecurity were significantly more likely to test positive than those who did not. These statistics, along with those that have been reported on a national scale, demonstrate the clear link between COVID-19 risk and socioeconomic factors, such as poverty, food insecurity and job-related factors. Efforts to reduce these disparities must be addressed both within the healthcare system and the many other factors that contribute to these health outcomes, such as access to safe housing, fair employment and healthy food sources.

In addition, the COVID-19 pandemic is putting additional pressure on the ‘safety-net’ system of healthcare for poor and undocumented individuals. CEHC has already seen a 72% increase in walk-in visits to date in 2020 as compared to last year. More than half of individuals tested at CEHC’s site lack health insurance, and the testing site has attracted 644 individuals who are eligible to become new patients (uninsured without a PCP and not a current CEHC patient). It is highly likely that the recent increase in the clinic’s community presence will attract new individuals to be tested, and that these patients will seek further healthcare services at CEHC. CEHC is actively working to build capacity to meet these needs and educating potential new patients about the services CEHC offers.

With the major loss of income and healthcare coverage due to the economic fallout of the pandemic, it is clear that there is a growing need for community support of safety net organizations. In the midst of the sobering disparities in COVID-19 outcomes and the renewed reckoning of racial injustice in communities throughout the US, the altruistic commitment of free clinics like CEHC enables community members to work together to address and redress inequity within the healthcare system and beyond.

References


Acknowledgments

We are grateful for our funders who provided support for the CEhC COVID-19 testing program: Rhode Island Foundation & United Way’s COVID-19 Response Fund, City of Providence, Bank RI, Centreville Bank, and Wend II, Inc. We also thank all of the volunteers and community organizations who partner with CEhC to improve the health of our community.

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Child Protection: A Guide for Navigating a Disclosure of Sexual Abuse in Rhode Island Amid the COVID-19 Pandemic

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KEYWORDS: child sexual abuse, COVID-19, disclosure of abuse

INTRODUCTION
While there are well-established public health benefits to social distancing, isolation, and quarantine in order to prevent SARS-CoV-2 (COVID-19) transmission, there may also be unintended consequences for children; these include increased rates of child abuse and exposure to intimate partner violence.1–3 Families are struggling with mental health, financial stressors, isolation, and worries about illness, while also losing protective social supports like family, friends, day care, and schools.2–6 Children are also not having frequent contact with friends, neighbors, teachers, and counselors to whom they most frequently disclose child maltreatment,7 leaving them in an especially vulnerable situation during this pandemic. Therefore, it is even more important that healthcare providers be prepared to support children and adolescents who are in unsafe situations or who disclose child maltreatment.

Child sexual abuse is a challenging and upsetting topic, which can be difficult to navigate. In addition to supporting the child and non-offending caregiver, physicians are asked to make important clinical decisions while also satisfying reporting requirements to law enforcement and/or child protective services. These decision points are not always straightforward and can be complicated by reporter and provider interpretation (or misinterpretation) of the laws, previous positive or negative experiences reporting, and biases.8–10 Here we offer a guide to support physicians as they traverse these conversations and approach disclosures of child sexual abuse.

DEFINITIONS
• Sexual Abuse: When a child is engaged in sexual activity to which they are not able to understand or give consent. This includes sexual contact, child pornography (including online solicitation), and sex trafficking.11
• Sexual Abuse Laws: In Rhode Island, children less than 14 years of age cannot consent to sex. Children who are 14 and 15 years of age can only consent to sex with children between the ages of 14 and 17. Children 16 and 17 years of age are able to consent to sex with persons 14 years of age and above (including adults).12,13

PREVALENCE
It is estimated that approximately 1 in 5 girls and 1 in 10 boys will experience sexual abuse before age 18.14–16 The National Child Abuse and Neglect Data System [NCANDS] reports over 58,000 (8.6%) children in the United States were identified by Child Protective Services (CPS) to have experienced child sexual abuse in 201717 and, in 2018, CPS identified a total of 121 victims of child sexual abuse in Rhode Island.7 While 121 indicated cases is too many, this number may also be falsely reassuring.18–20

REPORTING LIMITATIONS
Since these numbers are taken from NCANDS, they only include cases 1) that were reported to CPS; 2) where CPS decided there was enough information to start an investigation; and 3) where, after the CPS investigation, there was sufficient evidence to substantiate sexual abuse. These numbers also excludes cases which would be investigated by law enforcement and not CPS, for example, when the offender is not a primary caretaker or someone who lives in the home (i.e. a grandfather the child visits once a week). In Rhode Island, CPS does investigate cases where the suspected sexual abuse was by a household member, a caregiver, another minor, a teacher, or a licensed day care worker. Other reasons for cases of sexual abuse to be underreported include, but are not limited to: 1) not all children disclose sexual abuse during childhood; 2) if a child does disclose, the family may not report it or believe the child; 3) due to perceived negative repercussions, some children may recant a true disclosure which then may not be indicated by CPS; and 4) CPS may investigate, but may not have enough evidence to indicate sexual abuse. Including all forms of maltreatment nationally, approximately 40–50% of cases are screened out for investigation and only about 20% of investigations are substantiated.7,17
DISCLOSURES
A disclosure of sexual abuse refers to communicating a sexual abuse experience to family, friends, health care providers, or other authorities.21 Most children do not disclose sexual abuse until months or years after the first incident, often due to embarrassment, guilt, confusion, or fear. Since about a third of sexual abuse is by a family member who the child may love, the decision to disclose becomes even more complicated.16,19,21 Younger children, around preschool age, usually disclose spontaneously, while school-aged children tend to be more cautious about when and to whom they disclose.

Disclosures are often not a single event, but an ongoing process. Children may start by providing a small piece of information initially and, with time, may share more details or stop sharing depending on their perceived response to their disclosure. It is not uncommon for children who are not believed or who feel their disclosure caused negative effects within the family [upset family members, loss of income, arrests, etc.] to recant a true disclosure of sexual abuse. It is, therefore, important for providers of all levels of training to respond to these circumstances thoughtfully and with care.

WHEN A CHILD OR ADOLESCENT DISCLOSES TO YOU
1. While conversations about sexual abuse are best had in person, many visits are occurring via telehealth during the COVID-19 pandemic. If the patient is alluding to an experience of abuse or if you have concerns of abuse, consider offering an in-person appointment as this may make the conversation easier and help the child feel safer. It takes courage to decide to tell a medical provider about sexual abuse, so if the child decides to disclose during a telehealth meeting, listen to them.

2. During the disclosure, the most important thing you can do as a health care provider is listen and support the child. Avoid asking any unnecessary questions and try not to interrupt the child as they are speaking to you. The most important pieces of information to try and gain include 1) if the event occurred within the last 72 hours [for STI prophylaxis and forensic evaluation]; 2) who the offender is and their relationship with the child; 3) the nature of the sexual abuse (“what went where”); and 4) in which town[s] the event[s] occurred. An example of a common, unnecessary question includes asking how many times the abuse has happened in the past as this would not change our next course of action and, in cases of chronic sexual abuse, the child often doesn’t know how many times it occurred, leading the child to guess or give inaccurate information.

3. Throughout the conversation, be mindful of your own emotions and non-verbal reactions (i.e. facial expressions). Children are looking to your response to gauge how others will react. Remain supportive, nonjudgmental, and keep your face neutral.

4. As you are listening, take notes if you are comfortable. You can tell the child that you are taking notes to help you remember because what they are saying is important. If you do not have the opportunity to take notes during the disclosure, write them down immediately afterwards, especially key quotes. This will help as you convey the history to other professionals such as law enforcement or child protective services.

5. After the child has shared their experience, validate the child’s choice to share this with you. Acknowledge that sharing these experiences can be difficult.

WHEN THE CAREGIVER TELLS YOU ABOUT THE DISCLOSURE
• Talk to the caregiver away from the child, especially if the child is less than 14 years of age. Speaking about concerns for sexual abuse in front of younger children can make obtaining a clear disclosure from the child later more difficult. This will also demonstrate to the caregiver the importance of them not discussing their concerns around the children at home. It is also important to communicate this directly to the caregiver as many well-intentioned caregivers will continue to ask their child questions.

• If a child less than 14 years of age has already disclosed sexual abuse to their caregiver, the general medical provider does not have to talk to the child about the sexual abuse. Children between the ages of 3 and less than 14 should be referred to the Children’s Advocacy Center [CAC] possibly for a forensic interview with the goal of having the child disclose as few times as possible. The medical provider can still speak with the child about their health and concerns related to their disclosure (genital exam, infections, mental health, etc.).

• For an adolescent age 14 and above who makes a disclosure to their caregiver, the medical provider can speak to the adolescent usually without the caregiver present to address their questions and concerns. It is important the provider focuses on the adolescent’s health [infections, pregnancy, genital exam, mental health, etc.]. The adolescent may also have age-appropriate questions about mandatory reporting, law enforcement, safety, school, etc. which the provider can address if able or defer to other professionals (i.e. child abuse pediatrician, law enforcement advocate, child protective services, social worker, etc.).

• These guidelines still apply when a caregiver is concerned for sexual abuse and no disclosure has been made.
WHEN THERE IS CONCERN FOR AN ACUTE SEXUAL ASSAULT

Consider sending the child to the emergency department if:

- The assault occurred within the last 72 hours and there was transmission of bodily fluids (i.e. saliva, semen, vaginal secretions, or blood). This allows for a forensic evaluation with a forensic evidence kit to be offered.
- There are any injuries associated with the abuse, such as genital bleeding, genital pain, or inflicted bruising (i.e. suction ecchymosis “hickies”). These injuries can be documented in the emergency department, including photo documentation.
- The child is interested in STI/HIV post-exposure prophylaxis and it cannot be administered outpatient.
  - Post-pubescent patients can be offered prophylaxis for gonorrhea, chlamydia, and trichomonas following an acute sexual assault (pre-pubescent patients do not need this intervention immediately given their low risk for STI complications [i.e. PID] and the medical legal implications of positive STI testing in this age group).
  - Post-pubescent females can be offered pregnancy prophylaxis up to 5 days following a sexual assault (depending upon the medication).
  - All children, regardless of age and sex, can receive HIV post-exposure prophylaxis up to 72 hours after the sexual assault depending on the risk factors of HIV transmission and ability to take medications consistently for 28 days.
- There are concerns for suicidality or potential harm of others.
- There is need for immediate safety planning by police and DCYF, which cannot be facilitated in the clinic.

If none of the above, conduct your exam as you usually would, including evaluation for safety at home, screening for possible domestic minor sex trafficking, and referring to appropriate counseling to address the sequelae of the event. Any pertinent lab work such as STI testing and pregnancy test should be ordered as well.

PHYSICAL EXAM AND WORK-UP CONSIDERATIONS

- If the child is not experiencing any symptoms and the abuse/assault is not acute, it is appropriate to defer the genital exam to a child abuse pediatrician to minimize the number of genital exams for the child.
- If concerned for other signs of maltreatment, such as physical abuse, an exam can be conducted. Any signs of physical maltreatment should be documented, including photo documentation, if possible.
- Depending on the form of abuse, consider ordering blood testing for HIV, syphilis, Hepatitis B and C, as well as urine/oral/anal testing for gonorrhea, chlamydia, and trichomonas.

WHEN TO CALL DCYF

Everyone in Rhode Island is a mandatory reporter for child maltreatment, which includes sexual abuse. The Department of Children, Youth, and Families (DCYF) should be contacted if the child lives in Rhode Island and the possible offender is one of the following: parent or guardian, household member, minor (child less than 18 years of age), teacher, or licensed day care worker. To report to DCYF, you should contact the hotline at 1-800-RI-CHILD. When you call, include the child’s name, birthdate, caregivers’ names and birthdates, detailed address (including apartment or floor number), phone number, who lives in the home address, and any information you have about the person about whom you have the concern. When you call DCYF, it is important to provide clear and objective information related to the concern including from whom the information was obtained. If there is an immediate safety concern, this should be clearly stated to DCYF. As a mandatory reporter, you are protected from liability as long as you are reporting in good faith and provide objective information (Rhode Island General Law 40-11-4). If there is concern for abuse or neglect and you fail to report, you can be charged criminally with a misdemeanor (Rhode Island General Law 40-11-3.2).

Physicians and nurse practitioners who physically examine a child and make a report to DCYF are also required to file a PRE (physician report of exam). PREs must be completed using the physical form and are only available through DCYF, so it is important that all physician and nurse practitioner offices make arrangements to have them on-hand and in stock. The PRE also allows a physician or nurse practitioner to place a child into DCYF custody if there is an imminent safety risk to the child.

If the child does not live in Rhode Island, the provider should contact the DCYF equivalent in the appropriate state.

WHEN TO CALL THE POLICE

As a mandatory reporter, you are also required to report allegations of criminal sexual abuse to law enforcement. Typically, cases involving only children less than 10 years of age (i.e. an 8 year old inappropriately touching a 6 year old) are reported to DCYF and not to the police. The police will investigate all cases of child sexual abuse no matter what the relationship between the child and the alleged offender. The report should be made to the police department in the city where the sexual abuse occurred. If it is clear the abuse occurred in Rhode Island, but the city is unclear, a report can be made to the Rhode Island State Police.
When the concern is a child sending or receiving naked photos, child pornography, online solicitation etc. to an unknown person online this can be reported to the local police or appropriate state ICAC [Internet Crimes Against Children] task force.

WHEN TO CALL THE AUBIN CENTER

- The Lawrence A. Aubin Sr. Child Protection Center at Hasbro Children’s Hospital has a specially trained child abuse medical provider on-call 24/7. They can be reached Monday-Friday 8:30am-5pm at 401-444-3996 or through the hospital operator at 401-444-4000 after business hours. The Aubin Center provider can answer questions regarding mandatory reporting, disclosures, examinations, sexual assault, whether to send the child to the emergency department etc.
- The Aubin Center also provides scheduled medical evaluations for children/adolescents when there is concern for sexual abuse. The services include visits with a child abuse provider, a specialized and comprehensive medical exam, forensic evidence collection when appropriate, STI testing, family support and education, and referral information for ongoing trauma-focused therapy.
- Services at the Aubin Center continue to be available with the pandemic.

MENTAL HEALTH RESOURCES

Children and adolescents who experience sexual abuse are at increased risk of repeat victimization and negative effects on their mental health. Evidence shows that one of the most important factors that help in their long-term success is access to appropriate mental health services, particularly trauma-focused cognitive behavioral therapy. There are many providers across Rhode Island who specialize in trauma-focused therapy for children, and continue to provide services through the pandemic (though some services are limited in terms of in-person support and daily availability):
- The Child Advocacy Center at Day One for services and referrals: 401-421-4100 x143
- The Providence Center: 401-276-4020
- The Inner You Counseling Center: 401-773-7116
- North American Family Institute [NAFI]: 401-921-8700
- Gateway Behavioral Health: 401-553-1031
- St. Mary’s Home for Children: 401-353-3900
- Family Service of Rhode Island: 401-331-1350

With the advent of the COVID-19 pandemic, it has become increasing important for medical providers to be aware of the increased stressors on families and risk to children. Some of our patients reside in increasingly unsafe environments, surrounded by stressors and without their usual support figures, requiring us to be prepared to counsel and refer properly, if a disclosure of sexual abuse were to arise. While navigating disclosures of child sexual abuse can continue to be difficult, we hope this resource can serve as a guide in these circumstances, outlining key steps and key resources you can utilize to guide your patients to the best environments for safety and healing. Despite the pandemic, the Aubin Center, Child Protective Services [DCYF], local police, the Children's Advocacy Center, and many local centers for trauma-focused cognitive behavioral therapy, continue to provide services and are available for support. With your presence and these continued services, we can work together to serve our patients, not only now through this pandemic, but also afterwards in a world where child abuse is still a common, underreported, undertreated issue.

References


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Disclosures
Financial Disclosure: The authors have no financial relationships relevant to this article to disclose.

Conflicts of Interest: The authors have no conflicts of interest relevant to this article to disclose.

Disclaimer: The views expressed herein are those of the authors and do not necessarily reflect the views of the Alpert Medical School of Brown University or the Lawrence A. Aubin Sr. Child Protection Center at Hasbro Children’s Hospital.

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The Association between Adverse Childhood Experiences and Diabetes Status during Pregnancy among Women in Rhode Island, 2016–2018

KELSEY BALA, BS; KARINE MONTEIRO, MPH; MARTHA KOLE-WHITE, MD; ANNIE GJELSVIK, PhD; PAMELA HIGH, MD

INTRODUCTION

Adverse childhood experiences (ACEs) are traumatic events that happen to an individual before the age of 18.1 These adversities faced during childhood range from physical, sexual or emotional abuse, to poverty, parental substance abuse and parental incarceration.2 In the United States, 3.4 million incidents of abuse or neglect of children were reported in 2012.3 As victims of these traumatic events age, their experiences are carried with them into adulthood. In the United States, 1 in 6 adults report experiencing 4 or more ACEs4 and research shows a strong link between the number of adverse childhood experiences and an increased incidence of almost every negative health consequence including obesity, diabetes, depression and overall poor adult health and mental health.3,5

The literature suggests a dose-response relationship between the number of ACEs and elevated risk of disease in adulthood.2,3,6 In analyses of the original ACE Study that examined the impact of childhood adversity on adulthood morbidities, as the number of reported ACEs increased, the odds of disease in adulthood increased.6 Those at greatest risk for diabetes were those who reported 4 or more ACEs before the age of 18.6 Several studies have found similar associations between ACEs and chronic diseases such as diabetes;3,7,8 however, few have examined the association between ACEs and diabetes during pregnancy. The purpose of this study is to examine the impact of adverse childhood experiences on diabetes during pregnancy among mothers who have recently given birth in Rhode Island. We hypothesized that as the number of reported ACEs increases, the prevalence of diabetes during pregnancy, also increases.

METHODS

We analyzed the Rhode Island Pregnancy Risk Assessment Monitoring System (RI PRAMS) 2016–2018 dataset (N=3,350). PRAMS is a national, population-based survey that is completed by mothers 2-6 months post-partum who delivered a live birth in participating states throughout the United States.9 It is a surveillance of maternal health behaviors including care seeking, maternal exposures, and pregnancy outcomes.10 This data is self-reported, and collected by mailing the survey to a subset of eligible people in the target population.9 The dataset is weighted to account for the complex sampling design of PRAMS, in order for the sample data to be representative of the population of Rhode Island mothers who delivered a live birth.10

Respondents eligible for this study included all those with valid responses to the adverse childhood experience questions (exposure), and two questions regarding diabetes during pregnancy (outcome). A valid response was considered an answer of “yes” or “no” to the exposure and outcome questions. Invalid responses were those left blank, marked “don’t know”, or not applicable. Those with invalid responses were 4.96% of the eligible population (n=166) and were excluded from the analyses. Our final analytic sample was 3,184 recent mothers.

We conceptualized maternal ACEs as adverse experiences before the mother was 13 years old, as specified in RI PRAMS. We operationalized ACEs by creating a composite score of all adverse childhood experiences captured in the combined PRAMS data. There were seven ACE statements in the dataset: “Most of the time, I had an adult who believed in me and who I could count on to help me”; “A parent or guardian I lived with got divorced or separated”; “We had to move because of problems paying the rent or mortgage”; “Someone in my family or I went hungry because we could not afford enough food”; “A parent or guardian got in trouble with the law or went to jail”; “A parent or guardian I lived with had a serious drinking or drug problem”; “I was in foster care (removed from my home by the court or child welfare agency).” These statements were coded as 0 for “no” and 1 for “yes” in order to create a composite score. The first statement, “Most of the time, I had an adult who believed in me and who I could count on to help me” was reverse coded. We then created a categorical ACEs variable that divided the ACEs into the following categories: “No ACEs”, “1–2 ACEs”, and “3 or more ACEs” based on recommendations for analyzing ACEs.11

Our outcome of interest was diabetes status during pregnancy, which included all those who were diagnosed with diabetes mellitus (Type I or Type II) prior to pregnancy, and gestational diabetes mellitus (GDM). The survey question that assessed pre-pregnancy diabetes was, “During the 3 months before you got pregnant with your new baby, did you have any of the following health conditions? For each one, check No if you did not have the condition or Yes if you did: a. Type 1 or Type 2 diabetes (not gestational diabetes or
diabetes that starts during pregnancy).” The question that assessed GDM was, “During your most recent pregnancy, did you have any of the following health conditions? For each one, check No if you did not have the condition or Yes if you did: a. Gestational diabetes [diabetes that started during this pregnancy].” We used both the pre-pregnancy diabetes and gestational diabetes variables to create a binary diabetes outcome: “No Diabetes” (no to both pre-pregnancy diabetes and gestational diabetes), and “Any Diabetes During Pregnancy” (yes to either diabetes that started before pregnancy or yes to gestational diabetes).

Maternal age, race/ethnicity, maternal education, household income, WIC (the Special Supplemental Nutrition Program for Women, Infants, and Children) participation, and preconception BMI (body mass index) were socio-demographic factors of interest and were analyzed by Pearson’s Chi-square. The preconception BMI variable analyzed was calculated by the CDC in the PRAMS dataset with the following designations: Underweight (BMI<18.5), Normal Weight (BMI=18.5–24.9), Overweight (BMI=25.0–29.9) and Obese (BMI=30.0+). The socio-demographic factors were also included in regression analyses as covariates. Statistical analyses were completed using STATA Version 16.0 to account for complex survey design and weighting. Logistic regression analyses were performed to obtain the unadjusted odds ratio (OR) between diabetes status during pregnancy and ACEs. Multivariable logistic regression models were performed to identify adjusted OR associations between diabetes status during pregnancy and ACEs controlling for maternal age, race/ethnicity, household income, preconception BMI, and WIC participation. Maternal education was excluded from the final adjusted model. Initially, when all the covariates were adjusted for, the number of observations from our analytic sample decreased by more than 10%. The largest losses of observations were from education and income. We ran two additional adjusted models, one with education included and income removed, and another model with income included and education removed. We decided to omit education from the final adjusted model to maintain the greatest number of observations.

RESULTS

Among new mothers, 37% reported experiencing 1–2 adverse childhood experiences before the age of thirteen, and 12% reported experiencing 3 or more (Table 1). 13% of new mothers reported diabetes in pregnancy. Among those with diabetes during pregnancy, 13% reported experiencing 3 or more ACEs, and 48% reported experiencing no ACEs. These associations were not significant by Pearson’s Chi-square (p=0.56). Compared to those aged 30 and over, mothers 19 and younger were more likely to report experiencing 3 or more ACEs (p <0.001). Hispanic mothers were more likely to report experiencing 3 or more ACEs compared to White, Hispanic, Any Race (p <0.05), ** (p <0.001). BMI: Body Mass Index; WIC: The Special Supplemental Nutrition Program for Women, Infants, and Children

Table 1. Level of Adverse Childhood Experience by Characteristics of Postpartum Women in Rhode Island (N=3,184), RI PRAMS 2016–2018

<table>
<thead>
<tr>
<th>Adverse Childhood Experiences (ACES)</th>
<th>No ACEs</th>
<th>1–2 ACEs</th>
<th>3 or more ACEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted % (n)</td>
<td>Weighted % (n)</td>
<td>Weighted % (n)</td>
<td></td>
</tr>
<tr>
<td>No Diabetes</td>
<td>51% (n=1648)</td>
<td>37% (n=1160)</td>
<td>12% (n=376)</td>
</tr>
</tbody>
</table>

Age**

| ≤ 19 | 38% (44) | 39% (60) | 22% (24) |
| 20–29 | 46% (608) | 39% (505) | 15% (178) |
| 30+ | 55% (996) | 35% (595) | 9.8% (174) |

Race/Ethnicity*

| White, Non-Hispanic | 54% (959) | 33% (572) | 13% (205) |
| Black, Non-Hispanic | 47% (108) | 41% (87) | 11% (19) |
| Hispanic, Any Race | 46% (379) | 42% (353) | 13% (112) |
| Other, Non-Hispanic | 52% (189) | 39% (133) | 9.4% (33) |

Highest Level of Education**

| Less than a High School Diploma | 42% (131) | 44% (145) | 15% (45) |
| High School Graduate or Equivalent | 40% (237) | 42% (255) | 19% (107) |
| Some College | 40% (351) | 44% (345) | 16% (125) |
| College Degree or Higher | 67% (815) | 27% (331) | 5.5% (67) |

Income**

| ≤ $24,000 | 39% (392) | 45% (437) | 17% (156) |
| $24,001–40,000 | 41% (188) | 40% (178) | 19% (73) |
| $40,001–$60,000 | 45% (158) | 41% (131) | 14% (50) |
| $60,001+ | 66% (815) | 27% (341) | 6.5% (80) |

Preconception BMI*

| Underweight | 55% (61) | 33% (41) | 12% (10) |
| Normal weight | 55% (765) | 34% (458) | 11% (137) |
| Overweight | 47% (396) | 39% (291) | 14% (103) |
| Obese | 47% (346) | 39% (309) | 14% (112) |

Received WIC During Pregnancy**

| No | 59% (1097) | 31% (580) | 10% (180) |
| Yes | 40% (545) | 44% (578) | 16% (195) |

Diabetes During Pregnancy

| No Diabetes | 51% (1429) | 36% (1000) | 12% (328) |
| Pre-Pregnancy Diabetes or Gestational Diabetes | 48% (219) | 39% (160) | 13% (48) |

*(p <0.05), ** (p <0.001)
Non-Hispanic (NH) mothers (p < 0.05). Both Black NH and Hispanic mothers were less likely to report no ACEs compared to White NH mothers (p < 0.05). Mothers who were either a high school graduate or did not receive a high school diploma were more likely to report 3 or more ACEs compared to mothers with a college degree (p < 0.001). New mothers who had an annual income under $40,000 were also more likely to report experiencing 3 or more ACEs compared to those who earned over $60,000 annually (p < 0.001). Those with a higher preconception BMI (defined as a BMI over 25.0), were more likely to report 3 or more ACEs compared to those with a BMI under 25.0. Lastly, mothers who participated in WIC during pregnancy were more likely to report experiencing 3 or more ACEs than those who did not receive WIC (Table 1).

After adjusting for age, race/ethnicity, income, preconception BMI, and receiving WIC during pregnancy, there were no statistically significant associations between the number of ACEs and the outcome of diabetes during pregnancy in both the unadjusted and adjusted models (Table 2). However, there was an association between BMI and diabetes in pregnancy. In unadjusted and adjusted models, mothers with high preconception BMIs had an increased odds of experiencing diabetes in pregnancy (Table 2).

**DISSCUSSION**

Exposure to ACEs manifests as negative health outcomes in later life including obesity and diabetes. This study determined the association between these ACEs and diabetes status during pregnancy, a significant period in the life course. Consistent with the literature, preconception BMI was significantly associated with diabetes status during pregnancy in both the unadjusted and adjusted models (Table 2). Although the effect measure relating diabetes status during pregnancy and exposure to adverse childhood experiences before the age of 13 was not statistically significant in these analyses, the separation between the estimated odds observed from the unadjusted to adjusted model indicates there was confounding in the crude analyses that originally attenuated the relationship.

The extent to which ACEs affect health in later life is a growing public health concern. Among our population of recent mothers, not only do the negative health outcomes due to ACEs have an impact on their health during pregnancy, they also pose a threat to the health of the fetus including the increased risk of large for gestational age birthweight, caesarean section delivery, and other concerns. Identifying the pathway between ACEs and diabetes during pregnancy will increase the already growing amount of evidence identifying the imperative need to implement interventions during childhood to prevent ACEs before they happen and reduce the risk of negative health outcomes during pregnancy and throughout the life course.

**LIMITATIONS**

The frequency of respondents who reported any diabetes was low, and due to this limitation, as well as a further reduced sample size after covariates were taken into consideration, our results may have been impacted. Future work is warranted with a larger sample size to investigate the role ACEs.
may play in the development of GDM specifically. Also, the variable that represents pre-pregnancy diabetes in the RI PRAMS includes both Type I and Type II diabetes mellitus. We would have liked to exclude Type I diabetes mellitus from the analyses because the current literature does not support associations between ACEs and Type I diabetes, a chronic condition most often identified in adolescence.\(^{15}\)

Furthermore, the PRAMS dataset for RI represents a smaller subset of the national PRAMS which may limit the generalizability of our findings. The PRAMS also relies on self-reported data, which is subject to recall bias especially with regard to ACEs because they are defined as events that occurred early in life, before the age of 13. We also acknowledge that height and weight are self-reported, and the incorporation of these data points into the CDC calculated BMI variable has likely underestimated the prevalence of overweight and obesity within our population. Additional limitations include the possibility of residual confounding. We excluded maternal education from our final adjusted model due to a greater than 10% reduction in the number of observations in our model; however, education is still a possible confounder.

References


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Acknowledgments

The authors would like to thank the RI PRAMS Program coordination team for granting us access to the RI PRAMS Phase 8 2016–2018 dataset. We would also like to thank Blythe Berger, ScD, Perinatal and Early Childhood Health Coordinator, Rhode Island Department of Health, for her support of this work and insight on adversities faced during childhood.
Rhode Island Monthly Vital Statistics Report
Provisional Occurrence Data from the Division of Vital Records

<table>
<thead>
<tr>
<th>VITAL EVENTS</th>
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<th>12 MONTHS ENDING WITH MAY 2020</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
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</tr>
<tr>
<td>Live Births</td>
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<tr>
<td>Deaths</td>
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<td>Infant Deaths</td>
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<td>Neonatal Deaths</td>
<td>7</td>
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<tr>
<td>Marriages</td>
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<td>Divorces</td>
<td>178</td>
<td>2,663</td>
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</tbody>
</table>

* Rates per 1,000 estimated population
# Rates per 1,000 live births

<table>
<thead>
<tr>
<th>UNDERLYING CAUSE OF DEATH CATEGORY</th>
<th>REPORTING PERIOD</th>
<th>12 MONTHS ENDING WITH NOVEMBER 2019</th>
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<td>NUMBER (a)</td>
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<tr>
<td>Diseases of the Heart</td>
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<td>Malignant Neoplasms</td>
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<td>Cerebrovascular Disease</td>
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<td>464</td>
</tr>
<tr>
<td>Injuries (Accident/Suicide/Homicide)</td>
<td>74</td>
<td>903</td>
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<tr>
<td>COPD</td>
<td>43</td>
<td>491</td>
</tr>
</tbody>
</table>

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.
(b) Rates per 100,000 estimated population of 1,056,298 (www.census.gov)
(c) Years of Potential Life Lost (YPLL).

NOTE: Totals represent vital events, which occurred in Rhode Island for the reporting periods listed above. Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.
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Contact Dulce Cosme if you’ve missed an issue, dcosme@rimed.org.
Working for You: RIMS advocacy activities

October 1, Thursday
Project Weber Renew syringe clean up: RIMS Staff, 1,000 syringes cleaned up

October 5, Monday
RIMS Council meeting: Catherine A. Cummings, MD, President (via teleconference)
Zoom call with subject matter expert: Governor’s Overdose Intervention and Prevention Task Force regarding Overdose Prevention Centers

October 6, Tuesday
RIMS Physician Health Committee: Herbert Rakatansky, MD, Chair (via teleconference)

October 7, Wednesday
American Medical Association (AMA) vaccine update conference call

October 8, Thursday
Office of the Health Insurance Commissioner (OHIC) Telemedicine Advisory Group: Peter Hollmann, MD AMA/Ad Council Flu Vaccination Campaign webinar

October 13, Tuesday
Governor’s Overdose Intervention and Prevention Taskforce: Harm Reduction Work Group

October 14, Wednesday
Board of Medical Licensure and Discipline Governor’s Overdose Intervention and Prevention Task Force: Sarah Fessler, MD, RIMS Past president

October 15, Thursday
2020 Health Information Technology Survey – workgroup meeting

October 20, Tuesday
OHIC Health Insurance Advisory Committee

October 21, Wednesday
Department of Health (DOH) Primary Care Physician Advisory Committee (PCPAC): Elizabeth Lange, MD, RIMS President-elect
DOH Health Professional Loan Repayment program: scoring sub-committee
Meeting with RI Dermatological Society

October 22, Thursday
OHIC Telemedicine Advisory Group: Peter Hollmann, MD
Open Door Clinic meeting and tour RIMS Finance Committee: Kwame Dapaah-Afriyie, MD, MBA, Chair

October 27, Tuesday
DOH Health Professional Loan Repayment Program Board: Steve DeToy, board member

October 29, Thursday
Call with Warren Alpert Medical School regarding cultural awareness continuing medical education
MMJUARI Finance Committee: Newell Warde, PhD, committee member

October 30, Friday
Payment and Care Delivery Advisory Committee: Peter Hollmann, MD City of Providence 02903/02907 Overdose Prevention Report

Rhode Island Medical Society announces Officers for 2020–2021

CATHERINE CUMMINGS, MD, an emergency physician, will serve as President. Dr. Cummings lives in Providence and works at RI Hospital and the Miriam Hospital. She is immediate past Chair of the Rhode Island Chapter of the American College of Emergency Physicians.

ELIZABETH LANGE, MD, a pediatrician, will serve as President-elect. She lives in Exeter and practices at Waterman Pediatrics in East Providence. Dr. Lange is a founder of PCMH-Kids (Patient-Centered Medical Home Kids), she is also a member of the Primary Care Physician Advisory Committee at the RI Department of Health.

THOMAS BLEDSOE, MD, an internist, will serve as Vice-president. He lives in Barrington and practices at Brown Medicine in East Providence. Dr. Bledsoe is a former Governor of the American College of Physicians.

KARA STAVROS, MD, a neurologist, will take over as Secretary. Dr. Stavros lives in Providence and practices at Brown Neurology. She is a Rhode Island native.

KWAME DAPA AH-AFRIYIE, MD, a hospitalist, will continue as Treasurer. He lives in Attleboro and practices at the Miriam Hospital where he founded the hospitalist practice.
The Rhode Island Medical Society continues to drive forward into the future with the implementation of various new programs. As such, RIMS is expanded its Affinity Program to allow for more of our colleagues in healthcare and related business to work with our membership. RIMS thanks these participants for their support of our membership.

Contact Marc Bialek for more information: 401-331-3207 or mbialek@rimed.org

Neighborhood Health Plan of Rhode Island is a non-profit HMO founded in 1993 in partnership with Rhode Island's Community Health Centers. Serving over 185,000 members, Neighborhood has doubled in membership, revenue and staff since November 2013. In January 2014, Neighborhood extended its service, benefits and value through the HealthSource RI health insurance exchange, serving 49% the RI exchange market. Neighborhood has been rated by National Committee for Quality Assurance (NCQA) as one of the Top 10 Medicaid health plans in America, every year since ratings began twelve years ago.

RIPCPC is an independent practice association (IPA) of primary care physicians located throughout the state of Rhode Island. The IPA, originally formed in 1994, represent 150 physicians from Family Practice, Internal Medicine and Pediatrics. RIPCPC also has an affiliation with over 200 specialty-care member physicians. Our PCP's act as primary care providers for over 340,000 patients throughout the state of Rhode Island. The IPA was formed to provide a venue for the smaller independent practices to work together with the ultimate goal of improving quality of care for our patients.
RIMS gratefully acknowledges the practices who participate in our discounted Group Membership Program

For more information about group rates, please contact Marc Bialek, RIMS Director of Member Services
We are read everywhere

In 2020 to date, more than 15,400 readers from more than 110 countries have read articles in the Rhode Island Medical Journal (RIMJ) or researched its archives. More than 8,300 others have accessed full-text pdfs via the PubMed Linkout feature.

Top 10 countries in October 2020:
1. US
2. Australia
3. Canada
4. UK
5. India
6. Germany
7. Brazil
8. China
9. Japan
10. Spain

PROVIDENCE, RHODE ISLAND

Outside of L’artisan Café & Bakery on Wayland Square, M. Charles Bakst, retired Providence Journal political columnist, reads the commentary on Associate Supreme Court Justice Ruth Bader Ginsburg’s healthcare jurisprudence, which appeared in the October issue of the Rhode Island Medical Journal. It was written by RIMJ Managing Editor Mary Korr, who covered Justice Ginsburg’s visit to Newport’s Touro Synagogue in 2004, and which is recalled in the commentary as well. It can be accessed here: http://www.rimed.org/rimedicaljournal/2020/10/2020-10-11-commentary-korr.pdf

[PHOTO: COURTESY OF ELIZABETH BAKST]

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Rhode Island State Board of Health Bacteriologist Gardner T. Swarts, MD, (1857–1925) echoed the popular press (Figure 1) and the muckrakers of the early 1900s in his fight for the passage of pure food and drug legislation.

A public health pioneer who worked closely with Charles V. Chapin, MD, Providence’s Superintendent of Health, Dr. Swarts was not hesitant to wade into the muck – figuratively and literally. The Narragansett News of July 28, 1888, reported:

“Dr. Gardner T. Swarts has been at the Pier the past week busily engaged in making a sanitary inspection in the interest and as the agent of the state board of health. Among the points that he is especially probing into is the water supply in different sections of the Pier, in order to determine whether there is any possible chance of contamination of the supply from cesspools, drains or vaults...as happened in Jamestown last year.”

In addition to wading in the waters of Narragansett Bay, Dr. Swarts, who would later become president of the American Public Health Association in 1909, visited rural farms and dairies, testing the milk and unprocessed foods such as eggs and poultry in the days before viable refrigeration, pasteurization and bottle sterilization became commonplace.

Nostrums and Patent Medicines

Nostrums and patent medicines were of equal concern to public health officials such as Dr. Harvey Wiley (Figure 6) and Dr. Swarts. These products were patented and manufactured in Rhode Island and nationwide, and were widely advertised in the general press as well as medical journals for decades, including the Providence Medical Journal and the city’s Atlantic Medical Weekly. One of the most egregious patent medicine abuses was so-called “soothing syrups” advertised for adults and infants which contained morphine, heroin, opium, and laudanum. (Figure 2)

AMA Lobbies for Action

The American Medical Association (AMA) was in the forefront of the legislative battle for pure food and drugs. Dr. Swarts represented the Rhode Island Medical Society (RIMS) as a member of the AMA’s National Legislation Committee, and attended its meeting on Jan. 9, 1906 in Washington D.C. The organization supported the pure food and drugs legislation before Congress and put pressure on Republican
Figure 2. Glyco-heroin for adults and children

“Soothing syrup” ads ran in the Providence Medical Journal and the Atlantic Medical Weekly, and many other publications in the 1890s and early 1900s. This one lauds the benefits of heroin over morphine.

Source: Providence Medical Journal, 1906; Atlantic Medical Monthly, 1899.

Figure 3a. “Death’s Laboratory”

This illustration by E.W. Kemble in the Collier’s Weekly series on fraudulent patent medicines was published on June 3, 1905 and labeled “Death’s Laboratory.” It shows a skull surrounded by money bags. Inside the nose of the skull a skeleton pours laudanum and alcohol from barrels in the skull’s eyes into bottles labeled with various types of patent medicine.

Source: Library of Congress

In March 1906, FRANK DAY, MD, gave his address as president of the Providence Medical Association, and endorsed Dr. Swarts’ sentiments, with a caveat to physicians: “We should publicly aid in the movement for the suppression of

Whereas, Many proprietary medicines contain ingredients which are dangerous to health and conducive to habits of alcoholism and morphinism, and

Whereas, these proprietary combinations are extensively advertised with extravagant and alluring claims, and

Whereas, the medical profession and boards of health are unable to control this menace to public health and the savings of working people, be it

Resolved, That the Rhode Island Medical Society observes with great satisfaction and gratitude the campaign against these frauds and dangers undertaken by the Collier’s Weekly and The Ladies’ Home Journal, and desires to express its appreciation of the public spirit and Independence, of these periodicals. [Figures 3a,b]

Returning from the AMA meeting, Dr. Swarts presented the following resolution to RIMS, which was approved:

Figure 7. “The Poison Squad”

There was no shortage of volunteers for Dr. Wiley’s Hygienic Table Trials, dubbed by the media as “The Poison Squad.”

Source: “Poison Squad” Volunteers (FDA013). fda.gov; www.fda.gov/AboutFDA/WhatWeDo/History/default.htm

butter laced with borax, the chef began preparing borax capsules. A Washington Post reporter got wind of the project and dubbed the volunteers “The Poison Squad.” (Figure 7)

The results of the study, which continued for several years, were published in 1904 (Figure 8).

The 400-plus-page report summarized its findings per volunteer, per substance, with extensive tables and figures. The following is a brief extract of the conclusions regarding borax: …“the logical conclusion which seems to follow from the data at our disposal is that the use of boric acid and equivalent amounts of borax should be restricted to those cases where the necessity therefore is clearly manifest, and where it is demonstrable that other methods of food preservation are not applicable and that without the use of such a preservative the deleterious effects produced by the foods themselves, by reason of decomposition, would be far greater than could possibly come from the use of the preservative in minimum quantities. In these cases it would also follow, apparently, as a matter of public information, and especially for the protection of the young, the debilitated, and the sick, that each article of food should be plainly labeled and branded in regard to the character and quantity of the preservative employed.”

The publicity that Wiley’s trial generated helped set the stage for the subsequent Congressional action on regulating food and drugs. Anecdotal reports in the FDA archives report that all of the volunteers survived the experiments with temporary but no permanent side effects, although there is no indication of follow-up post-trial.

Figure 8. Wiley Report

The results of the study were published as the Influence of Food Preservatives and Artificial Colors On Digestion and Health, Bureau of Chemistry Bulletin 84.
Figure 4. “The Jungle” by Upton Sinclair

Quack Medicines in the interest of the public health, as is being done by Collier’s Weekly and The Ladies’ Home Journal. And first of all we should turn the searchlight on our own prescription-books, lest recipes for anti-kamnia, sanmetto and scores of secret or doubtful nostrums bear our signatures; for it is to be feared that few of us have warded off the lazy, insidious habit of ordering these ready-made preparations.”

And while a confluence of factors and coalitions resulted in the passage of the Pure Food and Drug Act of 1906; one of the most notable and notorious movers was Upton Sinclair’s exposé of the meatpacking industry in his book, “The Jungle,” (Figure 4) which raised the wrath of the American public and caught the attention of President Theodore Roosevelt, who launched an investigation, which confirmed Sinclair’s account.

Passage of Pure Food and Drug Act
On June 30, 1906, Congress passed and President Theodore Roosevelt (Figure 5) signed the Pure Food and Drug Act, also known as the Wiley Act, which banned foreign and interstate traffic in adulterated or mislabeled food and drug products. It required that active ingredients be placed on the label of a drug’s packaging and that drugs could not fall below purity levels established by the United States Pharmacopeia or the National Formulary. Enforcement was placed under the purview of the U.S. Bureau of Chemistry.

On the same day President Roosevelt also signed the Federal Meat Inspection Act. Enforcement of the Pure Food and Drug Act was assigned to the Bureau of Chemistry in the U.S. Department of Agriculture, which became the U.S. Food and Drug Administration (FDA) in 1930.

With the help of physicians such as Dr. Swarts, Rhode Island passed its own Pure Food and Drug Act in 1908. These early state and federal laws were the first step in the regulation of food and drugs in this country, made possible by a coalition of public health pioneers, women’s and business groups, legislators, medical associations and the muckrakers of the Progressive Era.
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Conceal/Reveal Mask Installation on display at RIDOH
Healthcare workers, families invited to participate

The Conceal/Reveal Mask Installation, a collaboration of the Providence Art Club and the Rhode Island Arts and Health Network, is currently on display in the lobby of the Rhode Island Department of Health (RIDOH) gallery. The installation, which features artworks in the shape of face masks, was first collected and displayed at the Providence Art Club during the summer.

According to the organizers, the goal of this project is to celebrate the importance of creativity and the healing power of the visual arts and to encourage mask wearing to slow the spread of COVID-19.

All RIDOH employees, contractors, community partners, and family members are invited to participate in the collaborative project. Entry information and a template to create a submission are available by email; contact Steven Boudreau, Chief Administrative Officer at RIDOH: steven.boudreau@health.ri.gov.

Due Date/Awards
Completed masks must be submitted/delivered to the Director's office in Room 401 of the Cannon building by Monday, November 16. Artists are also welcome to mail in their masks, care of Steven Boudreau, RIDOH Three Capitol Hill, Room 401, Providence, RI 02908. If you are mailing your mask, please mail it flat so it does not get damaged. Certificates will be offered (Best in Show, 2nd Place, 3rd Place).
Newport Hospital expands rapid testing for coronavirus, other pathogens

NEWPORT – Newport Hospital has acquired new laboratory equipment that will increase its capacity to perform on-site rapid tests for a wide variety of pathogens, including the novel coronavirus that causes COVID-19.

The purchase of the GenMark ePlex testing system expands Newport Hospital’s ability to quickly obtain results – in just a matter of hours – for patients presenting with flu-like systems. This enables hospital staff to more quickly develop a plan of care for ill patients, including determining the best course of treatment and the need for isolating contagious patients. It is not a testing service open to the public.

The acquisition was made possible by a new Newport Hospital Emergency Preparedness Fund dedicated to the hospital’s ability to respond to crises. Many community members had expressed interest in making donations to support the hospital’s challenging and costly response to the pandemic, which led to the creation of the fund.

“Newport Hospital has been overwhelmed by how the community, in both small and substantial ways, has shown its deep appreciation for how this institution and our staff have responded to COVID-19. The amazing generosity of donors, who saw this pandemic as a call to action and who stepped up in our time of need, has now allowed us to further improve how we deliver care to our community,” said CRISTA F. DURAND, president of Newport Hospital. “We are so grateful for the continuing support of the Newport Hospital Emergency Preparedness Fund, which has already proven immensely valuable and useful.”

The hospital previously tapped the new fund to purchase two Clorox electrostatic sprayers to more effectively and widely disinfect surfaces in patient rooms and public spaces during the pandemic.

Newport Hospital, as part of the Lifespan system, already benefited from supplies of another rapid test from manufacturer Cepheid. But due to the demands of COVID-19 on medical supplies, its availability can be limited. The newly acquired GenMark ePlex system adds an additional layer of rapid testing capability to the hospital’s laboratory services.

Another option readily available to Newport Hospital is the ability to transfer specimens to a central Lifespan laboratory in Providence.

The new ePlex system Newport Hospital just purchased and put into service is capable of providing rapid results on GenMark’s newest respiratory pathogen panel (RP2), which in addition to being able to test for an array of common pathogens, including influenza, also detects SARS-CoV-2, the virus that causes COVID-19. The test is only for patients that meet certain criteria, including admitted patients and certain patients presenting to the Emergency Department with illness.

“As we enter the flu season, it’s very helpful to distinguish whether a patient presenting to the hospital with common symptoms has influenza or COVID-19, and being able to do so rapidly can enhance the quality of care we provide and the maximize the hospital’s efficiency,” said JEFFREY GAINES, MD, vice president of medical affairs and chief medical officer for Newport Hospital.

AMA report examines existing Latinx inequity driving disproportionate COVID-19 impact

REPORT INVESTIGATES REASONS BEHIND INEQUITIES, FINDS IMPACT OF COVID-19 ON LATINX COMMUNITY LIKELY UNDERESTIMATED

CHICAGO – The American Medical Association (AMA) released a new report emphasizing the starkly disproportionate Latinx COVID-19 cases and fatalities – further underscoring concerns that a lack of consistent data reporting underestimates the pandemic’s magnitude on the Latinx community and illustrating how the pandemic has deepened pre-existing inequities.

The report, titled ‘Latinx COVID-19 health inequities: Insights for the health care field,’ serves as a compilation of existing data highlighting that COVID-19 cases affect Latinx individuals at nearly double the overall national rate – and calling attention to data showing that Latinx individuals are overrepresented in some state mortality rates. The report features these key statistics from public health reports:

- Latinx individuals make up 18% of the U.S. population, yet represent 33% of new COVID-19 cases.
- Latinx individuals make up roughly 19% of New York’s population; yet account for 34% of COVID-19 fatalities.

Despite these figures, and the fact that Latinx make up the largest ethnic group in the nation, the report points out that the effects of COVID-19 on this population have not been widely addressed and are largely invisible in mainstream discourse. In addition, researchers cite a lack of consistent race and ethnicity data state reporting as a barrier to capturing the real impact of the pandemic on the Latinx community. As the report notes, these elements combined leave the Latinx population inconsequential in pandemic recovery and prevention planning.

“Though COVID-19 did not create the circumstances that have led to deep-seated inequities in the Hispanic community, this report clearly highlights how the pandemic continues to exacerbate them,” said AMA President SUSAN R. BAILEY, MD. “The AMA remains committed to ensuring that vulnerable patients do not suffer...
disproportionately and to removing obstacles that stand in the way of culturally competent care for Hispanic patients.”

The report also identifies the existing drivers behind the Latinx community’s vulnerability to the pandemic. Existing structural drivers – like anti-immigration and restrictive health insurance policies – coupled with social determinants – like a lack of multilingual public health resources and limited access to digital health technologies – are major contributors to the COVID-19 health inequities experienced by the Latinx community.

“The COVID-19 pandemic has already more publicly exposed the persistent fundamental health inequities faced by Black and Brown communities, but this report uncovers just how dire the situation is in the Latinx community,” said AMA Chief Health Equity Officer and Group Vice President ALETHA MAYS BANK, MD, MPH. “In this critical moment, it is imperative that we confront inequities and dismantle racism in all its forms, so that marginalized and minoritized communities like the Latinx population no longer have to bear the brunt of this public health crisis.”

FDA awards $1.1M contract to EpiVax and CUBRC

For validation of new immunoinformatic tool for prospective immunogenicity assessment of peptide drugs and their impurities

PROVIDENCE – EpiVax, Inc (“EpiVax”) and CUBRC, Inc. (“CUBRC”) announced on October 22 that they have been awarded a two-year, $1.1 million contract from the Office of Generic Drugs (OGD) in the Center of Drug Evaluation and Research (CDER) of the Food and Drug Administration (FDA) in response to a Broad Agency Announcement (BAA). FDA BAA-20-00123.

This program continues research performed during a previous two-year collaboration between EpiVax and CUBRC. Under the previous FDA contract, EpiVax demonstrated the value of in silico tools and in vitro validation methods for the evaluation of generic peptide drugs and their impurities. EpiVax analyzed the immunogenic risk of two generic peptide drugs, applying the concepts outlined in FDA draft guidance, ANDAs for Certain Highly Purified Synthetic Peptide Drug Products That Refer to Listed Drugs of rDNA Origin, published in 2017.

Since initiating the program, EpiVax has produced the What-if Machine (WhIM) – an advanced immunoinformatics tool that performs iterative modifications to synthetic peptide drugs entirely in silico, generating a comprehensive list of all potential impurities that may occur due to deletions, insertions, duplications or side chain modifications at any residue of the active pharmaceutical ingredient (API). EpiVax uses existing algorithms to rank the impurities produced by the WhIM for their immunogenic potential in global patient populations. This output will enable one to identify high-, moderate-, and low-risk impurities prospectively. The new contract will provide proof of concept for the WhIM, again using two case studies as validation. EpiVax will continue to work with KATIE EDWARDS, PhD, (CUBRC), Prime Technical Program Lead, to achieve the goals set out in the contract.

ANNIE DE GROOT, MD, (CEO/CSO, EpiVax) stated, “The WhIM has significant potential to contribute to prospective identification of high-risk impurities, allowing for generic peptide drug products to be de-risked early in the development process.”

About the Draft FDA Guidance on Generic Peptide ANDAs

The draft guidance issued by the Office of Generic Drugs highlighting the use of in silico analysis in accelerated new drug applications for generic peptide drugs can be found here (UCM578365).

About EpiVax

EpiVax is a biotechnology company leading in the fields of immunogenicity risk assessment of biologic products and computational vaccinology with expertise in T cell epitope prediction, immune modulation, and rapid vaccine design. Visit www.epivax.com for more information.

About CUBRC

CUBRC is an independent not-for-profit scientific corporation that executes Research, Development, Testing and Systems Integration programs in Medical Sciences, Chemical and Biological Defense, Data Science and Information Fusion, Command and Control, and Hypersonics. Visit www.cubrc.org for more information.

FDA Funding Statement

The FDA sponsors the project referenced in this press release. The content of the information does not necessarily reflect the position or the policy of the federal government, and no official endorsement should be inferred. The entire project (~$1.1M) will be financed with federal money.
Providence – Results from a new study conducted at the Providence VA Medical Center suggest that video telehealth may be a viable option for treating Veterans with nonepileptic seizures.

“Nonpharmacologic therapies for seizures have been gaining acceptance,” said Dr. W. Curt LaFrance, Jr., the principal investigator, a neuropsychiatrist at the Providence VA Medical Center, professor of Psychiatry and Neurology at the Warren Alpert Medical School at Brown University, director of Neuropsychiatry and Behavioral Neurology at Rhode Island Hospital, and member of the VA RR&D Center for Neurorestoration and Neurotechnology.

“Building off of our previous studies, this is the first study demonstrating seizure reduction using video telehealth for patients with nonepileptic seizures.”

Seizures are common, especially in military veterans, and are often accompanied by psychological comorbidities and traumatic brain injuries. The project, funded through Ocean State Research Inc. by a grant from the Matty Fund, formerly known as the Siravo Foundation, examined the effects of Neuro-Behavioral Therapy, known as NBT, a short-term, goal-oriented psychotherapy approach to problem-solving, in reducing the frequency of seizures and improving mental health.

The study, initially published October 4 in Epilepsia [https://doi.org/10.1111/epi.16689] examined 32 Veterans with nonepileptic seizures, often called NES, evaluated at the VA Epilepsy Centers of Excellence and treated with NBT using telehealth in the VA National Telemental Health Tele-Seizures Clinic.

“As in earlier studies in civilians using this therapy, we observed a significant reduction not only in NES, but also in depression and anxiety, as well as an improvement in quality of life and global functioning,” said LaFrance.

An earlier study published in the Summer 2020 issue of the Journal of Neuropsychiatry [https://pubmed.ncbi.nlm.nih.gov/32054400/] which was conducted by LaFrance and colleagues, and also supported by the Siravo Foundation, showed disclosure of baseline symptoms similarly in Veterans with nonepileptic seizures evaluated either in the Providence VA Neuropsychiatry Clinic or in the VA Telemental Health Tele-Seizures Clinic.

“Our earlier studies on moral injury have shown that seizures and trauma – whether TBI or emotional injuries – are very common in Veterans. In the baseline comparison study, Veterans with NES evaluated using telehealth did not appear to withhold sensitive or personal information compared with those evaluated in-clinic,” said Dr. LaFrance. “This suggests that video telehealth can be a viable option for seeing patients with seizures anywhere across the nation, reducing the access gap, which can be a significant barrier to helpful treatment.”

Dr. W. Curt LaFrance Jr., a neuropsychiatrist at the Providence VA Medical Center and Professor of Psychiatry and Human Behavior and Neurology at Brown University’s Warren Alpert Medical School, uses the VA telehealth system at the Providence VAMC August 31, 2020, to meet with Thera Powell, a telehealth licensed practical nurse at the Charles George VA Medical Center in Asheville, N.C.

[VA PROVIDENCE HEALTHCARE SYSTEM PHOTO BY WINFIELD DANIELSON]
Anchor Recovery receives grant from the Foundation for Opioid Response Efforts (FORE) to assist with opioid crisis during COVID-19

PROVIDENCE – The Foundation for Opioid Response Efforts (FORE) announced it is providing grants to 10 organizations, including The Providence Center’s Anchor Recovery Community Center. FORE will award a grant of up to $62,989 over 12 months to The Providence Center for the project Peer Services in Substance Use Recovery Housing, to help at-risk populations in RI dealing with increases in opioid use and overdoses during the COVID-19 pandemic.

“Evidence shows that drug overdoses, which reached a record high of more than 70,000 cases last year, continue to surge this year due to disruptions in face-to-face interventions and treatments, job losses, anxiety, and social isolation magnified by COVID-19,” said ANDREA BARTHWELL, MD, Chair of FORE’s Board of Directors.

The FORE foundation is committed to supporting projects contributing solutions to the opioid crisis and impacting people with opioid use disorder, their families, and their communities.

During the pandemic, individuals living in recovery housing face isolation, disrupted access to care, possible loss of employment, and cutoff from the social supports so critical to their long-term success. Through a variety of online platforms, the Anchor Recovery Program at The Providence Center in Rhode Island is piloting new ways to provide recovery support services around the state, including virtual recovery groups and individual recovery coaching, to this high-risk population.

“We are thrilled to be awarded this grant from FORE, which will help Anchor expand its peer support services to those living in recovery housing. During this pandemic, people are even more in need of support, and Anchor Recovery is committed to providing these much needed services,” said HOLLY FITTING, LMHC, LCDP, Vice President of Addiction, Recovery & Residential Services, The Providence Center.

The Providence Center is available 24/7 for anyone who is experiencing a crisis, needs to talk to someone, or is feeling overwhelmed or especially anxious, by reaching someone on its Emergency Services line at 401-274-7111. Counseling services are also available.

The Anchor Recovery Community Center, a division of The Providence Center, is staffed by recovery coaches, and offers a supportive environment for individuals in all stages of recovery. At the Anchor Recovery Community Center, peer specialists and counselors strive to build the bridge to recovery in its centers, at local emergency rooms, and out in the community. Anchor offers programs for people who are trying to sustain their recovery, whether it be an addiction to alcohol, or any other substance.

The Providence Center raises $276,000 at Circle of Stars for Covid-19 Emergency Fund

PROVIDENCE – On October 15th, The Providence Center (TPC) held its annual Circle of Stars event. Donors and supporters gathered virtually to learn about the emergent need for mental health and addiction services for those struggling in our state. A total of $276,000 was raised to support The Center’s COVID-19 Emergency Fund created to provide increased access to emergency and telehealth services; and computers for low-income students of The Providence Center School.

Hosted by NBC 10 News Sunrise Anchor, ALISON BOLOGNA, the evening honored JOSEPH MARASCO and DONNA NESSELBUSH along with the staff of Marasco & Nesselbush LLP. By establishing a disability clinic at The Center 15 years ago, they have passionately advocated and helped thousands of patients to obtain the critically important social security benefits they needed and deserved.

Interim President and COO of The Providence Center, and President and COO, Butler Hospital, MARY MARRAN said, “Since stepping into my role at The Providence Center, I’ve been touched by the overwhelming compassion, generosity and determination I’ve seen. And, I would like to express my sincere gratitude. I would like to thank our staff. They have a shown exceptional resilience and dedication throughout this crisis. Their laser focus on maintaining services in the face of the COVID 19 pandemic has been remarkable.”

“I would also like to thank our Board of Trustees and our donor community. Their unwavering leadership and financial support have helped us to sustain vital programs and fund new innovation needed to change lives and even save lives,” added Marran.
Hasbro Children’s Hospital earns top national recognition for patient-centered care

Hasbro Children’s Hospital again earned Patient-Centered Medical Home (PCMH) recognition from The National Committee for Quality Assurance (NCQA). The top designation recognizes evidence-based, patient-centered processes, highly coordinated care, and long-term patient-clinician relationships at the Hasbro Children’s Pediatric Primary Care and the Medicine-Pediatric Primary Care Centers, both of which first earned the recognition in 2018, and the Adolescent Primary Care Centers.

“Our team is extremely proud to have achieved this designation. It reflects our ongoing commitment to providing high quality, coordinated primary care to patients of all ages,” said PHYLLIS DENNERY, MD, pediatrician-in-chief and medical director of Hasbro Children’s Hospital, the pediatric division of Rhode Island Hospital.

The NCQA model combines teamwork and information technology to improve care and patients’ experience of care, as well as to reduce costs. Medical homes put patients at the forefront of care by fostering ongoing partnerships between patients and clinicians and help ensure patients’ care is overseen by clinician-led care teams that coordinate treatment across the health care system. Research shows that medical homes can lead to higher quality and lower costs, and can improve patient and provider-reported experiences of care.

NCQA standards align with the joint principles of the Patient-Centered Medical Home, established with the American College of Physicians, the American Academy of Family Physicians, the American Academy of Pediatrics and the American Osteopathic Association.

Recognition

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Charles R. Reppucci, Kathryn Cates Wessel honored at Butler Hospital’s annual gala

PROVIDENCE – This year, Butler Hospital’s annual gala, A Masterpiece of Hope, took place virtually on October 28. All proceeds will benefit Butler Hospital’s innovative addiction treatment programs and research initiatives.

At the event, CHARLES R. REPPUCCI was honored with the 2020 Outstanding Corporation Member Award, and KATHRYN CATES WESSEL presented with the Lila M. Sapinsley Community Service Award.

Mr. Reppucci was elected to the Butler Hospital Board of Trustees in 1984 and has been a champion of the hospital ever since. He served as Butler Hospital’s Treasurer and Chair of its Finance Committee, before becoming Chairman of the Board. Mr. Reppucci is currently serving as Chair of the Care New England Board of Trustees, and is a member of its Governance and Nominating, Strategic Planning, Compensation and Finance committees. He is also currently Vice Chair of the Board of the Rhode Island Blood Center and past Chair of the Board at Vector Health Systems. A true philanthropist, Mr. Reppucci has also served as the Treasurer of the Legal Aid Society of Rhode Island and Chair of both the St. Thomas Moore Parish Council and the Quinnessett Country Club.

The Lila M. Sapinsley Community Award honors an individual or individuals in recognition of his/her personal achievements in and/or contributions to the field of Mental Health or Behavioral Healthcare for the people of Rhode Island. In addition, award recipients can be recognized for his/her efforts toward advancing Butler Hospital as a leader in Brain Science Research. Ms. Cates-Wessel has more than 30 years of experience in the substance use disorder field in administration, medical education, and policy. She is the Chief Executive Officer of the American Academy of Addiction Psychiatry (AAAP). Prior to her work at AAAP, she was the Associate Director of Brown University’s Center for Alcohol and Addiction Studies for over 19 years and Executive Director of Physicians and Lawyers for National Drug Policy, a think tank of leaders from law and medicine advocating for prevention/treatment over incarceration. Her experience helping those with addictions also includes her work as Associate Director of a residential treatment center for adolescents for substance use disorders and co-occurring mental disorders.

This year’s presenting sponsor for A Masterpiece of Hope is the Providence law firm of Hinckley Allen.
Clinical trial volunteers at Alzheimer’s Disease and Memory Disorders Center honored with nominations for national awards

PROVIDENCE – The Alzheimer’s Disease and Memory Disorders Center [ADMDC] at Rhode Island Hospital has nominated five clinical trial volunteers for the Global Alzheimer’s Platform Foundation’s [GAP] 2020 National Citizen Scientists Awards®. These nominations are an opportunity to recognize and celebrate remarkable volunteers for their dedication, passion, and commitment to finding a cure for Alzheimer’s.

“Citizen Scientists are the first responders of Alzheimer’s disease,” said JOHN DWYER, the President of GAP. “They confront the disease head-on by donating their most precious asset, time, to help the world make progress towards a cure.”

Every year, GAP recognizes exceptional Alzheimer’s clinical trial volunteers from its 80+ affiliated Alzheimer’s research centers across North America. Though 5.8 million Americans – including 24,000 Rhode Islanders – are living with Alzheimer’s, 90% of Alzheimer’s clinical trials are delayed by slow recruitment.

“There are currently more than 100 drugs in the Alzheimer’s treatment pipeline, but the lack of volunteers impedes progress,” said DR. BRIAN OTT, the Director of ADMDC. “That’s why volunteer Citizen Scientists are vital – we cannot find a cure without them.”

How to Get Involved with Alzheimer’s Research in Rhode Island
Rhode Islanders 50 and older who speak English can join the Rhode Island Alzheimer’s Disease Prevention Registry. People with normal memory as well as those with mild memory loss are encouraged to sign up. For more details about volunteering in clinical trials and upcoming studies, contact: memory@lifespan.org or call 401-606-4399.

About the Global Alzheimer’s Platform Foundation
The Global Alzheimer’s Platform Foundation (GAP) is a patient-centric nonprofit organization dedicated to speeding the delivery of innovative medicines to those in need by reducing the time and cost of Alzheimer’s disease clinical trials. In collaboration with other foundations, research centers and industry, GAP established GAP-Net, a growing network of more than 80 academic and private Alzheimer’s disease research centers across the US and Canada. GAP-Net sites share data, best practices, use of a central Institutional Review Board and common clinical trial contracts. GAP is committed to enhancing clinical trial recruitment and study processes to reduce clinical testing cycles by up to two years.

To learn more about GAP, please visit: globalalzplatform.org.

ADMDC’s 2020 National Citizen Scientist Award nominees are:

Ann Bellotti – Champion Award
Ann was diagnosed with Alzheimer’s four years ago. She embraces the challenge and strives for constant intellectual engagement by being a historical society docent, participating in a monthly book club, and being a clinical trial volunteer. Ann sees her participation in clinical trials as a way to be proactive about her diagnosis: “It keeps me on my toes.”

Barbara Costa – Cornerstone Award
Barbara is a former nurse who lost her mother to Alzheimer’s. She has already participated in four trials and jumps at every opportunity to help. “I’m more likely to get it because my mother had it, and I also have years of medical experience, so I will continue to serve as long as it takes.”

Kate Lowell – Collaborator Award
Kate is a study partner for her father, David, who is living with Alzheimer’s. Kate is a wonderful advocate for research, and thinks of her study visits with her dad as a time to de-stress. “As crazy as it sounds, it’s an enjoyable moment for dad and me to hang out, and, best of all, he likes going.”

Michael Russo – Cornerstone Award
Michael’s father and his brother lived with Alzheimer’s disease. He has participated in three trials, and contributes to Alzheimer’s community events. “I don’t want to deny research a single damn thing. It’s too important.”

Robert (Bob) Lovinger – Cornerstone Award
Bob has participated in three clinical trials, and he uses his expertise to go above and beyond in supporting the research center. A former grant writer, Bob helps to create new funding opportunities for ADMDC, and in one instance his help secured funding for a full-time outreach position. “After retiring, I felt more acutely than ever the desire to volunteer and be part of something larger than myself.”

As COVID-19 disrupts lives across the globe, ADMDC has taken the necessary precautions to protect clinical trial volunteers and staff while continuing vital research. Study volunteers and study partners have remained dedicated to the search for a cure for Alzheimer’s, and have safely attended all necessary appointments during this pandemic. The center closed briefly in March to adjust to the new environment, and today it is operating with strict mask requirements, deep cleaning regimens, and social distancing protocols.
Recognition

Women & Infants NICU nurses honored by Congressional Coalition on Adoption Institute

PROVIDENCE – KIMBERLEY AND AJ MAYNARD of Chepachet, RI, and EMILIA AND ROBERT MORSILLI of Hope, RI, were recently honored by the Congressional Coalition on Adoption Institute (CCAI) as 2020 Angels in Adoption. Mrs. Maynard and Mrs. Morsilli are both employed as Neonatal Intensive Care Unit (NICU) nurses at Women and Infants Hospital in Providence, RI.

Kimberley and AJ Maynard have fostered 9 children over the past 9 years, and Emilia and Robert Morsilli are the proud parents of five beautiful children, of whom two were adopted.

“Women & Infants Hospital is incredibly proud of Kimberley Maynard and Emilia Morsilli, both NICU nurses, and their families, who exhibit the loving and caring nature that Women & Infants Hospital prides itself on. Adoptive parents are special people, offering new beginnings to children in need. Both women are a credit to Rhode Island, as well as our nation, and am thrilled to learn they are both being honored by Congressman Jim Langevin and the Congressional Coalition on Adoption Institute (CCAI) as 2020 Angels in Adoption,” said Shannon Sullivan, President and COO, Women & Infants Hospital.

Both families were honored at the virtual 22nd Annual Angels in Adoption Gala.

James E. Fanale, MD, President and CEO of Care New England to be honored for business leadership

PROVIDENCE – On November 18, JAMES E. FANALE, MD, President and CEO, Care New England Health System, will be honored for business leadership at PBN’s Business Excellence Awards virtual ceremony. The award program recognizes leadership and excellence at organizations in both the private and public sectors.

“I am truly grateful to those at the Providence Business News who selected me as the recipient of this year’s Providence Business News Business Leadership Award. I love what I do every day at Care New England, caring for Rhode Islanders, so it’s humbling to learn that I’ve been recognized in such a meaningful way,” said Dr. Fanale, MD.

He added, “I do not, however, accomplish CNE’s mission of delivering high-quality, affordable healthcare, alone. I am part of a team of expert doctors, nurses, clinicians, and administrators, who provide that healthcare at the many hospitals and clinics across our system. Together, we are making a difference in the lives of those we serve. It’s what makes me show up to the office every day.”

In addition, PBN will produce a profile of each of the honorees in a PBN Special Report which will be published and inserted into Providence Business News’ November 20th issue.

In August, Forbes magazine published, Meet America’s Best Employers by State 2020, ranking Care New England ninth for best employers in Rhode Island.

Staff Physician, Clinical Practice (2 Positions)

Staff Physician, Clinical Practice (2 Positions)

Position is full-time, permanent. (Please note: Work is scheduled and performed during academic year (late August – mid-May) and salary is paid on calendar year basis.)

Participate as a member of the health care delivery team that provides exemplary primary care services to patients, diagnoses and manages acute and chronic health problems, and contributes to health promotion and disease prevention efforts in partnership with the patient. Serve as a health care and wellness resource for the campus community, and, working in a collaborative environment, focus on educating the patient as well as on providing quality care.

Visit the URI jobs website at https://jobs.uri.edu to apply and view complete details for posting (SF00968).

Please attach the following 3 (PDF) documents to your online Employment Application:

(#1) Cover letter (pdf), (#2) Curriculum Vitae (pdf), and (#3) “Other pdf Document” – names and contact information of three professional references, two from a supervisor.

APPLICATION DEADLINE: The search will remain open until the position has been filled. First consideration will be given to applications received by October 23, 2020. Second consideration may be given to applications received by November 20, 2020. Applications received subsequent to second consideration date (November 20, 2020) may not be given full consideration.

APPLICATIONS MUST BE SUBMITTED ONLINE ONLY.

The University of Rhode Island is an AA/EEOD employer. Women, persons of color, protected veterans, individuals with disabilities, and members of other protected groups are encouraged to apply.
Obituaries

CARMINE J. CAPALBO, MD, 95, of Greenville, passed away peacefully on October 3, 2020. Born in Providence, Dr. Capalbo was the beloved husband of the late Jane (Tomellini) Capalbo.

Dr. Capalbo graduated from Classical High School and shortly thereafter was recruited as an 18-year-old into the U.S. Army during World War II. He was trained as an army medical corpsman and served initially in the European Theater Operation and ultimately on the Pacific Front until the completion of the war. Upon his return home, he pursued his education at Brown University and graduated in the class of 1948. He received his medical degree from Georgetown Medical School in 1952. Surgical internships at RI Hospital followed where he remained as a surgical staff member for 46 years. He also was a Clinical Associate Professor of Surgery at Brown University Medical School. He was a member of the American College of Surgeons, New England and Providence Surgical Societies, and the Rhode Island Medical Society.

Dr. Capalbo thoroughly enjoyed patient care and clinical practice as well as his association and friendships with his surgical staff colleagues to whom he was known as “Cap or Cappy”. Upon his retirement from University Surgical Associates, he noted that his greatest pleasure had been his interaction with and being a fellow learner with the fine, young surgical staff members he trained over the years.

He is survived by his children Mary E. Engle and her husband Rick; Peter M. Capalbo and his wife Jody; Margaret DeSimone and her husband Herb; Lisa Capalbo; and Nancy Klim and her husband Greg.

During his active professional life, Dr. Capalbo always found meaningful time for his family. He was a loving father to his five children and a devoted husband to his dear wife, Jane. In his later years, his beloved grandchildren, Sarah, Dana, Nicholas, Michael, Peter, Thomas, Andrew and Caroline and their accomplishments brought him the greatest joy.

Donations in his memory may be made to: RI Hospital Foundation – Carmine Capalbo Endowment Fund, P.O. Box H, Providence, RI 02901.

RICHARD RAYMOND DYER, MD, born March 1, 1921, passed away on September 27, 2020, just about 5 months shy of his 100th birthday, peacefully in his sleep. He was predeceased by his loving wife, Natalie A. Cousens, with whom he shared 53 wonderful years.

He graduated from Colby College and Yale Medical School. Thereafter, while in the US Navy, he trained as a general surgeon and served in Guam at the end of WWII. He completed his training at Newport Naval Hospital and then Rhode Island Hospital and was one of the first surgeons at Kent Hospital after joining with the late Dr. Arthur Hardy in January, 1952. His surgical group, Toll Gate Surgical Associates, grew in number and included the late Dr. Peter Baute, Dr. Daniel Reardon, Dr. David Luz, Dr. John Isaac and his daughter Dr. Candace Dyer. He and his daughter were the first father/daughter surgical team in the state and practiced together from 1985–1993 when he retired from practice, having served as Chief of Surgery at Kent for a time.

He is survived by two sisters: Betty Brewster of Memphis, TN; Nancy Bacon of Amherst, NH and Bonita, FL; four daughters and their spouses: Susan and Thomas Fink of the Villages, FL; Pamela and Arthur Turton, MD, of Williamstown, MA, and Silverthorne, CO; Deborah Martin Dyer and Frank Martin of Marblehead, MA, and Candace Dyer, MD, and Rene Gourd of Warwick, RI and Sarasota, FL. He is also survived by 6 grandchildren, 2 step-grandchildren, 12 great-grandchildren, 2 step-great-grandchildren and numerous nieces and nephews.

He was a former Deacon at Woodbury Union Presbyterian Church, a former member of the Board of Directors at Blue Cross Blue Shield of RI, and past President at Warwick Country Club as well as honorary lifetime members of both Wildcat Country Club in Estero, FL, and Warwick Country Club in Warwick, RI.

A celebration of his life will be sometime in the future, due to Covid-19. Donations in his memory may be made to Kent Hospital, Surgery Department, Warwick, RI; Smile Train Charity or a charity of your choice.

NATHAN BERNIC EPSTEIN, MD, passed away October 8, 2020. Raised on Cape Breton Island in its small but vibrant Jewish community, he left to attend Mount Allison University as an undergraduate but retained his sense of connection to Cape Breton, as well as his accent and colorful language, throughout his life. He completed his medical degree at Dalhousie University and then embarked on his psychiatric residency at McGill University.

After two years of training, he moved to Boston for further studies at the Boston State Hospital, followed by training in psychoanalysis at Columbia University. He returned to Canada in 1955 as one of its first training analysts and began clinical and academic work at McGill. He joined the staff of the Department of Psychiatry at the Jewish General Hospital, becoming its Psychiatrist-in-Chief by 1960. At that time, he and his colleagues pioneered a major academic and clinical initiative into the understanding of family functioning and the development of family therapy. For the next 50 years, he remained actively engaged in this research, teaching, and clinical practice, and what came to be known as The McMaster Model of Family Functioning became recognized and used internationally.

In 1967, he became the founding Professor and Chairman of the Department of Psychiatry at the newly created McMaster University Faculty of Medicine in Hamilton, Ontario. Nate always regarded the decade that followed as the most exhilarating phase of his academic career, under the visionary leadership of John Evans, when they fomented a revolution in medical education.
BOHDAN R. KUSMA, MD, passed away on October 11, 2020. He was the beloved husband of Taissa (Turkevich) Kusma. Born in Kolomiya, Ukraine, he was the son of the late Orest and Maria (Mereniuk) Kusma. His father, a biology professor, led the Esperanto Movement in Ukraine.

Dr. Kusma was a pediatrician in private practice for 46 years in New Jersey, Wickford and Pawtucket, RI, before retiring in 2005. He cherished his patients and was known for his compassion, kindness, and dedication.

RALPH P. MIECH, MD, PhD, 87, of Riverside, died peacefully on October 10, 2020 surrounded by his loving family. He was the beloved husband of Elizabeth (Kornely) Miech. Born in South Milwaukee, WI, the son of the late Joseph P. and Helen (Witucki) Miech, he lived in Riverside since 1963. Dr. Miech was an Associate Professor of Pharmacology and Biochemistry at Brown University from 1963-2000. He came from Wisconsin to help establish Brown University’s Medical School, where he taught and conducted research. He worked as an ER physician at Landmark hospital for many decades.

Dr. Miech graduated from Marquette University and Marquette School of Medicine. He received a PhD in Pharmacology from the University of Wisconsin.

Besides his wife, he is survived by his daughter, Lydia Kusma Minyayluk of Lincoln, RI and his son, Orest Kusma of Coventry, RI; his grandchildren, Crystal Kusma, Roman Kusma and Stefan Minyayluk. He is also survived by relatives in Ukraine, Germany, England, Latvia, Italy, Australia and the US.

Donations in his memory may be made to The Ukrainian Museum, 222 East 6th St., New York, NY 10003. For online condolences visit www.thekeefefuneralhome.com.

Ralph P. Miech

In 1978, he was appointed Professor and Chair of the Department of Psychiatry and Human Behavior at Brown University as well as Psychiatrist-in-Chief of Butler Hospital. A decade later, on completion of his term, he led the Department of Psychiatry of Parkwood Hospital in New Bedford, MA, continuing to work on the front-lines of inpatient and outpatient care until age 86.

He enjoyed an international role as a researcher, innovator, leader and clinician. He was invited speaker in the United Kingdom, Australia, Mexico, Israel, South America, and throughout North America. His scientific publications span more than 50 years and include many articles and book chapters as well as two co-authored books, “Silent Majority” [1969] and “McMaster Model of Family Functioning: A Comprehensive Method for Evaluation and Treatment of Families” [2005]. He trained generations of students in psychiatry and in family therapy and was recognized with honorary degrees from the University of Guelph and Dalhousie University.

In his last decade, he traveled to Tibet, Turkey and Russia. But his final visits to Cape Breton and Hamilton were made possible by his steadfast friend John Bihldorff.

The family gives immeasurable thanks to his gifted and dedicated caregiver Rosa and her team, the devoted staff of Laurelmead, and the many other people there who enriched his life.

He was predeceased by his wife, Barbara (Elman) and is survived by his daughters Anne Tope (Joel Barad), Nancy (David Goldbloom), and Jane. He is also survived by his older sister Fae, his grandchildren Daniel (Jessica Duffin Wolfe), William (Zachary Russell), Gordon, and Lee, as well as his great-grandchildren Wolf and Kensington.

There will be no funeral service and arrangements for a virtual memorial will be announced later. Donations in his memory can be made to the Benny and Shayna Epstein Scholarship Fund, which Nate established to support medical students from Cape Breton, at www.dal.ca/giving.

He began his medical studies at the University of Lviv, Ukraine and the University of Vienna, Austria. He fled from the Soviets with a falsified passport from Vienna to Innsbruck, where he lived in a student camp and received his medical degree from the University of Innsbruck School of Medicine. He did his internship at Columbus Hospital in New York City and his residency at Coney Island Hospital in Brooklyn, NY. He was on the active medical staff at Women & Infants Hospital in Providence and Memorial Hospital in Pawtucket.

Besides his wife, he is survived by his daughter, Lydia Kusma Minyayluk of Lincoln, RI and his son, Orest Kusma of Coventry, RI; his grandchildren, Crystal Kusma, Roman Kusma and Stefan Minyayluk. He is also survived by relatives in Ukraine, Germany, England, Latvia, Italy, Australia and the US.

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