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Testicular Relapse of Primary Diffuse Large B-cell Lymphoma of the Central Nervous System – a Rare Occurrence

THOMAS A. OLLILA, MD; THOMAS P. KISHKOVICH, MD; ADAM J. OLSZEWSKI, MD; NIMESH R. PATEL, MD; CYNTHIA JACKSON, MD; BRETON ROUSSEL, MD; RABIN NIROULA, MD; DIANA O. TREABA, MD

ABSTRACT
Among diffuse large b-cell lymphoma (DLBCL) subtypes, primary testicular lymphoma (PTL) has one of the highest risks of central nervous system (CNS) relapse. The converse, primary CNS lymphoma (PCNSL) relapse outside the CNS is rare. Molecular analysis has illustrated a genetic similarity between PTL and PCNSL. Here we present a case of a 64-year-old man with testicular relapse of PCNSL 20 months after a complete response to high dose methotrexate-based chemotherapy. His tumor demonstrated a molecular profile similar to both PCNSL and PTL on next generation sequencing, and molecular analysis confirmed common clonal origin of his CNS and testicular lesions. We review prior cases of testicular relapse of PCNSL, which lacked molecular investigations, and discuss the implications of the genomic findings in our patient, including future treatment options.

KEYWORDS: extranodal lymphoma; MYD88; cell of origin; CDKN2A; PIM1

INTRODUCTION
A feared and devastating outcome of primary testicular lymphoma (PTL) is central nervous system (CNS) relapse. In PTL, rates of CNS recurrence have been documented as high as 21–25% and the efficacy of prevention with rituximab or CNS prophylaxis is questioned. Conventional thought has been that as lymphomas of sanctuary sites, PCNSL, PTL and other extranodal lymphomas such as vitreoretinal, breast and female genital tract, may escape treatment through decreased penetration and efficacy of immunochemotherapy. The molecular features of primary CNS lymphoma (PCNSL) and PTL are similar, notably featuring mutations in MYD88, CD79B, PIM1 and deletions in CDKN2A. The shared molecular profile may suggest an inherent proclivity to these sites, rather than simply a failure of treatment. Almost all are of activated B-cell (ABC) cell of origin which carries a poor prognosis compared with the germinal center B-cell phenotype. Here we present a man with PCNSL and testicular relapse. Molecular profiling of his relapse is consistent with both PTL and PCNSL.

CASE PRESENTATION
A 64-year-old man presented with anomic aphasia. Magnetic resonance imaging (MRI) demonstrated a 4 cm brain mass in the right frontal lobe. Computed tomography (CT) of his chest, abdomen and pelvis showed a complex renal cyst without other evidence of malignancy. A neurological biopsy provided the diagnosis of diffuse large b-cell lymphoma (DLBCL) rendered, with neoplastic large, centroblast- and immunoblast-like lymphoid cells, with a predominant angiocentric distribution, a high proliferation rate (>90%, MIB1 antibody) expressing CD20, MUM1 (Figure 1), CD45 and being negative for CD10 and EBER. Polymerase chain reaction (PCR) demonstrated clonal IGH rearrangement (Figure 2). The patient had a normal testicular ultrasound as part of standard staging for PCNSL. He began treatment with high-dose methotrexate (HD-MTX). His disease on MRI initially increased, then regressed, and 9 months later MTX was discontinued. At 15 months, MRI of the CNS showed only a stable 7mm focus in the right frontal lobe.

Twenty months after the initial diagnosis of PCNSL, the patient presented with a painful right testicular mass. Orchiectomy revealed parenchymal infiltration by neoplastic large PAX5+ B-lymphoid cells, centroblast- and immunoblast-like, with a higher density immediately below the tunica albuginea, compression and focal infiltration of the seminiferous tubules, and an immunophenotype similar to patient's previously diagnosed CNS lymphoma: MUM1 positive and with a high proliferation rate (>95%, MIB1 antibody) (Figure 1), negative for CD10. The lymphoma cells co-expressed MYC (>40%) and BCL2 (>50%) and had only partial/weak CD20 expression. An EBER in-situ hybridization stain was negative. Additionally, comparative molecular analysis found clonal IGH rearrangement with capillary electrophoresis peaks similar in size to those detected in prior CNS disease (Figure 2). Fluorescent in situ hybridization (FISH) studies were negative for BCL6 and MYC rearrangements and IGH::BCL2 fusion; however, three copies of the IGH and BCL2 probes were detected in the neoplastic
lymphoid population, suggestive of rearrangements with different partners or additional gene copies. Given recurrence, the patient consented for next generation sequencing (NGS) on the orchiectomy sample, performed using a clinically validated assay of 406 (DNA) and 265 (RNA) genes relevant to hematologic malignancies (FoundationOne® Heme; Foundation Medicine, Inc., Cambridge, MA) and median exon coverage of 750x. The tumor contained pathogenic variants in $\text{MYD88} (p.L265P)$, $\text{BTG1} (p.Q45*)$, $\text{PIM1} (p.L164F)$, $\text{ETV6}$ [splice site 33+1G>A], and biallelic deletion of $\text{CDKN2A/B}$.

At this point, his MRI of brain was negative although MRI spine demonstrated infiltration of cauda equina. A fluoro-deoxyglucose (FDG)-positron emission tomography (PET) scan demonstrated extensive systemic disease, including right atrium, right pleura, left hepatic lobe, small bowel, and multiple areas of abdominal and mediastinal lymphadenopathy. After emergent spinal irradiation, he began treatment with rituximab, cyclophosphamide, doxorubicin, vincristine and prednisone (R-CHOP) alternating with rituximab, ifosfamide, cytarabine, etoposide (R-IVAC). Despite complications including sepsis and ifosfamide encephalopathy the patient attained a complete response by then end of cycle 2 of both spinal and systemic disease. However, he elected no further therapy given treatment-related toxicity. Eight months after his diagnosis of relapsed large B-cell lymphoma, he died due to complications of urosepsis.

**DISCUSSION**

A review of PubMed and Google Scholar identified four cases of PCNSL with testicular relapse (Table 1). A 64-year-old man with PCNSL, treated with combination chemotherapy followed by radiation, experienced a testicular relapse 13 months after treatment.11 He was treated with rituximab at time of relapse and did well. In another case, a 48-year-old man with PCNSL who attained a complete response with HD-MTX, intrathecal MTX and steroids followed by radiation, relapsed in the testicle 3 years after initial diagnosis.12 A 60-year-old with complete response to chemotherapy following radiation relapsed in his left testicle 8 years after treatment.13,14 Finally, a 54-year-old who relapsed both in the CNS and in the testis 6 months later after a complete response to similar treatment.15 Notably, unlike the other four cases where the disease relapsing outside the CNS was limited to a unilateral testicle, without extra-testicular disease, our patient’s testicular disease served as a herald for extensive multi-organ disease.

From a histopathological perspective, these PCNSL tumors with testicular relapses appear to be aggressive B-cell lymphomas with high proliferation rates (>95% in our case and >90% in case 1, Table 1), a non-germinal center...
immunophenotype (our case and case 3, Table 1) and were not associated with EBV infection (our case and case 3, Table 1). Of interest, based on the imaging studies available in four out of the five cases, the CNS lymphomatous lesions were located in close proximity to the pia mater/subarachnoid space (our case and cases 1 and 2) and lateral ventricle (case 1). In our patient, MRI detected cauda equina involvement at relapse and this finding raises the hypothesis of possible drop-down metastases from the CNS lymphomas in some patients with lymphomatous lesions located close to the subarachnoidal space. It can be also speculated that a vascular/lymphatic connection between conus spinalis and the testes, in a small group of patients with CNS lymphomas, might explain this rather unusual relapse pattern.

Since publication of prior case reports, considerable progress has been made identifying molecular patterns and similarities in PCNSL and PTL. The genetic features of PCNSL and PTL have been examined in depth through a combination of quantitative polymerase chain reaction (qPCR), -FISH, Sanger sequencing, and immunohistochemistry (IHC) to assess copy number alterations (CNAs), single nucleotide variants (SNV) and protein expression. Both types of lymphoma show frequent alterations in MYD88, CD79B, and CDKN2A. These alterations, especially deletion in CDKN2A, have been also noted as more frequent in CNS relapse of systemic DLBCL. Several groups have defined groups or clusters of DLBCL based on certain molecular profiles; however, standard prophylactic treatment even in the high-risk groups has questionable benefit. In the publicly available data from Reddy et al, alterations in genes that characterize the cluster C5 according to the classification by Chapuy et al, or the “MCD” genomic subtype according to Schmitz et al, were associated with both CNS and testicular involvement (Figure 3). These alterations, including mutations in MYD88, CD79B, PIM1, and deletion of CDKN2A, were present in our patient, consistent with both PCNSL and PTL.

The MYD88L265P mutation, mutations in PIM1, and deletions in CDKN2A, may offer therapeutic targets. Ibrutinib, a first in class Bruton’s tyrosine kinase (BTK) inhibitor, has shown efficacy in DLBCL with MYD88L265P mutation and in PCNSL. The TEDDI-R trial utilized high dose ibrutinib (up to 840mg) monotherapy followed by ibrutinib combined

---

**Table 1. Summary of PCNSL cases with testicular involvement at relapse**

<table>
<thead>
<tr>
<th>No.</th>
<th>Age</th>
<th>Symptoms</th>
<th>CNS lymphoma</th>
<th>Therapy for CNS lymphoma</th>
<th>Relapse</th>
<th>Interval to relapse from diagnosis</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>64</td>
<td>Blurred vision, dizziness, right eye vision loss and right-side hemiparesis</td>
<td>Splenium of the corpus callosum area</td>
<td>MTX with dexamethasone, etoposide and vinblastic; WBRT 38Gy, local boosted 20Gy</td>
<td>Right testis, mass 0.5 x 0.5 cm</td>
<td>6 months</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>48</td>
<td>Headache, vomiting; Generalized clonic tonic seizures</td>
<td>Right frontoparietal area</td>
<td>High dose MTX, intrathecal MTX and steroids; radiotherapy and high dose cytosine arabinosine</td>
<td>Right testis</td>
<td>3 years</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>60</td>
<td>Not available</td>
<td>Right temporal</td>
<td>MTX 4w, 40Gy, 4x intermittent intrathecal MTX, radiotherapy (40Gy in 20 fractions)</td>
<td>Left testis</td>
<td>8 years</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>54</td>
<td>Blurred vision, floaters</td>
<td>Multiple enhancing lesions: temporal</td>
<td>8 cycles MTX WBRT (14Gy)</td>
<td>Brain, multiple lesions, posterior regions</td>
<td>15 months</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>64</td>
<td>Confusion; Difficulty to walk</td>
<td>Right frontal lobe</td>
<td>Eight cycles of high-dose MTX</td>
<td>Right testis, mass 3.5x3.3 x 3.1 cm; Right atrium, right pleura, left hepatic lobe, abdominal and mediastinal lymphadenopathy, cauda equina involvement</td>
<td>18 months</td>
<td>Our case</td>
</tr>
</tbody>
</table>

Legend: MTX: methotrexate; WBRT: whole brain radiation therapy

---

**Figure 3. Genomic alterations associated with the risk of CNS (A) or testicular (B) involvement in the publicly available dataset from the DLBCL genomic analysis study by Reddy et al. P values are corrected for false discovery rate using the method by Benjamini and Hochberg.**

![Figure 3](image-url)
with temozolomide, etoposide, liposomal doxorubicin, dexmethasone, ibrutinib and rituximab and produced a complete response rate of 86%. This is tempered by high rates of fatal Aspergillus infection. Ibrutinib dose reductions and the use of antifungal therapy can improve risk while preserving efficacy.

In addition to the 32% of DLBCL with CDKN2A alterations in lymphoma, alterations are noted in other malignancies including melanoma, gynecologic malignancies, thoracic and head and neck cancers. CDKN2A encodes P16(INK4a) which inhibits CDK4/6. In addition, alterations in CDKN2A may associate with response to checkpoint inhibition. In a small series of PCNSL and CNS relapse of PTL, nivolumab had a 100% overall response rate with impress durability of response. This is not the only postulated explanation for checkpoint inhibitor response in PTL and PCNSL. The high degree of mutational burden in PCNSL and PTL may allow it to grow in immune-privileged sites yet not elsewhere in the body and this is supported by a high number of infiltrating T-cells noted in PCNSL and PTL. In lung cancer, head and neck cancer and familial melanoma, CDKN2A deletions may increase sensitivity to therapy with checkpoint inhibitors. PNCSL, PTL and primary mediastinal b-cell lymphoma all share high rates of 9p24.1 copy gain, similar to Hodgkin lymphoma and associated with PD-L1 overexpression.

The PIM1 kinase provides another potential therapeutic target. PIM1 mutations are seen frequently in DLBCL, with reported rates of 12-30%. Rates of PIM1 mutations are as high as 38% in CNS relapse of DLBCL. PIM1 has also been implicated in ibrutinib resistance in DLBCL. As PIM1 mutations are seen in a wide range of hematologic and solid malignancies, several compounds have been tried as targeted agents although they are frequently associated with unacceptable toxicity. Interestingly, the CDK4/6 inhibitor abemaciclib also inhibits PIM1, making it a potential therapeutic agent in DLBCL with either CDKN2A deletions or PIM1 mutations.

Outcomes for relapsed PCNSL have historically been poor. Prognosis is closely tied to duration of first remission, but site of relapse, either local or distal, does not seem to have an impact in a large French series. Some studies, however, suggest a better prognosis to CNS-only relapse. Prior cases of PCNSL relapsing in testis were reported before next generation sequencing became available. Our patient could not withstand intensive cytotoxic chemotherapy routinely used to treat aggressive lymphomas with CNS involvement, emphasizing the importance of introducing novel targeted options into the management of patients who may be debilitated from primary or secondary CNS disease.

References


Case report of a periprosthetic joint infection (PJI) due to Staphylococcus lugdunensis.

ABSTRACT
CASE: A 79-year-old active male presented during the first COVID-19 pandemic surgery moratorium with late Staphylococcus lugdunensis periprosthetic total hip arthroplasty infection. Due to the unprecedented circumstances, novel treatment of IV and oral antibiotic suppression was trialed without preceding surgical intervention. At latest follow-up, the patient has two-year revision-free survival with normalization of inflammatory markers and MRI findings, and resolution of clinical symptoms.

CONCLUSION: We report a novel surgery-sparing treatment for periprosthetic hip infection. Judicious caution should be used in the application of similar therapies, as host and organism characteristics likely contributed substantially to the success of this case.

KEYWORDS: Staphylococcus lugdunensis, hip arthroplasty, periprosthetic infection

INTRODUCTION
It has been said that necessity is the mother of invention. At times, from late 2019-2022, due to resource consumption, scarcity, and allocation toward battling the COVID-19 pandemic, and risk of nosocomial SARS-2-CoV-2, our ability to bring patients to the operating room for orthopedic surgeries was limited. In early 2020, before a vaccine was available and when many factors were still yet unknown about the COVID-19 disease, major medical and ethical considerations arose concerning exposing patients to potential life-threatening COVID-19 infection in the surgical episode of care. Mortality risk was exceptionally high at this time, especially in older patients, with rates reported over 10%. It is under these unprecedented circumstances that we present a case of a periprosthetic joint infection (PJI).

CASE REPORT
The patient first presented as a 77-year-old male with radiographically-confirmed severe left hip osteoarthritis, which had become refractory to conservative care. Past medical history was significant for Parsonage-Turner syndrome in his right arm, status post C5-6 laminectomy, and medically treated benign prostatic hyperplasia and hypertension. He was a physically fit individual, BMI 22, a high-level competitive squash player, though was recently unable to compete at his previous level due to severe left hip pain and loss of motion. He underwent left total hip replacement through the direct anterior approach October 2017 (Figure 1). His hospital course and early recovery were unremarkable, and he returned to sport 12 weeks postoperatively. Over the subsequent two postoperative years, the patient returned to high level sport, but with persistent hip flexor symptoms that improved only slightly with physical therapy and stretching.

The spread of COVID-19 began in 2019 but the scope of the pandemic was noted by very few, with only significant governmental concern in late January 2020. In March 2020 spread in the United States was significant, resulting in many unprecedented societal limitations including social distancing, mask mandates, and closing of infrastructure in attempts to prevent spread of the virus.

Figure 1. Postoperative AP (A) and cross table lateral (B) left hip radiographs showing uncemented left total hip arthroplasty with a fully hydroxyapatite-coated tapered wedge stem and porous coated titanium modular acetabular component and delta ceramic on highly-crosslinked polyethylene articulation.
In March 2020, the patient presented to the office with increasing groin pain. Inflammatory labs were drawn: ESR 29 mm/h (normal 0–20), CRP 18 mg/L (normal 0–10). Left hip radiographs 3/17/20 revealed new femoral periostitis and osteolysis surrounding femoral component (Figure 2). Left hip MRI 3/25/20 confirmed radiographic findings and further revealed joint effusion with debris/synovitis, iliopsoas bursitis, and reactive left inguinal/external iliac adenopathy (Figure 3). Principal diagnosis at this time was atypical organism PJI, with differential diagnosis including stress reaction with iliopsoas tendinitis/bursitis about the stem considering his high impact repetitive loading activities.

Due to the evolving COVID-19 pandemic, elective surgeries were halted at Lifespan, our academic medical center (Rhode Island Hospital and The Miriam Hospital) from March 23, 2020, to May 29, 2020. A hip aspiration was done March 27, 2020 and sent for manual differential, and culture to be held for 14 days. Nucleated cell count was reported to be 22,400/mm³, 92% neutrophils, 5% monocytes/macrophages, 3% lymphocytes. Gram stain showed moderate PMN but no organisms seen. Cultures grew 1+ colonies of *Staphylococcus lugdunensis* after 3 days of incubation, susceptible to oxacillin, ciprofloxacin, erythromycin, clindamycin, tetracycline, rifampin, and vancomycin.

A multidisciplinary team, including specialists from orthopaedic surgery, radiology, infectious disease, geriatrics, and public health collaborated on the difficult task of medical decision-making. Although the infecting organism was determined to be *Staphylococcus lugdunensis*, it was fortunately susceptible to most antibiotics. Bioburden was also low, no organisms were seen on the gram stain, the cultures took several days to grow, and few colonies were seen on the culture plates. Serendipitously, the patient host was also an especially healthy and vigorous individual, whose presenting symptom was pain and not sepsis or systemic illness.

Three treatment options were considered: 1. two-stage-exchange-arthroplasty, 2. debridement, antibiotics, and implant retention, “DAIR,” or 3. attempting a novel treatment with intravenous then oral antibiotics. The patient, in consultation with his care team and family elected treatment option 3.

Under different circumstances, a decision would have likely been made for source control to decrease bioburden with at least an irrigation and debridement surgery. After multiple discussions involving the clinical team, the patient and his family, a considered decision was made for a novel attempt at treatment with surgery-sparing antibiotic therapy. The patient was treated with a course of home-delivered IV followed by oral antibiotics, based on previously reported treatments. A long-term suppressive antibiotic therapy was selected with a favorable side effect profile. (See Table 1 for Antibiotic treatment.)

On April 2, 2020 a 4-week course of in-home treatment with IV Ceftriaxone was initiated, PO Rifampin was added.
Table 1. Antibiotic treatment

<table>
<thead>
<tr>
<th>Week</th>
<th>Antibiotics Used</th>
<th>Start Date</th>
<th>Stop Date</th>
<th>Other Antibiotics Considered</th>
<th>Treatment Considerations, Modifications or Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4</td>
<td>Ceftriaxone 2g IV q 24h</td>
<td>4/2/20</td>
<td>4/19/20</td>
<td>Nafcillin IV</td>
<td>PCC line not possible due to patient’s vasculature, so midline placed. Nafcillin is contraindicated for administration through a midline due to reports of tissue necrosis in cases of extravasation.</td>
</tr>
<tr>
<td>1 to 4</td>
<td>Rifampin 900mg PO qd (600mg open, 300mg gns)</td>
<td>4/19/20</td>
<td></td>
<td></td>
<td>Rifampin was added to improve biofilm penetration. The staggered start of Rifampin after a week of ceftriaxone treatment was purposefully done in order to allow for a decrease of the initial bioburden in an attempt to avoid rapid development of bacterial resistance to rifampin especially in the absence of initial surgical source control.</td>
</tr>
<tr>
<td>5 to 16</td>
<td>Moxifloxacin 400mg PO qd</td>
<td>4/30/20</td>
<td>7/15/20</td>
<td>Ciprofloxacin PO</td>
<td>Moxifloxacin removed after 4 weeks; clinical and inflammatory markers improved. Moxifloxacin chosen given its increased activity against staphylococci compared to ciprofloxacin.</td>
</tr>
<tr>
<td>17+</td>
<td>Cefadroxil 500mg PO bid</td>
<td>7/25/20</td>
<td></td>
<td></td>
<td>After discussion with the treatment team, the patient elected to initiate long-term antibiotic suppression therapy considering the lack of initial surgical source control and the aggressive nature of S. lugdunensis. The patient reported mild lower extremity neuropathy, which may have been associated with moxifloxacin. Additionally, due to the increased risk for tendinosis and tendon rupture with fluoroquinolones, moxifloxacin was discontinued and he was started on cefadroxil, an anti-staphylococcal first-generation cephalosporin, 500mg orally twice daily for suppression.</td>
</tr>
</tbody>
</table>

Figure 4. ESR and CRP graphed over time. Normal range ESR 0–20 mm/h. Normal Range CRP 0–10 mg/L. Included are timepoints of infection diagnosis and initiation of treatment.

By July 9, 2020, inflammatory labs had fallen below the upper limit of normal, and continued trending down to a nadir (ESR 3 mm/h, CRP 0.83 mg/L) by the fall of 2021; physical exam was normal at in-person office visit. MRI July 21, 2020 showed resolution of previous periostitis and marrow edema. Improvement in joint effusion and iliopsoas bursitis was also noted. The femoral osteolysis persisted. The patient reported much less pain and was back to playing squash by September 29, 2020. MRI October 8, 2020 demonstrated similar findings of July 2020 with improvement in residual osteolysis and continued improvement of joint effusion and bursitis (Figure 5).

At his office visit April 13, 2021, more than a year after initiation of antibiotic treatment, the patient reported no pain, no systemic symptoms, and was playing squash. He continued to have some rare anterior groin pain consistent with his history of hip flexor tendinitis. Radiographs and physical exam are unchanged. He continues antibiotic suppressive therapy.

Currently, at over two years after initiation of this treatment, the patient is alive, revision-free, tolerating antibiotic suppression, without significant symptoms, and has returned to his previous high level of activity before PJI diagnosis. Post-treatment MRI shows normalization of findings. ESR and CRP have normalized and are stable in the normal range at most recent follow-up. Of interest, the patient contracted COVID-19 in 2022, after he had been vaccinated and boosted, and recovered uneventfully.

Figure 5. MARS protocol 1.5T MRI (Siemens Magnetom Aera) October 8, 2020, axial STIR WARP TR 6500, TE 34 demonstrate complete resolution of periostitis (black arrow) and peri-implant marrow edema (white arrow) 6 months after initiation of novel treatment.
**DISCUSSION**

Prosthetic joint infections (PJI) are associated with considerable morbidity and mortality, treatment can be complicated, lengthy, costly, and unfortunately of limited success.\(^4\)\(^5\) Capable of forming biofilms, Staphylococci species are responsible for a large proportion of PJI. The more virulent organism, *Staphylococcus aureus*, can cause higher-grade infections and can be particularly difficult to treat due to its ability to develop resistance. Coagulase Negative Staphylococci (CoNS)\(^6\) PJI are generally considered atypical infections and can be particularly difficult to treat due to its ability to develop resistance. Coagulase Negative Staphylococci and can be particularly difficult to treat due to its ability to form biofilms, Staphylococci species are responsible for the treatment result of successful management of PJI without initial surgical debridement.\(^1\)\(^2\) The importance of the treatment result of cultures to grow, and there was only 1+ growth on culture plates. We have not found any reports in the literature of successfull management of PJI without initial surgical debridement.\(^1\)\(^2\) The importance of the treatment result presented in this case report is potentially of value to the orthopaedic and infectious disease communities; this could be the first report of successful treatment of PJI without an additional surgery. Definitive proof of cure cannot be determined in this case, however, due to the patient’s subsequent treatment with suppressive antibiotic therapy.

It is our opinion that in most instances of prosthetic joint infection, source control with at least one additional surgical procedure would be necessary to decrease the concentration of bacteria to optimize the effect of antibiotic treatment. This approach would be especially important in the treatment of *Staphylococcus aureus* or other aggressive pyogenic PJI organism. Clinical caution should temper the extrapolation of the favorable results of this case to treatment of additional patients. However, especially during times of limited access to surgery, this approach may be a potential alternative.

**References**


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**Disclosures**

Statement of Informed Consent: The study patient was informed that data concerning the case would be submitted for publication and agreed.

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Transcranial Magnetic Stimulation for Posttraumatic Stress Disorder: Prevention in the Context of New Trauma

MCKENNA C. BRENNAN, BA; NOAH S. PHILIP, MD

ABSTRACT

Posttraumatic stress disorder (PTSD) is a disabling psychiatric disorder that can result from experiencing a traumatic event. While a single index trauma can result in PTSD, patients often have additional traumatic events over the course of their lives. Despite this, little research to date has focused on prevention of PTSD recurrence following a novel traumatic experience. We present three cases of individuals with chronic PTSD who experienced an additional traumatic experience during treatment with transcranial magnetic stimulation (TMS) at VA Providence. Despite expectations to the contrary, TMS appeared to prevent a recurrence or worsening of their PTSD symptoms. We discuss possible neurobiological explanations for these outcomes and implications for possible use of TMS to prevent PTSD following trauma.

KEYWORDS: Transcranial Magnetic Stimulation, Post Traumatic Stress Disorder, Prevention

BACKGROUND

Post-traumatic stress disorder (PTSD) is a common consequence of experiencing a traumatic event, with lifetime prevalence in the general population around 7%.1 Research has further demonstrated a dose-response effect, where experiencing additional traumatic events further increases risk for, and severity of, PTSD.2,3 Rates of both trauma exposure and lifetime rates of PTSD are higher among Veterans,2,4 making this population a high priority target for intervention.

Transcranial Magnetic Stimulation (TMS) is a form of noninvasive brain stimulation that uses pulsed magnetic fields to induce electrical changes in targeted areas of the brain.5 TMS, used for the treatment of pharmacoresistant depression since 2008,6 has demonstrated clinical efficacy for other comorbid disorders, including PTSD.7,8 TMS has also recently shown promise as a maintenance therapy to prevent depression relapse in those who responded to a prior course of TMS.9 However, research to date has not explored TMS to prevent relapse of PTSD symptoms.

We present three cases of Veterans with PTSD who experienced an additional traumatic life experience during TMS therapy at VA Providence. Treatment parameters were generally standard, on-label device settings (Magstim, UK; 10Hz to left dorsolateral prefrontal cortex, 120% of motor threshold, 3000 pulses per day). All patients completed the PTSD Checklist for DSM-5 (PCL-5)10 and the Patient Health Questionnaire (PHQ-9)11 at start of treatment and every 5th treatment to assess symptoms of PTSD and depression respectively. [See Table 1]. A 5-point change on the PHQ-9 and a 10-point change in the PCL-5 are considered clinically significant.

**Table 1. Patient PCL-5 and PHQ-9 Scores During Treatment**

<table>
<thead>
<tr>
<th>Treatment #</th>
<th>Case 1 PHQ-9</th>
<th>Case 1 PCL-5</th>
<th>Case 2 PHQ-9</th>
<th>Case 2 PCL-5</th>
<th>Case 3 PHQ-9</th>
<th>Case 3 PCL-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>15</td>
<td>50</td>
<td>12</td>
<td>44</td>
<td>24</td>
<td>68</td>
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<tr>
<td>Treatment 5</td>
<td>15</td>
<td>49</td>
<td>2</td>
<td>23</td>
<td>21</td>
<td>58</td>
</tr>
<tr>
<td>Treatment 10</td>
<td>11</td>
<td>42</td>
<td>3</td>
<td>24</td>
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<td>Treatment 15</td>
<td>16</td>
<td>43</td>
<td>3(^\wedge)</td>
<td>22(^\wedge)</td>
<td>19</td>
<td>49</td>
</tr>
<tr>
<td>Treatment 20</td>
<td>11(^\wedge)</td>
<td>51(^\w^)</td>
<td>2</td>
<td>32</td>
<td>18</td>
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<td>Treatment 40</td>
<td>11*</td>
<td>40*</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

*Denotes individual’s endpoint treatment
\(^\w^\)Denotes first questionnaires after traumatic event. Not applicable to case 3 due to ongoing events.

CASE PRESENTATIONS

Case 1

A man in his 50s with a history of chronic PTSD, Major Depressive Disorder (MDD), and generalized anxiety disorder presented for a standard course of TMS. Patient’s trauma history included childhood physical abuse and combat exposure during deployment 15 years earlier. Prior to starting TMS, the patient’s PHQ-9 score was 15, indicating moderate depression, and their PCL-5 was a 50, indicating moderate to severe PTSD. During TMS, this individual was involved in a serious motor vehicle accident that required surgery. This patient completed 40 sessions of TMS. At end of treatment, he completed the PHQ-9 and PCL-5, scoring an 11 and 40 respectively. Patient experienced a clinically significant response in PTSD symptoms, and reduction in depressive symptoms. After treatment, patient reported improvements in sleep, mood, and decreased vigilance. In addition, he...
reported ability to manage life stressors appropriately that, prior to treatment, would have left him incapacitated. At 6 months post treatment, Veteran continued to experience PTSD and depression symptoms, yet maintained functioning, reporting a PHQ-9 of 9 [PCL-5 not completed].

**Case 2**
A woman in her 60s with chronic PTSD and MDD presented for TMS treatment. Patient had a past medical history of alcohol use and substance use disorders, as well as four inpatient hospitalizations for suicidal ideation and overdoses in the context of life stressors between two and five years before treatment. Patient was sober for two years prior to treatment, with relapses in the context of stressful events one year prior. Past traumatic experiences for this individual include sexual violence and unexpected death of siblings between childhood and her 40s. Prior to TMS treatment, this individual scored a 12 on the PHQ-9 and a 44 on the PCL-5, indicating moderate symptoms of depression and PTSD. Between treatment 10 and 15, the patient experienced a house fire with complete loss of her home and property. She was in the house, but unharmed. Patient completed 30 treatments, ending with a PHQ-9 of 6 indicating mild depression symptoms, and a PCL-5 of 25, consistent with PTSD symptoms that would no longer meet threshold criteria for PTSD diagnosis. At end of treatment, patient reported improvement in quality of life, as well as the ability to better handle this stressful event which otherwise would have increased her depression. Patient experienced worsening symptoms [low mood, poor sleep, increased stress] in the 3 months following TMS treatment due to increasing stressors related to relocating housing. Following this 3-month period, however, as stressors subsided, symptoms improved. In the 6-month period following TMS, she did not have any relapses or any new inpatient hospitalizations.

**Case 3**
A man in his 30s with chronic PTSD and MDD presented for TMS treatment. Prior trauma was related to combat exposure from deployment 12 years prior. Patient had a history of two suicide attempts two and four years before treatment without hospitalization, as well as one hospitalization for anxiety in the context of marital conflict. At start of treatment, patient scored a 24 on the PHQ-9 and a 68 on the PCL-5, consistent with severe depression and PTSD. Patient also had chronic suicidal ideation without intent or plan. Over the course of TMS, he experienced additional stressors related to divorce, including forced separation from children and housing instability requiring VA homeless services’ housing relocation assistance. Following treatment, the patient scored a 16 on the PHQ-9 and a 49 on the PCL-5, indicating moderate symptoms, and a clinically significant response in both symptoms of PTSD and depression. The patient reported increased quality of life, improved sleep and decreased rumination. Of note, he experienced reductions in suicidal thoughts, with a 2-week period during treatment with no thoughts of suicide. Following treatment, in the context of further stressors, Veteran reported occasional thoughts about death and anxiety, yet no suicidal ideation or attempts.

**DISCUSSION**
We present three cases of individuals with treatment resistant PTSD and MDD who experienced an additional serious traumatic experience during a standard course of TMS treatment. All patients experienced clinically significant reductions in PTSD symptoms, and 2 individuals reported clinically significant reductions in depressive symptoms. These individuals reported qualitative improvements aligning with these clinical gains, including improvements in mood, anxiety, vigilance and sleep. A common theme across all patients was they noted feeling more capable of handling ongoing stressors related to their trauma. This is reflected in symptoms remaining below pre-treatment levels, and lack of relapse to substance use and suicidal behavior as had been precipitated by stressful life experiences in the past.

These cases, taken together, indicate that being actively engaged in TMS treatment during a traumatic experience could have a preventative effect against the exacerbation of PTSD symptoms. Several pharmacological treatments for PTSD have been tested in a preventative capacity [reviewed in12], such as propranolol with mixed results limited by small sample sizes and lack of a control group. We recognize similar limitations in this report preclude any definitive results about the efficacy of TMS in this context. Although not all individuals who experience a trauma will go on to develop PTSD, it is associated with a wide range of poor outcomes, and those who develop chronic PTSD are less likely to reach remission. Therefore, intervening before symptom onset after first trauma, or before symptom exacerbation in those known to have a history of PTSD, is particularly important.

TMS may pose a unique preventative mechanism against exacerbation of PTSD in relation to its targeting of specific brain regions implicated in PTSD, namely the Dorsolateral Prefrontal Cortex (DLPFC). The DLPFC is an important node of the Executive Control Network (ECN), which allows top-down regulation of executive control and emotional regulation. PTSD is associated with hypoactivity in the DLPFC. Therefore, TMS that aims to increase activity in the DLPFC may facilitate a patient’s ability to regulate emotions and process stressors. This is reflected in our cases by individuals reporting increased ability to respond to new traumatic events that previously would have affected their functioning.

This case series indicates TMS may prevent the exacerbation or onset of PTSD symptoms in patients experiencing...
traumatic events while engaged in treatment. Given the nature of TMS, neuroimaging could be used to guide TMS treatment course decisions in clinical settings for those who experience a novel traumatic event during treatment. While beyond the scope of this case series, future studies could investigate the potential to develop TMS as an initial intervention to prevent PTSD in those who have experienced a traumatic event, particularly for those who have previously responded well to TMS treatment.

References


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A 68-year-old male with atrial fibrillation on anticoagulation, coronary artery disease (CAD) status post bypass surgery, chronic kidney disease, alcohol use disorder, type II diabetes, and intermittent gastrointestinal bleeding for which an outpatient work-up was ongoing was admitted for acute on chronic anemia with a hemoglobin of 6.6 g/dL (baseline 10.0 g/dL) and hypotension. Initial work-up revealed positive fecal occult blood testing. He was transfused one unit of packed red blood cells with an increase in hemoglobin to 7.2 g/dL. Three days following his initial transfusion he developed a leukocytosis to 17,400 k/mm, prompting a peripheral smear which revealed mild rouleaux formation and significant (29% of WBC) hemophagocytosis of red blood cells (RBC), polymorphonuclear leukocytes (PMN), and platelets, with necrobiosis/pyknosis of WBC (11%). (See Figure 1.) Review of smears pre-transfusion and days 1 and 2 post-transfusion were largely unremarkable with mild anisocytosis, poikilocytosis, elliptocytes, and burr cells. A repeat CBC 12 and 24 hours after the elevated WBC revealed a normal WBC count and differential. A repeat smear performed at both time points was largely unremarkable. Physical exam revealed stable and known splenomegaly but otherwise he did not meet other criteria for hemophagocytic lymphohistiocytosis (HLH) with normal triglycerides, low ferritin level, no other cytopenias, and no fever.

Removal of senescent RBCs by macrophages is not completely understood. Aged, transfused RBCs undergo phagocytosis to a greater extent when compared to fresh transfused RBCs, primarily by macrophages of the spleen and marrow. Rarely, transfusion with senescent RBCs have been reported to show peripheral blood hemophagocytosis. In this case the RBCs were donated only one week prior to the transfusion. Thus, he appeared to have unexplainable, asymptomatic, transient hemophagocytosis without significant clinical consequences. Given the delayed onset of hemophagocytosis this was felt not to be secondary to an effect from the transfused blood. There have been previous reports of hemophagocytosis noted on bone marrow biopsy without clinical evidence of HLH. To our knowledge this is the first reported case of hemophagocytosis by neutrophils in the peripheral blood with no clear evidence of HLH.

References

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Hoffmann’s Sign with Clonus
JOSEPH H. FRIEDMAN, MD

**KEYWORDS:** Hoffmann’s sign; spasticity; cervical myelopathy; clonus

Hoffmann’s sign is present if a downward flick of the middle finger of the relaxed hand, supported by the examiner, produces contraction of the thumb and index finger. It is considered a sign of pathological hyperreflexia of similar import to the better-known Babinski reflex, indicating corticospinal tract damage in the neck or above. In one study of 304 normal controls with normal cervical cord MRIs, it was seen only once\(^1\), indicating a low false-positive rate (0.3%). It was positive in 40\(^2\)–67\(^3\)% of patients undergoing decompression surgery for cervical myelopathy, and possibly more sensitive than the Babinski reflex.\(^3\) In this case, a 78-year-old man with parkinsonism and spasticity had decompression for cervical cord compression associated with MRI-confirmed myelomalacia. Spasticity continued to worsen, however, after surgery but he died from medical problems. Autopsy revealed corticobasal degeneration, a “parkinson plus” syndrome with spasticity and other abnormalities. This may be the first report of clonus, repeated reflex contractions elicited by a single sudden extension, induced by this maneuver.

**References**

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Rhode Island Has the Highest Rate of Medicare Part D Claims for Benzodiazepines Among New England States

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ABSTRACT

BACKGROUND: Benzodiazepine use among older adults is discouraged.

METHODS: We analyzed the Medicare Part D Prescribers by Provider and Drug dataset to determine the number of benzodiazepine claims per 100 Medicare enrollees for each NE state between 2016–2020, and to determine the percentage of benzodiazepine claims by provider type.

RESULTS: Rhode Island led all NE states with the highest annual rates of Part D benzodiazepine claims for all years from 2016 to 2020. Benzodiazepine claims decreased in all NE states over the 5-year period. Internal medicine and family practice providers were associated with the highest percentage of benzodiazepine claims.

CONCLUSION: While Part D benzodiazepine claims declined between 2016–2020, the overall volume of dispensings suggests that these medications remain overprescribed among older adults. Our findings underscore the need for intensified efforts to reduce benzodiazepine use among Medicare beneficiaries in RI.

KEYWORDS: Benzodiazepine, Medicare Part D, Deprescribing

INTRODUCTION

The opioid crisis caused a reckoning about the immense risks of addictive medication. Benzodiazepines are like opioids in that they are frequently prescribed despite having risks that can outweigh the therapeutic benefit. Benzodiazepines remain commonly prescribed for an array of conditions such as anxiety, insomnia, panic and seizure disorders, and skeletal muscle spasms. They are also prescribed for many off-label conditions, and are often used illicitly.

National survey data from 2015–2016 indicate that approximately 10% of US adults reported using benzodiazepines during the past year, and an estimated 8.7% of US adults age 65–80 years received benzodiazepines in 2008 (men 6.2%, women 10.8%). In 2016, an estimated 8.5% of adults age 65–75 years in the US veteran’s population were prescribed benzodiazepines. Three benzodiazepine drugs, alprazolam, clonazepam and lorazepam, were among the top 100 drugs dispensed in the US in 2020.

Harms of benzodiazepines include central nervous system depression, cognitive impairment, and an increased risk of accidents and falls. Tolerance and dependence occurs with chronic use, and it can be intensely difficult for patients to discontinue therapy. In 2020 the US Food and Drug Administration added a boxed warning to all benzodiazepine products alerting prescribers about these risks.

Benzodiazepine use among older adults is particularly discouraged. The Beers Criteria for Potentially Inappropriate Medication Use in Older Adults offers a “strong” recommendation to generally avoid benzodiazepines, noting that elderly patients have increased sensitivity to and decreased metabolism of these agents. The Choosing Wisely initiative includes a recommendation by the American Geriatrics Society that clinicians and older patients should question the use of benzodiazepines as an initial therapy for insomnia or agitation.

To assess the extent of prescription benzodiazepine use among older adults in Rhode Island (RI) we analyzed Medicare Part D data to compare the number of benzodiazepine claims per beneficiary within each New England (NE) state. We also determined the provider types that most frequently issued benzodiazepine prescriptions. The results provide a backdrop for discussion about the narrowing indications for benzodiazepines and deprescribing these drugs.

METHODS

We conducted a series of retrospective cross-sectional analyses of the Medicare Part D Prescribers by Provider and Drug Dataset for the years 2016–2020. These data are publicly available for download from the Centers for Medicare & Medicaid Services (CMS) website. The data are patient de-identified, and include provider-level summaries of pharmacy dispensings issued to Medicare Part D enrollees for both Medicare Advantage and stand-alone prescription drug plans.

From these data we determined the total annual claim counts in each NE state for each year from 2016–2020, for alprazolam, chlordiazepoxide, clonazepam, clorazepate, diazepam, estazolam, flurazepam, lorazepam, oxazepam, temazepam, and triazolam. Claim counts represent unique pharmacy dispensing events (i.e., new prescriptions and refills). Patients using benzodiazepines chronically would have multiple claims per year. To enable cross-state...
comparisons, we divided the total number of annual benzodiazepine claims in each state by the number of Medicare beneficiaries enrolled in either Medicare Advantage or stand-alone Part D drug plans in that state as of December of the enrollment year. We then calculated the annual number of benzodiazepine claims per 100 enrolled Medicare beneficiaries for each NE state.

One major caveat to our calculations is that for deidentification purposes the database only includes events where a prescriber was associated with 11 or more prescriptions for a specific benzodiazepine drug during the year. For example, if Part D benzodiazepine claims dispensed to patients of physician A.B. Smith included 21 prescriptions for lorazepam, 13 prescriptions for diazepam, and 4 prescriptions for alprazolam, only the lorazepam and diazepam prescriptions would appear in the database. Thus, the data enable a general assessment of the annual volume of benzodiazepine claims but cannot be used to derive precise estimates of total dispensings.

We also determined the percentage of benzodiazepine claims issued by provider type for each NE state in 2020. Using the provider designations listed in the database, we created three groups which represented more than 90% of all benzodiazepine claims: 1.) Internal Medicine/Family Practice; 2.) Psychiatry and/or Neurology; and 3.) Mid-Level Prescribers, which included Physician Assistant, Nurse Practitioner, and Certified Clinician Assistant. We contrasted the proportions of benzodiazepine claims issued from these provider type groupings across the NE states.

We did not test the statistical significance of differences in claims for benzodiazepines between NE states or over time because the data are aggregated at the provider and drug product levels, precluding variance-based testing. We calculated 95% confidence intervals around the claims rates, but the large number of observations resulted in overpowering that yielded extremely small intervals and no additional insights. This study was deemed exempt by the IRB at the University of Rhode Island, as the data are publicly available and do not include patient-specific information.

RESULTS

In 2020 there were 177,605 total claims for benzodiazepines in RI, dispensed to 169,563 enrollees of Medicare Advantage and stand-alone Part D drug plans. This equates to 105 benzodiazepine claims per 100 enrolled Medicare beneficiaries, or roughly 1 claim for each beneficiary. RI led all NE states with the highest rates of annual Part D benzodiazepine claims per 100 Medicare beneficiaries for all years from 2016 to 2020 (Figure 1). The rate in 2020 was similar in Massachusetts (MA), for which there were 96.8 annual benzodiazepine claims per 100 beneficiaries, while lowest rates were observed for Vermont (VT) and Maine (ME), which had 62.4 and 60.4 annual benzodiazepine claims per 100 beneficiaries, respectively.

There was a decreasing trend in total annual benzodiazepine claims per 100 beneficiaries for every NE state over the 5-year period, with one exception being a slightly increased rate of benzodiazepine claims in RI for 2017 compared with 2016. Otherwise, rates of annual benzodiazepine claims per 100 beneficiaries decreased year after year in each NE state. ME had the most substantial decrease in total annual benzodiazepine claims per 100 beneficiaries over the 5-year span, as the ME rate in 2020 was 30% less than the ME rate in 2016. In contrast, RI experienced a lesser 13.3% decline.
in benzodiazepine claims per 100 beneficiaries in 2020 as compared with the RI rate for 2016.

Figure 2 depicts the top prescriber types associated with benzodiazepine claims for each NE state in 2020. For all NE states, Internal Medicine/Family Practice providers were associated with the highest percentage of benzodiazepine claims. RI had the highest percentage of claims that were prescribed by Internal Medicine/Family Practice providers (50.4%), while Psychiatry/Neurology was the second most frequent prescriber type in RI (22% of claims). In all other NE states mid-level practitioners were the second most frequent prescriber type. The percentage of benzodiazepines issued by mid-level practitioners was lowest in RI (21%) and highest in ME (36%) and NH (35%).

**DISCUSSION**

We were encouraged to observe a decreasing trend in the annual rate of benzodiazepine claims in Medicare Part D in RI and for all other NE states, which suggests that efforts to limit the use of these medications among older adults are having an effect. However, the overall number of benzodiazepines dispensed in Medicare Part D across NE states reveals that these medications continue to be commonly prescribed. Notably, the highest rate of benzodiazepine claims occurred in RI, which had approximately 1 benzodiazepine claim for each Medicare beneficiary in 2020. This was more than 40% higher than the rate for ME and VT. These findings suggest the need for coordinated and intensified efforts to reduce the use of benzodiazepines among Medicare beneficiaries in RI, involving prescribers, pharmacists, payers and patients.

Several explanations may be offered to explain the higher rate of benzodiazepine claims in RI as compared with other NE states. Perhaps Medicare beneficiaries in RI have a higher prevalence of conditions for which benzodiazepines are prescribed. We were unable to assess medical diagnoses, which are not included in this database. However, benzodiazepine use has been reported to be higher in the Medicare disability population as compared with Medicare beneficiaries age 65 or older. Thus, we wondered if the Medicare disability population was proportionally higher in RI than in other NE states. Yet these percentages are roughly the same for RI, NH, ME and VT, with each state having 14–15% of Medicare disability enrollees as a percentage of all Medicare enrollment in 2020. Another possible explanation for the higher rate of benzodiazepine claims in RI might be a greater degree of medicalization in RI, attributed to easier access to more densely situated providers and systems of care. This may also explain the higher rates of benzodiazepine claims observed for MA as compared with more rural NE states.

We also observed substantial variation across NE states in the types of providers who issued benzodiazepine prescriptions. Overall, 42–52% of benzodiazepine claims were prescribed by Internal Medicine/Family Practice providers. This suggests that efforts to reduce the use of benzodiazepines should focus on primary care. Additionally, benzodiazepine claims were more frequently issued by mid-level providers in NH, ME and VT as compared with other NE states, yet these differences belie different inclinations for benzodiazepine prescribing among mid-level practitioners across NE states, or rather reflect differing roles of mid-level practitioners. Nevertheless, 21–36% of benzodiazepine claims were issued by mid-level practitioners, and interventions to reduce benzodiazepine prescribing should include these providers. Relatively fewer benzodiazepine claims were issued by psychiatrists and neurologists [14–25%]. This finding aligns with a previous analysis of commercial pharmacy claims that found that a relatively small proportion of benzodiazepine prescriptions were issued for older adults by psychiatrists specifically [5.7%].

**REDUCING BENZODIAZEPINE USE**

Strategies for reducing the use of benzodiazepines include 1) prescribing these medications less frequently and for shorter duration, and 2) discontinuing the use of benzodiazepines. The first strategy is supported by an increasing emphasis on safer alternatives to benzodiazepines for most indications, including generalized anxiety disorder. US experts and guidelines from the United Kingdom and Canada highlight a preferred role for cognitive behavioral therapy (CBT), and recommend selective serotonin receptor inhibitors and serotonin-norepinephrine reuptake inhibitors as first line pharmacotherapy choices for chronic anxiety, while benzodiazepines should be limited to as-needed and short-term use.

Benzodiazepines are also prescribed for patients with post-traumatic stress disorder (PTSD), yet antidepressants are favored for this condition as well. Guidelines from the VA/DOD for the Management of PTSD and Acute Stress Disorder include a “strong against” for benzodiazepines as monotherapy in PTSD due to a lack of evidence for benefit and known harms. CBT has also been proven to be effective for insomnia, yet medication is often prescribed. Guidelines from the American Academy of Sleep Medicine (AASM) state that the benefits of triazolam are approximately equal to its harms [based on high-quality evidence]. The AASM rating of temazepam is more favorable, yet the AASM also note that robust long-term safety data for temazepam are lacking. Only triazolam and temazepam are addressed in the AASM guidelines, reflecting the lack of evidence for use of other benzodiazepines for insomnia.

Muscle spasticity is another condition for which benzodiazepines such as diazepam and clonazepam are prescribed. While these medications can be efficacious for this indication, they are less suitable than other agents for chronic spasticity due a high risk of tolerance and dependence.

Two other established roles of benzodiazepines include the
management of acute alcohol withdrawal\textsuperscript{21} and as an acute or adjunctive therapy for seizure disorders.\textsuperscript{22} These less prevalent conditions likely do not represent the majority of benzodiazepine prescribing in Medicare Part D.

A second emphasis for reducing the use of benzodiazepines is to discontinue their use when clinically appropriate. The benefit to harm calculus sides more towards harm as people age, and an earnest discussion about the risks of benzodiazepines with advancing age may provide patients with the motivation needed to transition off of therapy. However, cessation of chronic benzodiazepine use can be extraordinarily difficult and should never be abrupt; slow gradual tapering is essential. Severe withdrawal effects can include delirium tremens, convulsions, psychosis and suicidal ideation.\textsuperscript{23} Patients can also experience altered perception, headache, insomnia, irritability, nausea, and muscle aches, among other symptoms.\textsuperscript{24} For a basic outline of relevant considerations and a suggested tapering protocol, we refer the reader to a guidance document developed by the VA’s National Center for PTSD entitled *Helping Patients Taper From Benzodiazepines*.\textsuperscript{25} Additionally, practitioners should center the approach to discontinuation upon the lived experience of the patient, as the physical and emotional challenges posed by benzodiazepine cessation can have profound and continuing impacts.\textsuperscript{26}

This study has several limitations. Foremost, the Medicare Part D data used for this analysis enable only a general assessment of the annual volume of benzodiazepine claims for each NE state. Our results should not be interpreted as an epidemiologic estimate of the prevalence of benzodiazepine use, and differences in benzodiazepine claims across NE states may be attributable to varying demographic or clinical characteristics. The data used in this study do not include patient diagnoses, and we were unable to determine the indications for benzodiazepine use. Additionally, differences in the proportions of provider specialties associated with benzodiazepine claims should not be generalized beyond Part D enrollees. Finally, we omitted discussion of the substantial risk associated with the concurrent use of benzodiazepines and opioids as this was beyond the scope of our study.

**CONCLUSION**

While rates of Part D benzodiazepine claims declined between 2016-2020 for all NE states, the overall volume of dispensings suggests that these medications remain overprescribed among older adults. Highest rates of benzodiazepine claims were observed for RI. Throughout NE, a majority of benzodiazepine claims were issued by primary care and mid-level providers. Our findings underscore the need for coordinated and intensified efforts to reduce the use of benzodiazepines among NE Medicare beneficiaries, involving prescribers, pharmacists, payers and patients.

**References**

CONTRIBUTION

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Disclaimer
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Dispensed Opioid, Buprenorphine, Benzodiazepine, and Stimulant Prescriptions among Rhode Island Residents, 2017–2021

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ABSTRACT
The Rhode Island Prescription Drug Monitoring Program (PDMP) requires dispensers with an active Controlled Substance Registration to report Schedule II-V substances and opioid antagonists within 24 hours of dispensing. This database was designed to surveille diversion and identify high-risk prescribing to prevent drug related harms. Using PDMP data from January 1, 2017, to December 31, 2021, opioid, buprenorphine, stimulant, and benzodiazepine dispensing trends were explored. During this time, opioid prescriptions dispensed annually decreased by 27.3% (from 576,421 to 419,220), and benzodiazepine prescriptions dispensed annually decreased by 12.3% (552,430 to 484,496). High-risk prescribing also decreased with opioids prescriptions > 90 daily MME decreasing by 52.1% and instances of overlapping benzodiazepine and opioid prescriptions decreasing by 34.1%. Buprenorphine and stimulant dispensing have increased by 11.1% and 20.7%, respectively. Prevention interventions will continue to educate providers on appropriate prescribing practices and work to further reduce unnecessary prescribing within the state.

KEYWORDS: Controlled substances, overdose risk, opioid, Prescription Drug Monitoring Program, Rhode Island

INTRODUCTION
In response to the opioid overdose epidemic, in September of 2012, Rhode Island (RI) implemented the Prescription Drug Monitoring Program (PDMP). Since 2012, the PDMP has undergone numerous changes to increase its effectiveness and prevent drug related harms. When the PDMP launched, registration was voluntary, and dispensers had 30 days to report data on dispensed Schedule II, III, and IV substances. In June 2014, new legislation required all dispensers and prescribers with an active Controlled Substance Registration (CSR) to register for the PDMP and reduced the reporting period to 72 hours. In March 2015, the Rhode Island Department of Health (RIDOH) put forth regulations requiring prescribers to check the PDMP prior to initiating an opioid and/or when a patient is on opioids for more than six (6) months in a 12-month period. In addition to these requirements, RIDOH strongly encouraged all prescribers to review the PDMP before prescribing any controlled substance [Figure 1, see Appendix].

To increase registration efficiency and remove the onus from providers, in July of 2016, all those with an active controlled substance registration, including manufacturers, distributors, administrators, and dispensers were automatically registered annually with the PDMP (21-28-3.02). Other regulatory changes that occurred in July of 2016 included: decreasing the reporting timeline to one (1) business day, adding a requirement to report Schedule V substances and opioid antagonists to the PDMP, and requiring prescribers to review the PDMP every 3 months for patients on continuous use (21-28-3.20). In addition to this, for the first time, dispensing caps were implemented in which schedule II scripts were made valid for 90 days for fulfillment, only 30 days could be dispensed at a time, and initial opioid prescriptions could not exceed 30 MMEs per day or contain more than 20 doses (21-28-3.18). In 2017, initial opioid prescriptions were defined as prescriptions dispensed to anyone who had not been on opioids in the prior 30 days.

To increase safety precautions and lower overdose risk, in 2018 providers were required to have a conversation with their patients regarding the risk and benefits before prescribing an opioid. Additionally, providers were obligated to indicate diagnosis with appropriate ICD-10 code on a patient’s opioid prescription and to co-prescribe naloxone: 1) anytime a daily dose of over 50 MME is given either individually, or in combination with other opioid medications, 2) if opioids and benzodiazepine are given at the time, or if the script overlaps, or 3) if the patient has a history of opioid use disorder (OUD) or overdose. In addition, as of January 2020, RIDOH has mandated that all controlled substances be prescribed electronically, with limited exceptions.

The PDMP currently functions as a centralized, regulated system for collecting data on all controlled substances dispensed by retail pharmacies with a CSR within the state, and currently receives dispensed medications to RI residents in 34 other states [including all New England states]. Authorized users/pharmacies with an active CSR can consult the electronic PDMP database to produce information about their own prescribing practices, or the prescriptive history for individual patients, which can be used to inform potential prescriptions for the patient.
The PDMP is a tool that can identify high-risk prescribing patterns for an individual, such as: prescriptions with excessive morphine milligram equivalents (MME) or multiple controlled substance prescriptions from several pharmacies and providers. This generates clinical alerts which are automatically sent to relevant prescribers. These features aid in the surveillance of diversion and high-risk prescribing, identify individuals’ risks and facilitate appropriate patient education, and support positive health outcomes as they relate to opioid and other controlled substance usage.

While PDMP data is routinely used to document overall prescribing trends in the state, this work aims to provide a high-level overview of opioid, buprenorphine, benzodiazepine, and stimulant prescriptions dispensed to RI residents between 2017–2021.

METHODS
For this analysis, we utilized data from the RI PDMP to identify all opioid, buprenorphine, stimulant, and benzodiazepine prescriptions filled for RI residents between January 1, 2017, and December 31, 2021. Buprenorphine prescriptions approved by the Food and Drug Administration (FDA) for the treatment of opioid use disorder (OUD) were extracted from opioid prescriptions and analyzed separately.

Demographic variables including age, sex, and insurance status were reported as recorded in the PDMP. When reporting demographic characteristics among unique users, a prescription was selected at random if an individual was dispensed multiple prescriptions for the drug class/calendar year of interest.

Individuals dispensed opioids were classified as naïve users, non-naïve users, or both, using the prescription fill date and the days’ supply of medication dispensed. Individuals dispensed an opioid with no opioid exposure in the prior 30 days were classified as naïve. Individuals who were dispensed an opioid prescription but had opioid exposure in the prior 30 days were considered non-naïve. Individuals who met both criteria, such as individuals who received a naïve opioid prescription followed by a subsequent non-naïve prescription, were classified as both naïve and non-naïve. To observe trends in high-risk prescribing practices, we identified unique patients with a total daily dose of at least 90 MME and unique patients who received an overlapping benzodiazepine and opioid prescriptions for one or more days. Unique patients were compared using demographic variables, user type, calendar year, high risk prescribing practices, and type of controlled substance dispensation.

RESULTS
[See Appendix for Tables 1–5]

Overall, the number of unique RI residents dispensed at least one opioid prescription decreased 29.5% from 156,095 individuals in 2017 to 110,081 individuals in 2021. Despite a decrease in the number of individuals exposed to opioids, the demographics of individuals remained relatively constant over time with most patients aged 45+ [69.1%], median age overall of 56 years), and 57.2% of prescriptions filled by females (Table 1). When focusing on high-risk prescribing practices, the number of individuals with overlapping benzodiazepine and opioid prescriptions dropped from 30,200 in 2017 to 19,905 in 2021 [a 34.1% decrease]. Most individuals dispensed overlapping prescriptions were 55+ years of age [67.7%], and 65.3% of overlapping prescriptions were dispensed to females. Additionally, the number of individuals dispensed at least one opioid prescription with a daily MME of ≥90 decreased from 12,825 individuals in 2017 to 6,149 in 2021 [a 52.1% decrease]. Most individuals dispensed a prescription with a daily MME of ≥90 were 45+ years of age [87.6%], and 51.5% of prescriptions were dispensed to females (Table 2).

The amount of naïve opioid users dropped 28.5% from 94,626 in 2017 to 67,677 in 2021, while non-naïve users dropped 11.4% from 15,378 in 2017 to 13,645 in 2021. Patients classified as both naïve and non-naïve users dropped 37.6% from 46,091 in 2017 to 28,759 in 2021 (Table 1). Over the 5-year timeframe, the number of overall opioid prescriptions dispensed per year decreased 27.3% from 576,421 to 419,220, with oxycodone (41.5%), and hydrocodone (25.9%) being the most prescribed opioid prescriptions (Table 3).

The number of unique RI residents dispensed at least one buprenorphine prescription for OUD increased 7.6% from 7,038 in 2017 to 7,574 in 2021 and the number of overall buprenorphine prescriptions increased 11.1% from 75,409 in 2017 to 83,764 in 2021 (Table 5). Overall, most individuals who received a buprenorphine prescription were male (60.4%) and between the ages of 25–54 [75.7%]; Table 4]. The number of unique RI residents dispensed at least one stimulant prescription increased 9.4% from 48,637 in 2017 to 53,219 in 2021, and overall, 54.9% of recipients were female, and 56.5% were between 0 and 34 years old (Table 4). The overall number of stimulant prescriptions increased 20.7% from 374,919 in 2017 to 452,739 in 2021. The most dispensed stimulant was amphetamine (60.9%) followed by methylphenidate (17.5%) (Table 5). In contrast, the number of unique RI residents dispensed at least one benzodiazepine prescription decreased 14.6% from 112,754 in 2017 to 96,287 in 2021. Most individuals who received a benzodiazepine were female (66.9%) and aged 45+ [71.7%], (Table 4). The number of overall benzodiazepine prescriptions decreased 12.3% from 552,430 in 2017 to 484,496 in 2021. The most prescribed benzodiazepine overall was clonazepam (30.9%), followed by lorazepam (27.5%); Table 5).
DISCUSSION
During the 5-year study timeframe, opioid prescriptions, benzodiazepine prescriptions, and the number of unique individuals receiving opioids, benzodiazepines, and high-risk opioid prescriptions [MME > 90 or overlapping opioid and benzodiazepine] all declined, with no major changes in the demographics of individuals receiving these prescriptions. Though the decline in opioid exposures is encouraging at the population level, it does not provide insight into individual prescribing practices. Further work will need to explore if these trends are indicative of more responsible prescribing, or a more concerning trend such as patient abandonment which can contribute to illicit opioid use and worsen the existing opioid epidemic. In contrast to the decreasing trends noted above, dispensation of buprenorphine and stimulant prescriptions and the number of unique individuals receiving buprenorphine or stimulants have increased during the study timeframe.

When developing interventions and educational campaigns to reduce the number of individuals prescribed opioids, efforts often focus on decreasing the number of naive users. Focusing on naïve users and offering alternative pain management options when appropriate can help avoid introducing individuals to opioids and eliminate the chance of a prescription-induced opioid overdose from improper use. As an example, patients with appropriate conditions, such as musculoskeletal pain, frequently improve over time independent of treatment. Due to this, treatment guidelines now recommend non-pharmacotherapy options be explored first, followed by anti-inflammatory medications, with opioids reserved as a last resort.6 In contrast, reducing the number of non-naïve users (or individuals who have been using opioids long-term) is substantially more difficult, as they can have a higher tolerance to opioids and restricting their accessibility to prescription opioids may influence them to shift to illicit substances to manage their pain.7,8 Fortunately when examining the decrease in the number of individuals who received an opioid prescription, the number of users receiving only naïve opioid prescriptions exhibited a steep decrease (28.5%) when compared to users with only non-naïve prescriptions (11.4%). While we cannot attest if non-naïve users were appropriately transitioned off opioids, providers should follow published guidance on this practice to maximize patient outcomes.9,10,11,12 Likely due to these efforts to reduce opioid prescribing and exposures overall, the proportion of overdose deaths involving exclusively prescription drugs decreased from 67% in 2009 to 6% in 2021.13,14

From 2017–2021, there has been a notable increase in dispensed buprenorphine prescriptions for opioid use disorder, likely reflecting of ongoing efforts to connect individuals to treatment and improve treatment access. In contrast to individuals dispensed opioids, most individuals who die from an opioid overdose are male (74%), and between the ages of 25–54 (74%).9 Fortunately, this closely aligns with the demographics of individuals dispensed buprenorphine, with 61% male and 76% aged 25–54, showcasing that these prescriptions are reaching the population at highest risk of overdose.

In a study reviewing changes in patterns in benzodiazepine prescribing in the United States before and during the COVID-19 pandemic, it was found that buprenorphine prescription dispensation to women decreased 0.7% between January 2018 and March 2021. In men, buprenorphine prescription dispensations decreased 0.4% during the same time period.15 Rhode Island buprenorphine dispensing trends parallel national trends but are decreasing at a more dramatic rate. Stimulant dispensing trends within the United States increased 8.9% from 2014 to 2019, which is slightly less than the increases seen in RI from 2017 to 2021.16 With stimulant prescriptions on the rise, efforts will need to be allocated to understand the factors for stimulant prescribing and implementing prevention strategies.

To help promote responsible prescribing, the RI PDMP has implemented many changes to reduce exposure at the population level (Figure 1) as discussed above. Prescriber reports are sent out electronically to users to review their prescribing practices. Additionally, the PharmD Academic Detailing (PhAD) Program was initiated in 2019 and is ongoing, where pharmacists hold educational sessions on non-opioid therapies, appropriate opioid dosing, naloxone prescribing, Rhode Island pain management regulations, and best practices for acute pain management. This program aims to increase prescriber knowledge of naloxone, decrease initiate, or naïve, prescribing, and increase co-prescribing as appropriate, provider ability to counsel patients, and prescriber utilization of the PDMP.

Strengths and Limitations
The greatest strength of this study was the use of the RI PDMP data, a system where prescribers are automatically registered, which provides us complete data on all controlled substances dispensed from pharmacies in RI and prescriptions dispensed to RI residents in 34 other states. Of note, the RI population has exhibited minimal change during the study period (3.7% increase) highlighting the findings observed in this study are not due to underlying changes in the population. This work is subject to several limitations; first, the PDMP does not collect information on race or ethnicity, so limitations; first, the PDMP does not collect information on race or ethnicity, so
population level in Rhode Island. Future work will need to investigate if these trends are indicative of more responsible prescribing, or a more concerning trend such as patient abandonment. With the overdose epidemic continuing to worsen, these data can be used as a benchmark for continued public health interventions promoting responsible prescribing and efforts to link individuals with opioid use disorder to appropriate treatment.

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Statewide Variation in Cannabinoid Regulations

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ABSTRACT
As a growing number of states legalize the use of cannabinoids for medical and non-medical purposes, there continues to be large gaps in the understanding of appropriate dosing, impact on health, and the state’s role in regulation of products. Here, we present a summary of 2022 cannabis regulations by state to evaluate for the presence of THC:CBD ratios, maximum THC concentration or content within products, specific caps for cannabis possession, and requirements for testing for cannabinoid content and/or contaminants such as pesticides and heavy metals. These results are presented in Map 1 and Table 1 and demonstrate substantial variation among product THC content, purchasing limits, and quality measurements across the country. Finally, we note there is currently no centralized data collection platform for this set of information between states as cannabis use evolves, creating poor transparency between consumers and state regulators.

KEYWORDS: cannabis, cannabis regulation, cannabis potency

INTRODUCTION
The use and legalization of cannabinoids is growing nationally, now reaching the smallest state in the United States. As of Spring 2022, 37 states allow the use of medical cannabis while 19 states allow for non-medical (also referred to as recreational) use, the latest being Rhode Island which passed the Rhode Island Cannabis Act on May 25th 2022. Although typically classified as a single drug, the cannabis plant contains over 500 chemicals and 100 unique cannabinoids with diverse and sometimes opposing actions. How different cannabinoid ratios and mixtures interact and the impact on health effects is largely unknown. Federal regulations greatly restrict the ability of researchers to study even state-regulated cannabis products of differing strains and concentrations. Even among the two most commonly studied and most prominent cannabinoids delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD), appropriate medical proportions of THC and CBD remain undefined. This baseline uncertainty is reflected in the numerous challenges the recreational market has seen in addressing quality control and regulated use of cannabinoid products.

Cannabis is currently regulated at the state level. The biggest barrier to centralized regulation of cannabis is that its use and distribution remains a federal offense under the Controlled Substances Act. Here, we present a summary of 2022 cannabis regulations by state. For states with recreational and/or medicinal cannabis use we sought to evaluate whether laws considered THC:CBD ratios and/or specified cannabinoid ratio parameters in products. Further we sought to assess whether state laws outlined maximum THC concentration or content limits within products. We also evaluated whether states outlined specific caps for cannabis possession and requirements for testing for cannabinoid content and/or contaminants such as pesticides and heavy metals. A summary of findings is outlined in Table 1 and Map 1, see Appendix.

THC:CBD RATIOS AND THC CONTENT
Outside of states that restrict THC content in CBD products (primarily for medical patients with intractable epilepsy), there are currently no states with legalized recreational cannabis that describe ratios of THC:CBD in either purchasing or possession legislation. For states with restriction of THC content in medical low THC/high CBD products, there is variation on the minimum level of CBD (range >5% to >15%) and maximum level for THC (ranging <0.3% to <0.9%, with the exception of Wisconsin which instead requires that the THC level must be less than that which can give a psychoactive effect instead of a specific concentration. Additionally, there are only three states with legalized medical or recreational cannabis that restrict THC potency in drafted regulations. This includes Montana, which limits THC concentration in marijuana flower to 35% unless directed by a physician, as well as Connecticut and Vermont, which newly cap marijuana flower potency at 30% and THC concentrates at 60% for recreational cannabis products, [see Map 1]. For edible cannabis products, multiple states have regulation on the maximum milligrams [mg] of THC in a serving [range 5 to 10] and per package [range 20 to 800] as reported in Table 1, though this again varies significantly across state lines.
PURCHASE AND POSSESSION LIMITS

Among the 50 states there is significant variation in the limits on possession and potency. While most states do enact a form of weight-based purchasing and possession limit strategies for raw cannabis products [in ounces or grams] and plants [immature, mature and/or total plants], that does not typically account for the concentration and overall dose of THC an individual can purchase at a time from recreational and medical dispensaries. For example, possession in the state of Washington is capped at 1 ounce (oz) of cannabis flower and cultivation or possession of cannabis plants for personal use is still prohibited, while Massachusetts allows up to 10 oz in a person’s home and Maine allows up to 6 mature or 12 immature plants per person. Weight-based sale limits also pose a problem with the considerable heterogeneity of product potency and cannabinoid concentration. Assuming 10mg of THC as a typical dose, current laws in Alaska and Michigan respectively allow for purchases of 560 doses and 2,283 doses per transaction based on median product potency.

The majority of states limit non-medical, recreational adult sales based on weight per transaction rather than weight per period of time (per week or month), while medical sales tend to be limited per time period similar to other pharmacologic prescriptions (see Table 1). This trend can be explained by state-run efforts to make legal sales competitive with the illegal market for recreational use. To monitor adherence to purchasing limits, states individually enact seed-to-sale tracking systems for use of cannabis products to assist state governments with collecting taxes, verifying safety testing, analyzing public consumption trends, and preventing diversion; however, there is no federal tracking system in place. While these systems have the potential to collect robust data for government use [consumer demographics, product and potency trends, and effects on public behavior in response to changes in legislation], there is only limited publicly available data from these tracking systems for outside analysis. Rhode Island has contracted Metrc, a cannabis track-and-trace platform that operates in many other states in the northeast region, to use radio-frequency identification tags that can confirm and track products [similar to tracking systems in running race bibs, pets and livestock, and automated retail checkout lines].

QUALITY MEASURES

Further, there is state-to-state variation on testing and verification of product concentrations, contaminants, and heavy metals with certain states such as California conducting their own product testing and other states such as Arizona outsourcing to state-certified labs without state run co-testing. Florida has some of the least defined testing requirements in the country and uses third-party labs to test for TCH and CBD levels. While Florida labs often test for some contaminants, there is no specific requirement for them to do so. In contrast, since 2020 the state of Michigan has been co-testing and inspecting processing facilities twice monthly and has one of the most restrictive additive laws banning vitamin E and any other additives that have not been FDA-approved as inhalants. Of note, there is currently no centralized data collection platform for this set of information between states, as evidenced by the greater than 80 resources needed to collate the information in Table 1. For example, there are no testing regulations available on state websites for Indiana and Louisiana regarding their medical cannabis programs and legislation, requiring emails be sent directly to their state government offices and third-party testing sites. This poses a large problem both for consumers making decisions about personal use of medical and recreational cannabis products as well as state governments creating effective and standardized legislation for regulation and safety of the cannabis market.

RHODE ISLAND REGULATIONS

As of 2021, Rhode Island requires testing by one of four state-certified third-party labs for cannabinoid profile, metals [arsenic, cadmium, lead and mercury], pesticides [17 commonly used in cannabis cultivation], moisture content, microbiologic contaminants [yeast, mold, bacteria], and residual solvents [31]. There is no scheduled testing verification process through the state of Rhode Island or between third-party labs although verbiage holds the right to do so. Rhode Island plans to set limits of cannabis possession to 1 oz and three plants per person with medical users to possess no more than 2.5 oz and 12 mature plants. Rhode Island does not currently have a published plan to set a potency limit or maximum THC:CBD ratio in marijuana products, though it will set a limit for edible products of 10mg THC per serving and 100mg THC per edible package.

CONCLUSION

Rhode Island takes a moderate approach on cannabis product testing and possession regulations compared to other states across the nation; however, ambiguity remains regarding quality and safety monitoring procedures and implementation. Due to lack of rigorous study of legalization practices and limited scientific data about individual cannabinoid effects and interactions, the optimal strategy for encouraging safe and responsible consumption of cannabis while limiting the risk of over-intoxication or diversion of products is uncertain. Currently the recreational market faces challenges in both quality control and safety, further complicated by rapid evolution of new and more potent preparations, increasing availability of alternative cannabinoids, and use of novel delivery methods. Unfortunately, scientific data is lacking to help guide industry and state regulators. With cannabis...
increasingly being used for medicinal and recreational purposes, it is important to expand our understanding of cannabinoids and their interactions and evaluate the impact of cannabis policy on health and community. Finally, transparency and centralized comparison regarding possession limits, THC/CBD content, and contaminant testing of cannabis products between states is urgently needed as more states move towards legalizing medical and recreational use. The lack of data of cannabis regulations and health outcomes creates barriers to informed personal cannabis consumption and evidence-based policy development.

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Evaluation of a Statewide Policy to Improve Post-Overdose Care in Emergency Departments and Subsequent Treatment Engagement

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ABSTRACT

OBJECTIVE: To evaluate the impact of a statewide treatment standards policy for post-overdose emergency department (ED) care on services provided and subsequent treatment engagement.

METHODS: This pre-/post-study used electronic health record data and surveillance data from Rhode Island. Outcomes were compared for patients attending EDs for opioid overdose before (03/1/2015–02/28/2017) and after (04/01/2017–03/31/2021) policy release.

RESULTS: Overall, 2,134 patients attended 2,891 ED visits for opioid overdose. Compared to pre-policy, visits post-policy more often included initiation of buprenorphine in or from the ED (<1% vs. 3%, p<0.01), provision of a take-home naloxone kit or prescription (41% vs. 58%, p<0.01), and referral to treatment (0% vs. 34%, p<0.01). Provision of behavioral counseling in the ED and initiation of treatment within 30 days of the visit were similar during the two periods.

CONCLUSIONS: Statewide post-overdose treatment standards may improve provision of some ED services. Additional strategies are needed to improve subsequent treatment engagement.

KEYWORDS: Overdose, opioid use disorder, emergency medicine, health policy, naloxone

INTRODUCTION

In response to the ongoing opioid overdose crisis, state and system-level organizations have implemented policies and programs to improve the quality of care delivered to patients with opioid use disorders (OUDs). Examples include quality improvement initiatives,1,3 financial incentives for development of OUD clinical pathways,4 and city or state supported or mandated provision of OUD services.5,10 Many of these policies focus on emergency department (ED) visits related to an opioid overdose, a clinical setting that provides an opportunity to prevent future overdose and promote treatment engagement.

Rhode Island has one of highest rates of overdose death in the United States (US),11 and has been a leader in developing innovative strategies to address the overdose crisis.

In March 2017, the Rhode Island Department of Health (RIDOH) released a targeted policy on OUD care: Levels of Care for Rhode Island Emergency Departments and Hospitals for Treating Overdose and Opioid Use Disorder.12 This policy standardized the approach to post-overdose care in EDs and was centered around four key components based on evidence and expert consensus: take-home naloxone, behavioral counseling at the time of overdose (including peer recovery support), referral to addiction treatment, and offering medications for OUD (specifically buprenorphine).13 The policy was the first of its kind, and 13 other states now have treatment mandates with varying scope.5 Published quality data demonstrated a promising increase in OUD services following the release of the policy, particularly among institutions without previously established opioid overdose services.14 However, this study relied on the institutions’ self-reported data, and a more rigorous analysis utilizing patient-level objective data is warranted to fully assess policy impact.

The purpose of this current study was to utilize electronic health record (EHR) and state administrative treatment databases to estimate the effectiveness of the policy on improving provision of the four key components of post-overdose ED care: (1) take-home naloxone, (2) behavioral counseling, (3) buprenorphine prescribing, and (4) referral to OUD treatment. The impact on post-overdose treatment engagement in the six months following an opioid overdose ED visit was also examined, as increasing treatment engagement is one of the goals of ED OUD care.

METHODS

Study sample, design, and data sources

This was a retrospective pre-/post-study of ED patients admitted for an opioid overdose between May 1, 2015, and March 31, 2021. Data were utilized from three EDs [an academic, tertiary care Level 1 trauma center; an academic affiliated community hospital; and a community hospital] within the state’s largest health system, which provides care for over half of patients presenting to ED visits for opioid overdose annually in Rhode Island.15 Cases were identified using the US Centers for Disease Control and Prevention (CDC) opioid overdose case definition.16 EHR data were deterministically linked to RIDOH’s Prescription Drug
Monitoring Program (PDMP) data and the Rhode Island Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals Behavioral Health On-line Database (BHOLD). PDMP data were used to identify prescriptions for FDA-approved buprenorphine medications for OUD from April 1, 2016, to January 31, 2022. BHOLD data were used to obtain engagement in treatment, including methadone, detoxification, intensive outpatient, outpatient, and residential treatment, from January 1, 2014, to January 31, 2022. ED patients who were out-of-state residents were excluded from all analyses, as they were unlikely to receive follow-up care in Rhode Island (10% of opioid overdose ED visits during the study period). This study was approved by the clinical sites’ and RIDOH Institutional Review Boards.

Key measures

Four primary outcomes of post-overdose care in the ED and one primary outcome of post-overdose OUD treatment initiation were assessed. Post-overdose ED care outcome measures included [1] provision of behavioral counseling during the ED visit, [2] administration of buprenorphine during the ED visit or provision of a prescription at discharge, [3] provision of take-home naloxone kit or prescription at discharge, and [4] provision of a referral to OUD treatment. These four types of post-overdose ED care services were the primary focus of the statewide treatment standards policy in Rhode Island. Behavioral counseling included psychiatry, social work, and/or peer recovery specialist consultations. Provision of services, prescriptions, and referrals were defined based on electronic orders placed in the EHR. All post-overdose ED care variables were defined using EHR data. Our primary outcome of subsequent OUD treatment engagement was initiation of any OUD treatment within [1] 30 days or [2] 180 days of the ED visit, among patients not engaged in OUD treatment at the time of ED admission. OUD treatment initiation was defined as any buprenorphine dispensed per the PDMP data or any new entry to an OUD treatment program (methadone, detoxification, intensive outpatient, outpatient, and residential) per the BHOLD data within the specified timeframes. Naltrexone prescriptions dispensed per the PDMP data were not included in the definition of OUD treatment engagement because prescriptions provided for OUD could not be differentiated from those for alcohol use disorder, and a review of the diagnoses associated with recent naltrexone prescriptions suggests that most are for alcohol use disorder. Patients who initiated OUD treatment during their ED visit but did not subsequently engage in OUD treatment outside of the ED did not meet our outcome definition.

Baseline measures defined at the time of ED admission included patient age, race, ethnicity, sex, health insurance type, active engagement in OUD treatment at the time of overdose, discontinuation of OUD treatment in the 30 days prior to overdose, mode of arrival to the ED, and mode of discharge from the ED. Patients were classified as actively engaged in OUD treatment at the time of overdose if PDMP records indicated that they had been dispensed a buprenorphine prescription prior to the day of overdose and still had enough days’ supply on the day of overdose, or if BHOLD records indicated that they had initiated any OUD treatment (i.e., methadone, detoxification, intensive outpatient, outpatient, or residential treatment) prior to the day of overdose and were still in care. Patients were classified as discontinuing treatment in the 30 days prior to overdose if PDMP records indicated they were dispensed a buprenorphine prescription and the days’ supply covered any of the 30 days prior to but excluding the day of the ED admission, or BHOLD records indicated that they were in treatment at some point during the 30-day period but had been discharged from OUD treatment prior to the day of the ED admission.

Statistical analyses

For this analysis, the pre-policy period was defined as May 1, 2015, through February 28, 2017, and the post-policy period as April 1, 2017, through March 31, 2021. The pre-period start date was selected based on the timing of an EHR data system change, and the post-period end date was selected based on data availability when the analysis dataset was created. Visits from March 2017 were excluded from these analyses because the policy was released that month. Analyses were conducted using SAS version 9.4 (SAS Institute, Cary, North Carolina) and significance-level alpha=0.05.

Baseline sociodemographic and clinical characteristics of patients admitted during the pre- and post-policy periods were compared using Chi-squared tests. Additionally, Chi-squared tests were used to compare the percentage of ED visits with each primary outcome by policy period (pre- vs. post-policy). Buprenorphine treatment initiation and any OUD treatment initiation were limited to visits occurring after April 30, 2016, to ensure complete data on treatment at the time of admission were available for all visits.

To describe trends in our primary outcomes over time, the monthly percentage of visits with each primary outcome was plotted. However, an interrupted time series analysis was not conducted because, although the policy was released in March 2017, the study EDs had implemented components of the policy standards between 2014 and 2017, specifically take-home naloxone and consultations with a community-based peer recovery specialists.7,18 It was known that EDs started ramping up services in anticipation of the policy roll-out.

RESULTS

Characteristics of ED visits

Between May 1, 2015, and March 31, 2021, 2,134 unique Rhode Island residents attended 2,891 ED visits for opioid overdose, excluding 254 visits from March 2017 (Table 1).
The three study hospitals were each certified as “Level 1” after release of the policy, indicating provision of comprehensive care for overdose and OUD. Most visits were for patients aged 25 to 44 years (58%) and of non-Hispanic White race/ethnicity (74%) and male sex (70%). Overall, 39% of visits were among patients with Medicaid insurance, while 37% were for among those with private insurance. Approximately 24% of visits were among patients actively engaged in OUD treatment at the time of opioid overdose, while 9% discontinued OUD treatment in the 30 days prior to overdose. Most visits (92%) were for patients transported to the ED by emergency medical services. The patient was discharged home at the conclusion of most ED visits (69%); however, 13% of visits resulted in admission to the hospital, and 9% concluded with the patient leaving against medical advice.

Patients’ health insurance type (p<0.01), active engagement in OUD treatment at the time of opioid overdose (p=0.01), and mode of discharge from the ED (p<0.01) differed pre- and post-policy. Compared to visits during the pre-policy period, those during the post-policy period were more likely to be among patients with Medicaid insurance (42% vs. 32%), actively engaged in OUD treatment at the time of opioid overdose (25% vs. 19%), and who left the ED visit against medical advice (11% vs. 6%). In contrast, compared to pre-policy, visits post-policy were less likely to result in hospital admission (11% vs. 16%).

### Primary outcomes

Overall, based on orders placed in their EHR, patients received behavioral counseling during just under half of ED visits (47%) (Table 2). Buprenorphine was administered during the ED visit, or a buprenorphine prescription was provided at discharge, for patients at 2% of ED visits. At discharge, patients at 52% of visits were either given a naloxone kit or a naloxone prescription (of whom 93% received a kit), while patients at 23% of visits were referred to OUD treatment. Among patients not engaged in OUD treatment at the time of the ED visit, 17% initiated treatment within 0–30 days, and 21% initiated treatment within 31–180 days.

After policy release, provision of buprenorphine increased (3% post vs. <1% pre, p<0.01), as did provision of a naloxone kit or prescription at discharge (58% post vs. 41% pre, p<0.01), and referral to OUD treatment (34% vs. 0%, p<0.01). Provision of behavioral counseling during the ED visit (p=0.17) and initiation of OUD treatment within 180 days of the ED visit (p=0.38) were not significantly different during the two periods. Monthly trends in

---

**Table 1. Sociodemographic and clinical characteristics among Rhode Island residents attending ED visits for opioid overdose within the state’s largest health system, overall and by time-period**

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18</td>
<td>9 (1)</td>
<td>3 (1)</td>
<td>6 (1)</td>
<td>0.09</td>
</tr>
<tr>
<td>18 –24</td>
<td>345 (12)</td>
<td>119 (12)</td>
<td>226 (12)</td>
<td></td>
</tr>
<tr>
<td>25 –34</td>
<td>989 (34)</td>
<td>332 (35)</td>
<td>657 (34)</td>
<td></td>
</tr>
<tr>
<td>35 –44</td>
<td>679 (23)</td>
<td>194 (20)</td>
<td>485 (25)</td>
<td></td>
</tr>
<tr>
<td>45 –54</td>
<td>482 (17)</td>
<td>179 (19)</td>
<td>303 (16)</td>
<td></td>
</tr>
<tr>
<td>55 –64</td>
<td>272 (9)</td>
<td>87 (9)</td>
<td>185 (10)</td>
<td></td>
</tr>
<tr>
<td>≥65</td>
<td>115 (4)</td>
<td>42 (4)</td>
<td>73 (4)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race and ethnicity</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic (any race)</td>
<td>440 (15)</td>
<td>139 (15)</td>
<td>301 (16)</td>
<td>0.25</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>230 (8)</td>
<td>78 (8)</td>
<td>152 (8)</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>2,151 (74)</td>
<td>723 (76)</td>
<td>1,428 (74)</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic other</td>
<td>70 (2)</td>
<td>16 (2)</td>
<td>54 (3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>870 (30)</td>
<td>270 (28)</td>
<td>600 (31)</td>
<td>0.13</td>
</tr>
<tr>
<td>Male</td>
<td>2,021 (70)</td>
<td>686 (72)</td>
<td>1,335 (69)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health insurance type</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicaid</td>
<td>1,124 (39)</td>
<td>309 (32)</td>
<td>815 (42)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Medicare</td>
<td>342 (12)</td>
<td>148 (15)</td>
<td>194 (10)</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>1,074 (37)</td>
<td>367 (38)</td>
<td>707 (37)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>42 (2)</td>
<td>10 (1)</td>
<td>32 (2)</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>309 (11)</td>
<td>122 (13)</td>
<td>187 (10)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In any OUD treatment at the time of overdose‡</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>557 (24)</td>
<td>78 (19)</td>
<td>479 (25)</td>
<td>0.01</td>
</tr>
<tr>
<td>No</td>
<td>1,792 (76)</td>
<td>336 (81)</td>
<td>1,456 (75)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discontinued OUD treatment in the 30 days before overdose§</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>204 (9)</td>
<td>28 (7)</td>
<td>176 (9)</td>
<td>0.30</td>
</tr>
<tr>
<td>No</td>
<td>2,107 (91)</td>
<td>348 (93)</td>
<td>1,759 (91)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode of arrival to ED</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency medical services</td>
<td>2,650 (92)</td>
<td>872 (91)</td>
<td>1,778 (92)</td>
<td>0.82</td>
</tr>
<tr>
<td>Walk-in</td>
<td>219 (8)</td>
<td>76 (8)</td>
<td>143 (7)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>22 (1)</td>
<td>8 (1)</td>
<td>14 (1)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode of discharge from ED</th>
<th>Overall n=2,891</th>
<th>Pre-policy n=956</th>
<th>Post-policy n=1,935</th>
<th>P-value†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted to hospital</td>
<td>369 (13)</td>
<td>154 (16)</td>
<td>215 (11)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Discharged home</td>
<td>1,992 (69)</td>
<td>655 (69)</td>
<td>1,337 (69)</td>
<td></td>
</tr>
<tr>
<td>Left against medical advice</td>
<td>270 (9)</td>
<td>56 (6)</td>
<td>214 (11)</td>
<td></td>
</tr>
<tr>
<td>Left without being seen</td>
<td>91 (3)</td>
<td>27 (3)</td>
<td>64 (3)</td>
<td></td>
</tr>
<tr>
<td>Transferred to another facility</td>
<td>53 (2)</td>
<td>14 (1)</td>
<td>39 (2)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>116 (4)</td>
<td>50 (5)</td>
<td>66 (3)</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: ED, emergency department; OUD, opioid use disorder.


† Chi-squared test.

‡ Limited to people who were admitted after April 30, 2016.

§ Limited to people who were admitted after May 31, 2016.
the percentage of ED visits with each primary outcome are provided in **Figure 1**.

Overall, among 1,356 ED visits where any type of behavioral counseling was provided, 352 patients (26%) received a psychiatry consultation, 628 (46%) received a social work consultation, and 851 (63%) received a peer support consultation. The percentage of patients with psychiatry \( p=0.66 \) and peer support \( p=0.63 \) consultations during the ED visit were similar pre- and post-policy release. However, visits post-policy were more likely to involve a social work consultation \( 30\% \text{ vs. } 6\% \text{ pre, } p<0.01 \).

Among 686 visits for patients who were not engaged in OUD treatment at the time of their ED visit and subsequently initiated treatment within 180 days, 378 initiated buprenorphine \( 55\% \), 306 initiated methadone \( 45\% \), 138 initiated detoxification \( 20\% \), 47 initiated intensive outpatient \( 7\% \), 66 initiated outpatient \( 10\% \), and 146 initiated residential \( 21\% \) treatment. The type(s) of treatment initiated were similar during the pre- and post-policy periods \( p>0.05 \) for each type), except for detoxification which decreased from \( 28\% \) to \( 18\% \) \( p=0.02 \).

**DISCUSSION**

In this retrospective pre-/post-study of the impact of a statewide post-overdose treatment standards policy on post-overdose care in the ED, release of the policy was associated with increased initiation of buprenorphine in or from the ED (from \(<1\% \text{ to } 3\% \)) and increased provision of referrals to OUD treatment at discharge (from \(0\% \text{ to } 34\% \)) and take-home naloxone kits or prescriptions at discharge (from \(41\% \text{ to } 58\% \)). During both policy periods, approximately half of all ED visits for opioid overdose received a behavioral intervention; however, the percentage of patients receiving a social work consultation increased post-policy. The large increase in treatment referrals at discharge is likely attributable to the introduction of order sets that was purposefully introduced with the policy rollout in order to help implement the changes. While orders for treatment referral increased, the percentage of patients who subsequently engaged in OUD treatment within 30 or 180 days following the ED visit was similar during the pre- and post-policy periods \( p=0.38 \) and take-home naloxone kits or prescriptions at discharge (from \(41\% \text{ to } 58\% \)). During both policy periods, approximately half of all ED visits for opioid overdose received a behavioral intervention; however, the percentage of patients receiving a social work consultation increased post-policy. The large increase in treatment referrals at discharge is likely attributable to the introduction of order sets that was purposefully introduced with the policy rollout in order to help implement the changes. While orders for treatment referral increased, the percentage of patients who subsequently engaged in OUD treatment within 30 or 180 days following the ED visit was similar during the pre- and post-policy periods (about \(15\% \text{ to } 18\% \)), suggesting that an electronic referral alone is insufficient to improve engagement.

Although release of the policy was associated with increased provision of some post-overdose ED services, the policy was not associated with increased treatment engagement in the 30 or 180 days following the ED visit. Future studies to evaluate whether specific post-overdose ED services are
associated with subsequent engagement in OUD treatment would be useful. A prior study of the general population suggested that treatment initiation with pharmacotherapy (alone or in combination with psychosocial therapy) was associated with continued treatment engagement and that patients with painful health conditions may require additional supports to initiate and sustain treatment.\(^{19}\) Additionally, in a safety-net primary care setting, patients reporting unstable housing and recent criminal justice involvement had lower odds of initiating behavioral treatment for substance use,\(^{20}\) suggesting that incorporation of or linkage to social services and supports may be critical for enhancing treatment initiation.

Of note, after release of the policy, the percentage of ED visits at which patients received some key post-overdose services remained relatively low, suggesting the need for enhanced implementation to increase delivery and uptake. Patients post-policy received treatment referrals, take-home naloxone, and behavioral counseling at 24%, 58%, and 48% of ED visits, respectively, and only 3% of patients were provided buprenorphine in or from the ED. This low provision is likely due to a combination of factors, including regulatory barriers to prescribing buprenorphine during the study period (i.e., X-waiver). Other contributing factors to low uptake not assessed in this study may include adequacy and quality of staff training, provider perceptions and comfort prescribing buprenorphine, stigma, and patients’ perceptions and readiness to initiate treatment.\(^{21-23}\) Additionally, some services may not be indicated for all patients. For example, not all patients who experience an opioid overdose have OUD, and the percentage without OUD may be increasing as fentanyl is increasingly present in the illicit stimulant drug supply\(^{24}\) and may lead to overdoses among people not intending to use opioids. Some other patients for whom services are indicated may prefer not to receive them. Nonetheless, these findings highlight potential opportunities for improving utilization of some services. For example, additional policy requirements focused on clinician training and support engaging patients with OUD and prescribing buprenorphine or additional prompts within the EHR\(^{25}\) may help ensure that all eligible patients are offered key services. Additionally, inclusion of low-barrier patient navigation services may provide additional support to eligible patients and contribute to their receptiveness to some services. Finally, just over 1-in-10 patients in the post-policy period left the ED against medical advice; though the reasons for this are uncertain, the finding highlights an important missed opportunity for engagement in key services. Additional research is needed to determine how to best support these patients.

Our analysis had important limitations. As noted previously, the roll out of some post-overdose services within EDs occurred prior to and in anticipation of the release of the policy.\(^{14}\) Had roll-out of services exclusively happened after the policy, we theorize that larger differences in pre-/post-services would have been observed. However, guidelines and policies can also play an important role in not just jumpstarting, but sustaining clinical practice and ED services over time.\(^{26}\) Additionally, our primary ED outcomes were defined based on orders placed in the EHR. Although provision of services generally aligns with placement of orders, it is a proxy outcome and does not assess actual receipt of services or quality of services delivered; thus, our estimates are optimistic. This study does also not address which factors influenced the observed changes in ED services (e.g., provider education, use of order sets); therefore, further work is needed to understand not only the barriers to service provision but the facilitators. Lastly, the relationship between time and our primary endpoints could have been confounded by other time-variant factors such as quality initiatives, media attention, and ongoing research studies. In the absence of a temporal control group, it is uncertain whether observed differences are attributable to the policy or may have been driven by other factors. However, our study was strengthened by the robust statewide surveillance systems and improved upon prior evaluations of the policy that have relied upon potentially biased hospital self-reporting systems.

In conclusion, our study suggests that statewide treatment standards for post-overdose care in EDs had a positive impact on provision of key post-overdose services within the ED in Rhode Island, including referral to treatment for OUD, provision of naloxone, initiation of buprenorphine treatment for OUD, and facilitation of social work consultations. However, the policy did not appear to impact subsequent OUD treatment initiation among patients who were not engaged in treatment at the time of the overdose. Similar statewide post-overdose treatment standards policies may improve receipt of key evidence-based overdose prevention interventions in EDs in other states, although additional research is needed to understand the impact of the policy on subsequent recurrent opioid overdose. Additional implementation strategies within EDs and/or the broader community are needed to improve engagement in treatment for OUD in the 180 days following opioid overdose.

References


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Disclosures
All authors declare that they have no conflicts of interest. The views expressed herein are those of the authors and do not necessarily reflect the views of Brown University, the Rhode Island Department of Health or the Rhode Island Department of Behavioral Healthcare, Developmental Disabilities, and Hospitals.

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To the Editors:
There is a dearth of recent reviews on basketball-associated eye injuries. We systematically reviewed the literature to describe the current state of basketball-related eye injuries. After consulting with a health sciences librarian, we utilized the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines and developed a search strategy.

We included peer-reviewed studies published in English on individuals who incurred eye injuries while playing basketball. We included studies that specifically focused on the types and mechanisms, if available, of basketball-related eye injuries. We excluded studies not focused specifically on basketball-related eye injuries, including those that investigated either the epidemiology of sport-related eye injuries or sport-related eye injuries at a single center.

References were exported into Covidence (Covidence systematic review software, Veritas Health Innovation, Melbourne, Australia) for screenings by two reviewers (EK and AG). Disagreements were adjudicated by a third reviewer (PG). We evaluated the certainty of evidence of the studies using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) guidelines.

The PRISMA screening process is depicted in Figure 1. Four studies were eligible for qualitative synthesis. The general characteristics of the studies are outlined in Table 1: study periods ranged from 1995–2022; three studies were conducted in the US and one in Taiwan; two were prospective studies and two were retrospective case series; two focused on professional basketball players, one on collegiate players, and one on amateur players; three focused on general eye injuries and one on retinal detachments; three had “very low” GRADE ratings and one had a “low” GRADE rating.

Data regarding types of eye injuries, their mechanisms, and eye protection are detailed in Table 2. Common eye injuries among professional players were corneal abrasions and eyelid abrasions/lacerations. A common mechanism of injury among professional and collegiate basketball players was contact with another player, including rebounding and playing offense. Another study observed 13 retinal detachments at a single center between 2003 and 2015, most of which (9/13, 69.2%) were precipitated by a basketball striking the player in the eye. The two studies that reported data on eye protection found that most players were not wearing protection prior to injury.

In this review, the studies of basketball-related eye injuries were primarily conducted on collegiate and professional basketball players. Common eye injuries were eyelid abrasions and lacerations and corneal abrasions; the most common mechanism of injury was physical contact with another player. Most basketball players with eye injuries were not wearing eye protection. The studies had a GRADE rating of either “very low” or “low.”

A limitation of this systematic review was its being restricted to the peer-reviewed literature published in English. The current literature base could be strengthened by better quality studies on the epidemiology of basketball-
Table 1. Characteristics of studies on basketball eye injuries

<table>
<thead>
<tr>
<th>Study (year)</th>
<th>n</th>
<th>Country</th>
<th>Study Design</th>
<th>Study Population</th>
<th>GRADE Rating*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wisely et al. (2020)</td>
<td>8</td>
<td>United States (US)</td>
<td>Retrospective case series</td>
<td>All eye injuries in Duke University Men's Basketball Team 2004–2019</td>
<td>Very Low</td>
</tr>
<tr>
<td>Go et al. (2019)</td>
<td>14</td>
<td>US</td>
<td>Prospective study</td>
<td>All eye injuries in professional players in National Basketball Association (NBA) 2018–2019</td>
<td>Very Low</td>
</tr>
<tr>
<td>Lee et al. (2017)</td>
<td>13</td>
<td>Taiwan</td>
<td>Retrospective case series</td>
<td>All retinal detachments in amateur players (children and adults) presenting to one hospital 2003–2015</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

*GRADE – Grading of Recommendations Assessment, Development, and Evaluation

Table 2. Types and mechanisms of basketball eye injuries

<table>
<thead>
<tr>
<th>Study (year)</th>
<th>n</th>
<th>Types of Eye Injuries</th>
<th>Mechanism of Injury</th>
<th>Circumstances Surrounding Injury</th>
<th>Eye Protection Prior to Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee et al. (2017)</td>
<td>13</td>
<td>Retinal detachments only: Single retinal break (9/13) Multiple retinal breaks (2/13) Giant retinal tear (1/13) Retinal dialysis (1/13)</td>
<td>Basketball (9/13) Contact with another player (4/13)</td>
<td>Not Reported</td>
<td>No eye protection (13/13)</td>
</tr>
</tbody>
</table>

*The total number of types of injuries does not match “n” as a basketball player may have had more than one eye injury.

**The total number under “circumstances surrounding injury” (n = 17) does not match the total number of eye injuries (n = 14) observed under the “types of injury” column; data listed under “circumstances surrounding injury” encompassed all circumstances that led to an eye examination; and data listed under “types of injury” only included eye injuries that had a clear diagnosis upon eye examination.

related eye injuries, especially in recreational players, and [2] more studies on the prevalence of eye protection and how to better promote the use of eye protection among all basketball players. The American Academy of Ophthalmology recommends basketball players of all ages wear eye protection that meets the standards of the American Society of Testing and Materials (ASTM), but currently there are no requirements for eye protection for basketball players at any level in the US. After the National Federation of State High School Associations mandated eye protection for all field hockey players, there was 67% reduced incidence of orbital injuries among players. This change in policy could serve as a model for organized basketball.
References


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Risk of Spontaneous Obstetric Anal Sphincter Injury Following Non-Operative Vaginal Delivery in a High-Risk Cohort

BROCK E. POLNASZEK, MD; VALERY A. DANILACK, MPH, PhD; PHINNARA HAS, MS; MELISSA RUSSO, MD; MAUREEN HAMEL, MD; METHODIUS G. TUULI, MD, MBA; DAVID A. SAVITZ, PhD; ADAM K. LEWKOWITZ, MD, MPH

KEYWORDS: obstetric anal sphincter injuries, pregnancy, morbidity

INTRODUCTION

Obstetric anal sphincter injuries (OASIS) are associated with significant maternal morbidity and long-term sequelae. Short-term morbidity includes increased pain, edema, bruising, and emotional distress that may result in wound breakdown, poor healing, infection, and/or abscess formation. Long-term morbidity may include dyspareunia, altered sexual function, fistula formation, and/or anal incontinence requiring extensive rehabilitation and/or surgical repair. Due to these long-term sequelae, several studies have examined risk factors associated with OASIS. Obstetric procedures such as operative vaginal delivery with forceps/vacuum or episiotomy have been well established risk factors for OASIS. Yet few studies have examined risk factors for a spontaneous OASIS following a non-operative delivery. We aimed to identify risk factors for spontaneous obstetric anal sphincter injury among pregnant women following a non-operative delivery in a high-risk pregnancy cohort.

METHODS

This is a nested case-control study within a large, NIH-funded retrospective cohort of pregnant women (11,916) with diabetes, hypertensive disorders, and/or fetal growth restriction affecting singleton pregnancies at a tertiary-care hospital from January 2002 to March 2013. The original restriction affecting singleton pregnancies at a tertiary-care hospital was an observational study of a large population of pregnant women (11,916) funded retrospective cohort of pregnant women (11,916) with diabetes, hypertensive disorders, and/or fetal growth restriction affecting singleton pregnancies at a tertiary-care hospital from January 2002 to March 2013. The original study was an observational study of a large population of high-risk pregnancies eligible for early delivery intervention using a design and data analysis approach that effectively simulates a series of week-by-week intervention trials. Pregnancies with fetal growth restriction, pre-labor or intrapartum cesarean delivery, episiotomy, and operative vaginal delivery with forceps or vacuum were excluded for this analysis, leaving 4,844 pregnant women. Women with spontaneous OASIS were compared to those without spontaneous OASIS. Spontaneous OASIS was defined as a perineal laceration involving the anal sphincter complex in accordance with the American College of Obstetricians and Gynecologists. Data were collected by trained research nurses. Potential risk factors for spontaneous OASIS were derived from existing literature and include factors such as age, body mass index, hypertension, diabetes, and tobacco use. National area deprivation index, a surrogate marker of neighborhood deprivation at the census-track level were collected from the neighborhood web atlas based on home address at delivery. National area deprivation percentiles range from 1 to 100, with higher percentiles indicative of worse neighborhood deprivation. Driving distance to delivery hospital were calculated using GSS Software by address at time of delivery. Baseline clinical characteristics were compared between groups using the X² or Fisher’s exact test for categorical variables and Mann-Whitney U test or student’s t-test for continuous variables, as appropriate. Unadjusted odds ratios or mean differences were calculated using multivariable logistic regression and mean difference with linear regression. Models were not adjusted due to the rarity of spontaneous OASIS and risk of overfitting analytic models. All analyses were performed using SAS software, Version 9.4 for Windows [Cary, North Carolina]. IRB approval was obtained prior to study analysis.

RESULTS

Of the 4,733 deliveries, 111 (2.3%) experienced spontaneous OASIS with the majority occurring in nulliparous women. Among the 111 women with spontaneous OASIS, pre-pregnancy obesity was less associated (28.1% versus 48.2%, OR [95% CI] 0.42 [0.26, 0.68]) while pregestational diabetes (6.1% versus 1.9%, OR [95% CI] 3.29 [1.27, 8.57]) and macrosomia (4.9% versus 1.7%, OR [95% CI] 2.97 [1.03, 8.55]) was associated with spontaneous OASIS [Table 1]. Women who experience spontaneous OASIS were also less likely to come from a neighborhood-deprived area (42.8 versus 47.5, MD 9.4 for Windows [Cary, North Carolina]. IRB approval was obtained prior to study analysis.

DISCUSSION

Our findings are consistent with prior OASIS literature and overall rates of spontaneous OASIS are low. Importantly, our data highlight potentially modifiable risk factors such as prediabetes and macrosomia. These data are particularly relevant when considering early diabetic screening in routine prenatal care and contemporary prediabetes management aimed at reducing maternal/neonatal morbidity. A strength of our study is the elimination of the predominant risk factors for spontaneous OASIS (i.e., episiotomy and operative vaginal delivery with forceps or vacuum) and selection of a...
high-risk patient population. A weakness to our study is the rarity of our primary outcome, sample size that is underpowered for our primary outcome, and older time frame of our cohort.

CONCLUSION

The overall rate of spontaneous OASIS following a non-operative vaginal delivery are low in high-risk pregnancies. Risk factors for spontaneous obstetric anal sphincter injuries were identified. Future studies should focus on pregestational diabetes as this may be modifiable factor which could mitigate the maternal morbidity and long-term sequelae associated with spontaneous OASIS with contemporary prediabetes pregnancy management.

References


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Table 1. Risk factors for spontaneous obstetric anal sphincter injury (sOASIS)

<table>
<thead>
<tr>
<th>Clinical characteristics</th>
<th>sOASIS (N=111)</th>
<th>No sOASIS (N=4,733)</th>
<th>OR or MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age</td>
<td>27.8 [5.6]</td>
<td>27.2 [6.4]</td>
<td>0.54 [-0.86, 1.94]</td>
</tr>
<tr>
<td>National area deprivation index</td>
<td>42.8 [17.8]</td>
<td>47.5 [17.9]</td>
<td>-4.62 [-8.01, -1.23]</td>
</tr>
<tr>
<td>Driving distance to delivery hospital, miles</td>
<td>23.7 [133.3]</td>
<td>13.1 [61.6]</td>
<td>10.63 [-1.45, 22.72]</td>
</tr>
<tr>
<td>Medical Comorbidities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI ≥ 30kg/m²</td>
<td>23 (28.1)</td>
<td>1,023 (48.2)</td>
<td>0.42 (0.26, 0.68)</td>
</tr>
<tr>
<td>Tobacco use</td>
<td>5 (6.1)</td>
<td>260 (12.3)</td>
<td>0.50 (0.21, 1.17)</td>
</tr>
<tr>
<td>Chronic hypertension</td>
<td>4 (4.9)</td>
<td>287 (8.8)</td>
<td>0.53 (0.19, 1.47)</td>
</tr>
<tr>
<td>Pregestational diabetes</td>
<td>5 (6.1)</td>
<td>41 (1.9)</td>
<td>3.29 (1.27, 8.57)</td>
</tr>
<tr>
<td>Gestational diabetes</td>
<td>27 (32.9)</td>
<td>840 (39.6)</td>
<td>0.75 (0.47, 1.20)</td>
</tr>
<tr>
<td>Macrosomia</td>
<td>4 (4.9)</td>
<td>N=2,122 (17.1)</td>
<td>2.97 (1.03, 8.55)</td>
</tr>
<tr>
<td>Chorioamnionitis</td>
<td>N=25</td>
<td>N=743 (13.2)</td>
<td>0.57 (0.13, 2.44)</td>
</tr>
<tr>
<td>Type of labor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Induced</td>
<td>48 (58.5)</td>
<td>1,166 (54.9)</td>
<td>1.16 (0.74, 1.81)</td>
</tr>
<tr>
<td>Spontaneous</td>
<td>16 (19.5)</td>
<td>461 (21.7)</td>
<td>0.87 (0.50, 1.52)</td>
</tr>
<tr>
<td>Gestational age at delivery</td>
<td>39.2 (1.4)</td>
<td>38.9 (1.6)</td>
<td>0.31 (-0.031, 0.65)</td>
</tr>
</tbody>
</table>

Data are number N (%) unless otherwise noted as mean (SD); OR = odds ratio (95% CI), MD = mean difference (95% CI)
HELP YOUR PATIENTS PREVENT DIABETES AND CARDIOVASCULAR DISEASE

Looking for a resource to help patients reduce their risk for diabetes?

The *Ready for Health* program, formerly known as the National Diabetes Prevention Program, is an evidence-based intervention for the prevention of diabetes that can lower the risk for disease. Your referral to this program through the Community Health Network can help patients feel confident in their ability to make lifestyle changes.

The *Ready for Health* program is for anyone who is at risk for diabetes or cardiovascular disease and who might benefit from learning how to live a healthier lifestyle, reducing their risk of diabetes and cardiovascular disease. Help your patients lower their diabetes risk. Make a referral through the Community Health Network today.

For more information on how you can participate, please contact Danai Boone at 401-222-5609 or danai.boone@health.ri.gov. Or, contact the Community Health Network at communityhealthnetwork@ripin.org.
Polysubstance Use Among Rhode Island Adults

TRACY L. JACKSON, MPH, PhD; KARINE MONTEIRO, MPH; KATHRYN WELTER-SAVIO, MPH; JULIA DOHERTY, MPH, MSW

INTRODUCTION
Polysubstance use is the use of more than one substance or drug within a short period of time. This type of drug use can have a synergistic effect and has been associated with numerous poor health outcomes, including increased risk of substance use disorders, resistance to treatment, cancer, cognitive decline, drug overdose, and death. While there is data on polysubstance use nationally, there is less information about polysubstance use in Rhode Island (RI). This report examines the prevalence of and factors associated with polysubstance use among RI adults.

METHODS
Data are from the 2021 Rhode Island Behavioral Risk Factor Surveillance System (RI BRFSS). The BRFSS is a telephone survey of non-institutionalized adults ≥18 years that is administered by the Rhode Island Department of Health (RIDOH) with support from the Centers for Disease Control and Prevention (CDC) and is used to measure risk behaviors and health. Data from the survey sample are weighted to obtain statewide population estimates.

Polysubstance use was defined as those who reported two or more of the following: excessive alcohol use, marijuana use, electronic vapor product (e-vape) use, or cigarette smoking over the past 30 days. Excessive alcohol use was defined as binge drinking (≥4 drinks for women and ≥5 drinks for men on a single occasion) or heavy drinking (consuming ≥8 drinks per week for women and ≥15 drinks per week for men) in the last 30 days. E-vape and cigarette use were defined as use on at least “some days” in the past 30 days. Prescription opioid misuse was not included in this study because prevalence was low (~1%) and use was not assessed over the same 30-day period. Information on other drug use was not collected.

A three-level measure of substance use was computed, and individuals were categorized as those who used 0 substances, 1 substance only, or 2 or more substances (polysubstance use). The three-level substance use measure was examined by selected demographic characteristics. Multivariable logistic regression models were conducted to examine the association between the three-level substance use measure and health, adjusting for sex, sexual orientation/gender identity (SOGI), age group, race/ethnicity, and educational attainment. Health measures of interest included fair/poor overall health (measured from the question: “Would you say your general health is – Excellent, Very Good, Good, Fair, or Poor”), frequent mental distress (≥14 days in the past 30 where mental health was not good), depression diagnosis, chronic disease diagnosis (asthma, arthritis, chronic obstructive pulmonary disease, cancer, cardiovascular disease, diabetes, or kidney disease), and obesity (Body Mass Index ≥30, calculated from reported height and weight).

RESULTS
Overall, 5,639 individuals completed the BRFSS in 2021, representing a weighted population of 889,340 adults. Among the types of substance use assessed, excessive alcohol use (19.5%) was most common, followed by marijuana use (15.8%), cigarette use (12.4%), and e-vape use (6.2%).

The prevalence of polysubstance use was 13.7%. About two-thirds of adults did not use any of the substances assessed (66.8%), while 19.5% used one substance, 10.4% used two substances, 2.8% used three substances, and 0.5% used all four. Among polysubstance users, the most common substance used was marijuana (77.0%) and the most common type of combined use was marijuana and excessive alcohol use (46.0%) [Figure 1].

*Note: categories are not mutually exclusive – those using 3 or more substances are included in multiple categories.
Levels of substance use differed by all demographic measures assessed (Table 1). For example, polysubstance use was more common among males [16.9%] than females [10.8%], and more common among younger [18–24 years, 26.0%] and older adults [65+ years, 26.0%] than middle-aged adults [45–64 years, 3.6%]. Those who identify as straight/cisgender were more likely to report using no substances (67.1%) than those who identify as lesbian, gay, bisexual, transgender, or other SOGI [LGBTQ, 54.2%].

Results from multivariable logistic regression models examining the association between substance use level and health revealed that polysubstance users were significantly more likely than those who use no substances to report fair or poor overall health [Adjusted Odds Ratio [AOR]=1.86; 95% Confidence Interval [CI]=1.26-2.76] and having been diagnosed with a chronic disease [AOR=1.45; 95% CI=1.05-2.00] Both those who used one substance and polysubstance users were significantly more likely than those who used no substances to report frequent mental distress and having been diagnosed with depression (Table 2).

Table 1. Substance use, by selected demographic characteristics

<table>
<thead>
<tr>
<th></th>
<th>No Substance Use</th>
<th>One Substance Use</th>
<th>Polysubstance Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=543,101 (66.8%)</td>
<td>N=155,675 (19.8%)</td>
<td>N=109,526 (13.7%)</td>
</tr>
<tr>
<td>Sex*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>61.7%</td>
<td>21.4%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Female</td>
<td>71.5%</td>
<td>17.8%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Sexual Orientation/ Gender Identity*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LGBTQ†</td>
<td>54.2%</td>
<td>24.8%</td>
<td>21.1%</td>
</tr>
<tr>
<td>Straight and Cisgender</td>
<td>67.1%</td>
<td>19.7%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Age Group*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–24 years</td>
<td>56.9%</td>
<td>17.1%</td>
<td>26.0%</td>
</tr>
<tr>
<td>25–34 years</td>
<td>56.8%</td>
<td>23.4%</td>
<td>19.6%</td>
</tr>
<tr>
<td>35–44 years</td>
<td>68.1%</td>
<td>22.4%</td>
<td>9.6%</td>
</tr>
<tr>
<td>45–64 years</td>
<td>82.1%</td>
<td>14.4%</td>
<td>3.6%</td>
</tr>
<tr>
<td>≥65 years</td>
<td>56.9%</td>
<td>17.1%</td>
<td>26.0%</td>
</tr>
<tr>
<td>Race/Ethnicity*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, Non-Hispanic</td>
<td>64.5%</td>
<td>21.2%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>74.2%</td>
<td>15.8%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Other, Non-Hispanic</td>
<td>74.1%</td>
<td>13.1%</td>
<td>12.8%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>71.2%</td>
<td>16.3%</td>
<td>12.4%</td>
</tr>
<tr>
<td>Household Income*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $25,000</td>
<td>69.2%</td>
<td>15.4%</td>
<td>15.4%</td>
</tr>
<tr>
<td>$25,000–49,999</td>
<td>62.4%</td>
<td>20.7%</td>
<td>16.9%</td>
</tr>
<tr>
<td>$50,000–74,000</td>
<td>63.9%</td>
<td>20.8%</td>
<td>15.3%</td>
</tr>
<tr>
<td>≥$75,000</td>
<td>64.0%</td>
<td>23.7%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Education Level*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>68.7%</td>
<td>14.4%</td>
<td>16.9%</td>
</tr>
<tr>
<td>High School</td>
<td>63.2%</td>
<td>20.0%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Some College</td>
<td>64.2%</td>
<td>20.0%</td>
<td>15.8%</td>
</tr>
<tr>
<td>College Graduate</td>
<td>71.5%</td>
<td>20.6%</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

Notes: †Lesbian, Gay, Bisexual, Transgender, Queer, or Other. *Chi square test p<0.05

Table 2. Adjusted odds of selected health outcomes by substance use*

<table>
<thead>
<tr>
<th></th>
<th>One-Substance Use</th>
<th>Polysubstance Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AOR* 95% CI</td>
<td>AOR* 95% CI</td>
</tr>
<tr>
<td>Fair/Poor Overall Health</td>
<td>1.20 0.89–1.62</td>
<td>1.86 1.26–2.76</td>
</tr>
<tr>
<td>Frequent Mental Distress</td>
<td>1.67 1.25–2.23</td>
<td>2.69 1.88–3.87</td>
</tr>
<tr>
<td>Diagnosed with depression</td>
<td>1.47 1.17–1.84</td>
<td>1.92 1.42–2.59</td>
</tr>
<tr>
<td>Chronic Disease</td>
<td>1.19 0.96–1.48</td>
<td>1.45 1.05–2.00</td>
</tr>
<tr>
<td>Obesity</td>
<td>1.03 0.83–1.29</td>
<td>0.80 0.58–1.11</td>
</tr>
</tbody>
</table>

Notes: (a) Results display odds of health outcomes among one-substance users and polysubstance users compared to those who use no substances. All health outcomes were assessed in separate logistic regression models adjusting for sex, sexual orientation/gender identity, race/ethnicity, and education level. (b) AOR = Adjusted Odds Ratio. Bold font indicates statistically significant difference p<0.05.

DISCUSSION

Data from the RI BRFSS indicated that approximately 1 in 7 (14%) RI adults reported polysubstance use in 2021. Compared to those who reported no substance use or use of one substance, polysubstance users reported a higher prevalence of several health problems.

This study has several limitations. First, data are based on self-report which can be prone to bias. Second, because survey data are cross-sectional, we are unable to ascertain the direction of the relationship between substance use and health. Third, we were only able to assess use of alcohol, cigarettes, e-cigarettes, and marijuana – the exclusion of other drugs likely resulted in an underestimate of polysubstance use. Additionally, the inclusion of other drugs may have resulted in different associations with demographic factors and health. Opioid misuse is of particular concern in RI and nationwide and thus future studies should focus on polysubstance among opioid users.

Results of prior research indicate that polysubstance use addiction can be more difficult to treat than addiction to one substance alone. This, along with the poor health outcomes associated with polysubstance use, concerns that substance use may be on the rise in wake of the COVID-19 pandemic, and the legalization of marijuana, heightens the need to focus on this high-risk group.

Treatment of polysubstance use can be complex and care coordination is essential as changes in substance-use patterns, such as smoking cessation, may impact patients’ psychiatric medication for co-occurring mental health
disorders. The Substance Abuse and Mental Health Services Administration (SAMHSA) published a report summarizing the current evidence-based research. SAMHSA outlined several key components for clinicians to consider optimizing treatment outcomes:

**Engagement and Retention of Clients in Services**

Polysubstance users have low rates of treatment completion, and it can be difficult to keep them engaged. Strategies to optimize engagement include strengthening the relationship between clinician and patient (e.g., building rapport and respecting client’s goals), identifying barriers to treatment and providing applicable resources (e.g., helping with insurance paperwork, transportation services), and using motivational interviewing to increase self-efficacy.

**Assessment of Risk and Protective Factors**

Polysubstance users often have more severe risk factors than single-substance users. It is recommended that clinicians assess client’s risk and protective factors that may influence substance use and provide resources when applicable, including gauging socioeconomic factors, examining the role of family members and past trauma, and connecting clients with resources to improve quality of life (e.g., housing authorities, job training programs).

**Motivation and Readiness to Change**

Some patients may be unwilling to change and/or may feel helpless if prior treatments have failed. Strategies to address this include tailoring interventions based on individual’s readiness and willingness to change and history (e.g., focusing on harm reduction if immediate treatment is not feasible, identifying what has not worked in prior treatment).

**Selection of Treatment Practice**

Many factors influence the type of treatment that may be optimal. Factors to consider when choosing the optimal treatment include patient’s psychological and pharmacological reasons for combining certain substances, severity of use benefits of combining treatments (e.g., counseling and pharmacological), and patient characteristics and preferences.

**Prevention and Recovery Support**

Relapse is common among polysubstance users. Providers should ensure clients have the tools (e.g., understanding triggers and how to cope) and recovery supports (recovery groups, support systems) they need during and after treatment.

Polysubstance use is a health issue of concern worldwide. Healthcare providers should continue comprehensive screening of all patients and researchers should continue to evaluate optimal treatment for this high-risk group. Data from the 2019 BRFSS suggested that cigarette smokers who are also heavy drinkers may be less likely than those who are not heavy drinkers to receive smoking cessation advice from health-care providers, highlighting not just disparities in risk, but also disparities in care. Providers should integrate cessation interventions into routine substance use disorder care and ensure that all patients are screened for tobacco use, advised to quit, and offered cessation treatment such as a referral to the state Quitline. Quit-Works-RI provides free evidence-based tobacco treatment to Rhode Islanders. Helping patients quit tobacco helps to improve their chances for sustained recovery from other drugs. In response to polysubstance use, Quit-Works-RI has a specialty program for anyone who self-reports mental health diagnoses or a dual-substance use disorder. Secondly, Quit-Works-RI provides free accredited CME modules on best practices for tobacco treatment, which includes a module on “Tobacco Cessation for Behavioral Health Populations” and “Screening and Responding to Vaping” to help address priority populations. Smoking-cessation therapies provided during other substance use disorder treatment were associated with a 25% increased likelihood of long-term abstinence from alcohol and illicit drugs. Treatment of polysubstance use may be complex but it can be effective.

**References**

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Disclosure of Financial Interests
The authors have no financial interests to disclose.

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Rhode Island Monthly Vital Statistics Report
Provisional Occurrence Data from the Division of Vital Records

<table>
<thead>
<tr>
<th>VITAL EVENTS</th>
<th>JULY 2022</th>
<th>12 MONTHS ENDING WITH JULY 2022</th>
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<tr>
<td>Deaths</td>
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<tr>
<td>Marriages</td>
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<td>Divorces</td>
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* Rates per 1,000 estimated population
# Rates per 1,000 live births

<table>
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<th>Underlying Cause of Death Category</th>
<th>JANUARY 2022</th>
<th>12 MONTHS ENDING WITH JANUARY 2022</th>
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<tr>
<td></td>
<td>Number (a)</td>
<td>Number (a)</td>
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<tr>
<td>Diseases of the Heart</td>
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</tr>
<tr>
<td>Malignant Neoplasms</td>
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<td>2,207</td>
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<tr>
<td>Cerebrovascular Disease</td>
<td>43</td>
<td>477</td>
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<tr>
<td>Injuries (Accident/Suicide/Homicide)</td>
<td>89</td>
<td>1,085</td>
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<tr>
<td>COPD</td>
<td>46</td>
<td>421</td>
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</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 1,097,379 for 2020 (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.
Adventures

Aetna® is proud to support the Rhode Island Medical Journal.
Overheard at the supermarket checkout...“I’ve had this cold for a week now and am going on vacation so I need to get an antibiotic...”

In fact, “I need an antibiotic” is a frequent complaint from patients in the outpatient setting, especially in the midst of the winter cold season and with the increased rates of COVID-19, influenza and RSV infections this year.

Getting at the Why behind “I need an antibiotic” can be both interesting and challenging. For many it’s the very real concern that they have strep throat or pneumonia and those are easier to address. For others it’s less tangible: “I’ve got green phlegm,” or “I had the same symptoms last year and got an antibiotic and was better in a few days.” Still others claim “low immunity” or “…I know my body better...” One 45-year-old male I saw wanted both an antibiotic and an antiviral to cover both alternatives prior to leaving the next day for a golf trip to The Islands.

Most of these arguments are justifications for the Why, not really a discussion about whether an antibiotic is indicated or not. Not surprisingly, 80–90% of antibiotics are prescribed in the outpatient setting, predominately by PCPs, PAs, and NPs. The most commonly prescribed are azithromycin and amoxicillin.¹ According to the CDC, almost 30% of outpatient antibiotics are unnecessary, and 50% are either unnecessary or prescribed inappropriately. Overprescribing of antibiotics is most common in adults with respiratory tract infections.²,³

Our overreliance on and overconfidence in antibiotic therapy seems surprising to me. So many patients are reluctant to accept long-term treatment for such chronic conditions as hypertension, hyperlipidemia and diabetes, many stating, “I don’t like to take pills.” Yet antibiotics are viewed as a panacea, a quick fix for patients who are perhaps too busy and don’t have the time to be sick. Indeed, antibiotics have a proven track record which can be lifesaving for certain bacterial infections and their sequelae. And, antibiotics are viewed as “safe” despite broader health concerns surrounding antibiotic resistance and the more individual risks of C. diff, GU fungal infections, GI, dermatologic, and other rarer but more serious adverse effects. But those risk and concerns are of little interest to the patient who wants an antibiotic.

CDC guidelines

Current CDC guidelines for Adult Outpatient Treatment Recommendations⁴ include the more frequent conditions, the majority of which do not require antibiotic therapy:
- acute rhinosinusitis – 98% are viral
- acute uncomplicated bronchitis
- the common cold or non-specific URI – at least 200 culpable viruses
- pharyngitis – only 5–10% of adult sore throat is caused by Group A Strep
- acute uncomplicated cystitis – more common in females and usually caused by E. coli.

Point-of-care (POC) testing for COVID-19, flu, GAS and U/A can be useful tools to help guide the decision process. Many patients are reassured by this additional testing and the issue of an antibiotic becomes less. Chest X-ray is rarely needed in the absence of abnormal vital signs (temp >38C, HR >100bpm, resp rate >24br/min) and abnormal auscultatory findings.

But “I need an antibiotic” will continue to be a challenge for primary care providers trying to have an informed discussion about the Why for patients who may only be interested in the “I want it now.”

The next installment of Chief Complaint will examine “I need an X-ray” or, for the more informed, “I need an MRI.”

References


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Eponyms: What’s in a Name?

JOSEPH H. FRIEDMAN, MD

The Video in Medicine reported in this issue shows a rare, possibly never reported, overly active response to a flick of the middle finger, known as the “Hoffmann reflex,” named after German neurologist Johann Hoffmann (1857–1919) (Image 1), owner of the “Hoffmann syndrome,” a myopathy seen in hypothyroidism, and co-owner of the Werdnig-Hoffmann syndrome, a mortal disorder of babies, renamed “spinal muscular atrophy type 1.”

The reflex, less well known as the “finger flexor reflex,” turned out to have been described in print by his student, who named it after his teacher, the presumed discoverer. RIMJ’s Editor-in-chief William Binder, MD, asked me about Dr. Hoffmann. I knew nothing, other than that he had a neurological sign and a mortal disease of babies named after him. I could not recall having heard of Hoffmann’s syndrome, but muscle disorders and endocrinology were never academic strengths, and I learned about them only with an internet search.

Hoffmann was a major neurologist who devoted his career to the study of muscle disorders, publishing observations that advanced the field considerably, and was a well-regarded teacher. Unlike the neurologists Hugo Spatz and Julius Hallervorden, each of whom had a disease named after them, but revoked in 1996 because of their ardent Nazi political activities, Hoffmann apparently kept out of trouble and left a legacy that was exemplary and celebrated. Although we older neurologists felt more comfortable talking about Hallervorden-Spatz disease than Pantothenase kinase-associated neurodegeneration disease, none wanted the names of Hallervorden or Spatz to be celebrated in any fashion. If someone discussing a case mentions an eponymous sign or reflex, you interpret its implication based on context, or you must reveal your ignorance, and hope you’re not the only one listening who is unfamiliar with the sign. On the other hand, it is part of the ongoing saga of medical practice, which has been whittled away but not yet fully replaced by objective testing and digital evaluations. Eponyms help some of the old legends live on. It is our history.

Of course, eponyms occur outside of medicine. The Pythagorean theorem is a well-known example. In high school there was a reference to a point that had certain properties in three-dimensional Euclidean geometry. The name was the same as my best friend’s last name, so I jokingly asked him if it was named after his father. He said he didn’t know and would ask, as if this was an actual possibility. It turned out that his father was, in fact, a famous academic who could possibly have had that point named after him, but it wasn’t.

I had my own brush with eponymous fame long after I had become a neurologist. A nurse practitioner I worked with, Carol Jacques, told me that many of our Parkinson’s disease (PD) patients had runny noses. I didn’t think much about it until a new patient, wheelchair-bound from his Parkinson’s disease, told me that his single most bothersome problem was his runny nose. It ran all year round, all day long, and worsened when he ate. He would not eat with others around because his nose drippings fell into his food. Now that I faced this problem myself, I took it seriously. I started asking patients about it and discovered it was fairly common. I had no idea how to treat it, so I asked Carol, who told me,

**Eponyms help some of the old legends live on. It is our history.**
and I started to investigate. There were no references to this issue in the literature and in calling about, I was referred to an older ENT clinician who told me this was well known to otolaryngologists and was surprised that it wasn’t in the literature. So, I simply asked consecutive PD patients if they had rhinorrhea, nothing fancy, with measures of fluid production or quality of life impairment, and learned that it was, in fact, common. Given the high frequency of other autonomic problems in PD, this was not surprising. I published the observation, backed up by the survey.

I discussed rhinorrhea in PD with a colleague who told me that although he had known this for years, he didn't think it worth the trouble to write up. He thought that I deserved all the credit and fame, and suggested that water-like fluid dripping from the nose of someone with PD be called, “Friedman's sign,” or perhaps “Jacques-Friedman sign,” giving credit where it was due, but thereby confusing people googling who Jacques Friedman was. (Image 2).

I demurred. Like the “anal wink,” a drippy nose is better described by its features, and not by its discoverer’s name.

For more on medical eponyms, click on: www.whonamedit.com
Book targets IRB delays in medical research; proposes a more humane paradigm

JOSEPH H. FRIEDMAN, MD

The central theme of this book is that no one speaks for the unidentified people who were harmed or died as a result of IRB-induced delays in medical research. We think of IRBs as protectors of research subjects, and history has shown that they are sorely needed. No reasonable person objects to ethical oversight. What may not be apparent to those who have never dealt with IRBs is the unfortunate transformation they have undergone from their early days in the 1970s to their current state where, at least according to research studies cited in this book, even the research subjects themselves regard their informed consent documents as legal insulation for the researchers and their institutions, not as safeguards for themselves.

The book is a highly informed and well-reasoned appeal for a return to the basic ethical principles on which IRBs were founded: respect for persons, beneficence, and justice. The author makes the extremely important and overlooked observation that those who review for IRBs are forced to wear blinders, focusing on the potential subjects in a particular study, ignoring the larger picture of what benefits the research might bring. Dr. Whitney points out the injustices done when an IRB halts a study for minor reasons, causing delays and cost overruns that may lead to unnecessary deaths in people who are not subjects. How does this happen? A study performed to determine if intervention A is better than intervention B, in a disorder where both interventions are used widely, where the absence of data means that decisions are based on beliefs (ie, biases) rather than evidence, is delayed. Thus, the outcome, that one treatment lowers mortality significantly is delayed in changing the standard of care.

Resultant morbidity and mortality

The author supplies examples of this in major trials resulting in large numbers of increased deaths from heart attacks in women and men. An example is provided where a study to determine the safe oxygen level for treating severely premature infants at a time when some experts used higher levels than others was forced to use a cumbersome consent process that

Simon Whitney, MD, JD

Dr. Whitney is a family physician and ethicist at Baylor College of Medicine in Houston, Texas, where he holds the William O’Donnell and Regina O’Donnell Chair in Family Medicine. He is retired from the practice of medicine but continues to publish and teach about medical ethics.

Educational Background

BA, Yale University, 1974
MD, New York University, 1979
Family Medicine Residency, Swedish Hospital, Seattle, 1982
Board-certified in family medicine, 1982
JD with distinction, Stanford Law School, 1998
Fellowship in Biomedical Ethics, Stanford, completed 1999

Prior book


IRBs have long been seen as having a single purpose: to protect research subjects from abuse. This is the first manual to show how IRBs can fulfill their second, unspoken purpose: to allow scientists to save lives without unnecessary bureaucratic hindrances.

https://www.drsimonwhitney.com
delayed the study for two years. This delay robbed neonatologists of knowledge they needed to care for the 200,000 very premature infants born during that wasted time. In addition, federal officials asserted that the consent form should emphasize the risk of blindness or death from study participation, without also noting that not participating in the study also posed a risk of death and blindness. This led parents to the false belief that study participation had harmed their children.

He states that, “there is a second principle that the field is largely blind to: the imperative to help others, which includes doing research that relieves suffering and saves lives.” He quotes sociologist Carol Heimer, “the biggest ethical lapse in American regulation of human subjects’ research is the death and suffering that has resulted from slowing the pace and altering the focus of research and squandering research funds.” Dr. Whitney speaks for this unknown multitude, who far outnumber the people in the actual research studies.

Dilemmas surrounding informed consent

He provides a compelling history of the need for institutional oversight of research studies. Most readers are familiar with the Tuskegee syphilis study in the U.S., but this abomination was not unique. Similar studies abounded in the U.S., and most likely in other countries. Doctors, like all people, are the same the world over. It’s not just Nazis who performed unethical experiments. He reviews the progressive requirements needed to obtain IRB approval for an informed consent document, so that descriptions that formerly required a paragraph, now occupy several pages. Studies of research subjects’ opinions found that the subjects believed the consent was created to protect the doctor, not themselves, the subjects.

One of the areas that was not covered in this book was the informed consent for American studies performed in resource-poor countries. I learned of this issue from HIV researchers in Sub-Saharan Africa. An informed consent in the U.S. must be written to be understood at the 6th grade level, but in parts of the world where illiteracy is high, how does one discuss the risk of low white blood cell counts in people who don’t know what blood cells are? I heard discussions of this many years ago, where major universities had 12-page, single-spaced informed consents for people to sign who were unfamiliar with the terms and couldn’t read. How can consent be informed when the concept of “informed” may be so different between the research organization and the subject?

Independent oversight needed

The basic problem, according to Dr. Whitney, is that the federal agencies not only set the rules, but administer them, without independent oversight. An adverse ruling from the Office of Human Research Protection (OHRP) will not only halt a project but might halt all projects administered by whatever IRB was found to be at fault. This happened at Johns Hopkins in one example cited in the book. For a major medical center, this could mean hundreds of millions of dollars lost, in addition to time and research data that may become useless due to delays.

How to reform this runaway train? Dr. Whitney proposes a new federal oversight system that protects patients and loosens restrictions on investigators. He argues the OHRP should be limited in its police powers, and calls for a conceptual change that risk not be considered “the enemy” but a set of challenges that must also factor in the importance of the research outcome, and the “risk” to non-participants by delays in medical advances. He suggests that instead of American protocols stating that if the research intervention causes harm the institution is not responsible and you’re on your own, insurance should be provided to cover unexpected research-related injuries as is done in most countries. The requirements for consent should be modified, so that no-risk research need not require consent and that each institution develop its own guidelines meeting federal directives that are more general than they currently are.

If you’re interested in clinical research, read this book! It is not a diatribe against IRBs. It’s a call to action to make them more humane. It is highly readable and persuasive.

Author

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We are read everywhere

In 2023, more than 10,000 unique viewers from 40 countries have read articles in the Rhode Island Medical Journal or researched topics in its archives.

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6. Australia
7. Spain
8. Italy
9. France
10. Hong Kong

SAN DIEGO, CALIFORNIA
Jamie Lea Schaefer, MD, (left) and Kimberly Miller, MD, (right) check the journal archives during a break at the annual meeting of the Association of University Professors of Ophthalmology (AUPO), held in San Diego.

The AUPO is the organization for academic ophthalmology programs across the US and Canada that provides a forum for the promotion of medical student and graduate medical education in ophthalmology, ophthalmic research, and clinical excellence.

Dr. Schaefer is an ophthalmic plastic surgeon with LPG Ophthalmology, and Director of Medical Student Education, Division of Ophthalmology, Alpert Medical School of Brown University.

Dr. Miller is a glaucoma specialist with LPG Ophthalmology, and Program Director, Alpert Medical School of Brown University ophthalmology residency.

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Working for You: RIMS advocacy activities

February 1, Wednesday
Rhode Island Health Professions Loan Repayment Board of Directors Meeting: Stacy Paterno, staff

February 2, Thursday
RIMPAC, Senate Majority Leader Fundraiser: Michael Migliori, MD, Public Laws Chair; Robert Dulski, staff

February 6, Monday
RIMS Council meeting: Thomas A. Bledsoe, MD, President
Governor’s Commission on Disabilities; Robert Dulski, staff
Protect our Health Care Policy Group; Robert Dulski, staff

February 7, Tuesday
RIMS Physician Health Committee [PHC]: Herb Rakatansky, MD, Chair
Senate Chamber – Resolution on Maternal Health Awareness; Heather Smith, MD, MPH, President-Elect; Robert Dulski, staff
House Committee on State Government and Elections, testimony; Robert Dulski, staff
AMA Webinar: How the AMA is fighting for physicians and patients in Washington; staff
AMA Advocacy Resource Center Meeting, staff

February 8, Wednesday
Rhode Island Department of Health [RIDOH] Board of Medical Licensure and Discipline [BMLD]: Stacy Paterno, staff
Governor’s Overdose Intervention and Prevention Task Force: Sarah Fessler, MD, Past President

February 9, Thursday
Rhode Island Health Care Lobbyists Annual Meeting, hosted by RIMS; Robert Dulski, staff
Campaign to Pass the Equality in Abortion Coverage Act [EACA] meeting: Robert Dulski, staff

February 10, Friday
Executive Office of Health and Human Services and RIMS Meeting: Elizabeth Lange, MD, Immediate Past-President; Matthew Smith, MD, Treasurer; Kara Stavros, MD, Vice President; Roberto Ortiz, MD, Secretary, Michael Migliori, MD, Public Laws Committee Chair; Peter Karczmar, MD, RIMPAC Chair, and RIMS staff

February 14, Tuesday
Legislative Meetings with Sen. Whitehouse and Sen. Reed; Heather Smith, MD, MPH, President-Elect; Stacy Paterno, staff
House Committee on Health and Human Services, Testimony; Robert Dulski, staff

February 15, Wednesday
AMA National Advocacy Conference, Washington, DC: Heather Smith, MD, MPH, President-Elect; Stacy Paterno, staff
Legislative Meetings with Reps. Magaziner and Christina Rankin [Rep. Cicilline’s office]; Heather Smith, MD, MPH, President-Elect; Stacy Paterno, staff
RIDOH Primary Care Physicians Advisory Committee [PCPAC] meeting: Elizabeth Lange, MD, Immediate Past President

February 16, Thursday
RIMS Climate Change and Health Committee: Katelyn Moretti, MD, Co-Chair; Alison Hayward, MD, Co-Chair

February 20, Monday
Protect our Health Care Policy Group; Robert Dulski, staff

February 21, Tuesday
Rhode Island Foundation Long Term Health Planning Committee: Stacy Paterno, staff
National Government Services Key Stakeholder Meeting: Stacy Paterno, staff

February 23, Thursday
Opioid Settlement Advisory Committee, Robert Dulski, staff

February 28, Tuesday
Career Pathways, Pipelines, & Higher Education Partnerships Workgroup: Stacy Paterno, staff

In February, Heather Smith, MD, MPH, President-Elect of RIMS, shown in the middle, and Stacy Paterno, RIMS CEO, attended the AMA National Advocacy Conference in Washington, DC, and met with Sen. Sheldon Whitehouse, Sen. Jack Reed, and staff members of Rhode Island’s Congressional delegation to discuss Medicare payment reform, scope of practice issues, graduate medical education, and physician workforce challenges.

Alison Hayward, MD, Co-chair, RIMS Climate Change and Health Committee, testified Feb. 16th on an energy efficiency proposal of the Governor’s proposed budget at the Senate Finance committee hearing. Dr. Hayward and other climate change advocates expressed concerns on how a $4.5 million program is funded, which, as proposed, would take money designated for existing energy efficiency programs and divert them to a climate action plan. Advocates agree that the state’s climate action plan should be funded but it shouldn’t come at the cost of people who are practicing energy efficiencies with their home utilities.
Physician Advocacy in Rhode Island: History, Culture & How to Get Involved

KEITH CALLAHAN, MD, MBA; GINA LA PROVA, MD; ROBERT DULSKI, MPPA, MA

[Managing editor’s note: The following three-part commentary presents the role and scope of advocacy efforts which have been an integral part of the mission of the Rhode Island Medical Society (RIMS) and its members since its inception. The participation of physicians, health care professionals and students is vital in continuing this legacy.]

KEYWORDS: advocacy, advocacy training, legislators, talking points, special interests

PART 1

HISTORY AND CURRENT EFFORTS OF ADVOCACY: THE RHODE ISLAND MEDICAL SOCIETY’S COMMITMENT

The Rhode Island Medical Society (RIMS), established in February 1812 by the Rhode Island Legislature, is considered the premiere advocate organization speaking on behalf of patients and the medical profession in Rhode Island. For more than 200 years, the practice of medicine continues to evolve. Be it licensing physicians for the first time in the State’s history in 1895, or advocating for patient access and rights in the modern day, RIMS has been at the center of shaping policy related to health and medicine.

RIMS was established by 46 well-intentioned physicians, and has evolved to engaging and representing thousands of local physicians and physician assistants. The Society actively supports legislation that will help patients, allows physicians to practice in an environment that will not impede vital life-saving care, and opposes legislation and regulations which will harm appropriate patient care. Members of the medical society have diverse personal and professional backgrounds yet share a common goal that has been consistent for over two centuries. Through advocacy, members play a crucial role in the medical community as Rhode Island meets the evolving challenges of medical practice and quality patient care.

Over the past three years, we have seen how dramatically the world can change and how vital the medical community can be in helping to formulate effective government responses. Crises over the last few years include, but are not limited to, COVID-19, opioid use, access to behavioral health services, and protecting the rights to reproductive healthcare services. The COVID-19 pandemic exposed the fragility in the Rhode Island healthcare system. Hospitals were over-flowing with COVID-19 patients and additional field hospitals were quickly erected. Offices closed and healthcare moved to virtual visits on a massive scale. Vaccine hesitancy became a major barrier to patients receiving the vaccines that could flatten the steep infection curve and help physicians and hospitals manage a more reasonable caseload.

RIMS has been there every step of the way, informing then Governor Gina Raimondo and now Governor Daniel McKee on sensible policies from the medical and clinical perspective. RIMS members also serve on various commissions and committees at the Rhode Island Department of Health, Office of the Executive Office of Health and Human Services, Office of the Health Insurance Commissioner, and other state agencies to inform a broad range of public health decisions. In addition, RIMS members go to the Rhode Island State House to advocate for informed healthcare legislation.

RIMS also sends representatives to the American Medical Association to represent the interests of Rhode Island patients and physicians on the national level. This commitment to advocacy has never been stronger.

INITIATIVES

RIMS has been influential for several monumental legislative initiatives in recent years. Some of the more recent initiatives that RIMS has either led or played a role in have included:

- Passing harm reduction center legislation; Rhode Island was the first state in the country to do so
- Codifying in law the Interstate Medical Licensure Compact, which allows physicians licensed in Rhode Island to meet common requirements for licensure in multiple states, allowing for a more fluid national physician workforce
• Providing advice and counsel to Governor McKee in the search for the next Director of the Rhode Island Department of Health
• Supporting access and protections to the legal rights to comprehensive reproductive healthcare services
• Advocating for increased Medicaid rates for several healthcare services
• Supporting firearm safety measures
• Being active on climate change and green energy initiatives
• Ensuring the state is providing adequate behavioral health supports

Healthcare has had major changes since the 2010 Affordable Care Act (ACA) was signed into law. As one can imagine, there was a lot of advocacy done before, during and after the passage of this landmark legislation. Even in 2022, Rhode Island legislators introduced bills to codify the 10 essential ACA benefits into state law. The ACA intends to meaningfully change the delivery of care from volume-based care to value-based care. Changes almost always bring new stresses and challenges. Changes imposed by others who are uninformed lead to feelings of loss of control and may lead to burnout. Participating in and directing changes that lead to improved outcomes enhances career satisfaction and can revitalize one’s commitment to the profession.

It is important to keep in mind that we are always fighting for patients to be the winners. That is the only bipartisan message that can be universally agreed upon. In advocacy, one should always ask on behalf of someone else, never oneself. RIMS' advocacy work is to improve a system that ensures physicians are able care for patients the best way possible for everyone involved.

**MEDICINE’S CRITICAL ROLE IN THE LEGISLATIVE PROCESS**

Major legislation in healthcare can take decades. At the federal level, President Nixon supported HMOs but was unable to gain much traction. President Clinton’s 1993 healthcare reform attempts failed. President Obama’s ACA has mostly survived many political and legal challenges. To be effective, one should be willing to work with those who share the same or similar goals. It is important to keep the focus on the policy, not politics and to be mindful of working across the aisle – not isolating any political party. One key characteristic of politics is the art of compromise, which requires the advocate to know which components are critical and which can be rescinded when necessary to ensure passage. Identifying allies is also critical.

**ADVOCACY AS A CORE RESPONSIBILITY OF THE MEDICAL PROFESSION**

Clinicians are in a good position to influence public policy, which ultimately helps patients. As a clinician and patient advocate, one is asking for public resources to fund an important service or for a set of rules that allows the right clinician to provide a needed service for patients at the right time, for example. Advocacy plays a critical role in how policy decisions are made. There is a common saying in advocacy, “If you are not at the table, you are on the menu.” There are many versions of this saying, but the bottom line is that if one does not show up, someone else will be there to influence the decision in their own best interests. Physicians bring knowledge as well as wisdom and phronesis to help inform policy makers and ensure patients voices are heard.
Definitions

Ask: During meetings, advocates are seeking an expected result with an intended outcome. Always enter a meeting with a legislator or administrator knowing what the “ask” is.

Inside the beltway: Professionals working in Washington, D.C.

Policy wonk: An expert on an issue

State House: Rhode Island State Capitol, but advocates and legislators rarely refer to the building as the capitol.

The Players

Advocate: Advocates speak in favor or against a position, policy, or law based on personal or professional conviction

Legislative aide: Policy specialist who is often subject matter expert and trusted resource in a legislator’s office.

Lobbyist: Paid by an organization to advocate for a particular position, policy, or law.

State and Federal Advocacy

With state legislators, meetings are usually one on one with the legislator. In Rhode Island, most state legislators do not have offices in their district, and many have shared office space at the State House for meetings. Unlike their federal counterparts, state legislators typically do not have much of a budget for staff.

At the federal level, the work begins with staff, but one should always formally request a meeting with the elected official. Meetings can take place in a variety of locations, DC or local offices, or a visit to a healthcare facility for a tour, ribbon-cutting ceremony or a press event. Facilitating a meeting with a federal official typically takes more time, so plan ahead.

Talking Points

Being properly prepared is very important when speaking about an issue or position. A focused message with salient but succinct supporting arguments will always be more effective than a meandering presentation with a vague “ask.”

Special Interests

It is often said that “special interests are running everything.” A special interest is a group with specialized knowledge in the policy under consideration. When a group meets with legislators, they too are considered a “special interest.” Legislators cannot know everything about everything, that is why a meeting with them is useful.

Patient-safety vs Patient-access Issues

Sometimes different clinician groups are allies, and sometimes they are on opposite sides of an issue. That is OK. This is not personal. It is the nature of the job.

A “patient-access issue” is generally a funding issue – financial support for needed services. Physicians (internists, family medicine, pediatricians, etc.) and non-physicians (nurse practitioners, etc.) may all agree that more funding is needed for patients to get primary care.

A “patient-safety issue” is generally a debate on how much education is needed to safely provide a particular clinical service. For example, physician assistants and physicians may disagree on the level of autonomy of practitioners, i.e., who gets to see patients independently and under what circumstances. Physician examples include C-section hospital privileges for family physicians vs obstetrician-gynecologists, hospital ICU privileges for primary care physicians in urban vs. rural areas, colonoscopy and EGD hospital privileges for family physicians vs gastroenterologists.

Political Action Committee (PAC)

This is an organization set up to make donations to political campaigns. This support helps legislators who share common goals to get elected. Election campaigns are expensive. This is one way to support legislators and build a relationship with them. Political contributions to campaigns are always separate and distinct from issue-based advocacy efforts, even for allies running for office or reelection.

PART 3

HOW TO MEET WITH LEGISLATORS AND DO EFFECTIVE ADVOCACY

Advocacy is an important part of the machinery that keeps a democracy accountable to its constituents. Physicians and physician assistants at the Rhode Island Medical Society (RIMS) are an important part of that process. Advocacy at RIMS is an organized effort that represents the patient’s interests in Rhode Island from the many stakeholders attempting to shape how healthcare is delivered. They meet with members of state government, including the governor, legislators, and administrators at all levels.

Typically, advocates meet with representatives of state government during the State House General Session (the State House is closed to new business July through December). It is critically important to encourage students and physician trainees to become involved because they are the next generation to continue the fight for patient’s health and wellness through shaping the legal and regulatory landscape of the Rhode Island healthcare system.
COMPREHENSIVE REPRODUCTIVE HEALTHCARE FOR WOMEN: AN ADVOCACY CASE STUDY

State and national political changes are a dynamic process. For example, when Roe v. Wade (the United States Supreme Court ruling which made abortion legal in the United States) was overturned, the decision was turned back to each state to make its own decision about this topic. Understanding the real potential for Roe v. Wade to be overturned, RIMS began raising the issue with Rhode Island legislators, lending support to state legislation to protect comprehensive reproductive rights of women. When advocating on such impactful topics, longstanding relationships and influence helps align legislators on important topics.

What happened?

RIMS has been a staunch proponent of the full spectrum of reproductive medical care, for many years. In Rhode Island, were Roe v. Wade to be reversed, the state would revert to a very restrictive anti-abortion statute in place nearly 50 years ago. RIMS’ proactive strategy to help craft new legislation codifying reproductive privacy passed in 2019, which was prior to the United States Supreme Court’s action in June 2022, ensuring that this act was timed to be enacted ahead of the expected ruling by the United States Supreme Court to overturn Roe v. Wade. That ruling came on June 24, 2022, when the United States Supreme Court ruled in the case of Dobbs v. Jackson Women’s Health Organization. Since Rhode Island passed their codifying reproductive privacy measures in 2019, protections were already in place at the State level to ensure reproductive access and rights to Rhode Island patients.

Additionally, in response to advocacy by RIMS and others, on July 5, 2022, Rhode Island Governor Daniel McKee signed an executive order to prevent any Rhode Island state entity from cooperating with any investigation and proceedings initiated by another state against patients or abortion providers, prevent extradition from Rhode Island to another state for the purpose of abortion-related prosecution, and to provide protection to healthcare workers who participate in reproductive care, including abortions. And, in September 2022, Governor McKee announced that his FY’24 budget proposal will cover abortions for all Medicaid recipients and state employees and their spouses, two areas that RIMS urged legislators to incorporate in previous forms of legislation.

This is just one example of how strong advocacy can make a difference for the patients that we serve. The voice of Rhode Island physicians is only heard when we take time to meet with our elected officials. The future of quality healthcare depends not just on us being in our offices with patients, but also with engaging legislators on healthcare issues at the State House.

GENERAL GUIDELINES AND STRATEGIES FOR EFFECTIVE ADVOCACY

What follows is a framework for how to have a meeting with a legislator and be an advocate on behalf of patients. The purpose of a meeting with a legislator is to help educate them in making decisions to either support or oppose legislation that one is advocating for or against. An email introduction is an effective way to request a meeting and provide a brief introduction of oneself, what issue the prospective meeting will cover, and seeing if there is a day and time that works best with their schedule. Most Rhode Island legislators have full-time careers as well as serve as an elected official. They generally do not have dedicated staff, so one will often be scheduling a meeting with the legislator directly.

As previously mentioned, state legislators do not have district offices, so if one wants to meet in the district, offer a spot that the legislator often visits. If the legislator suggests meeting at the State House, not every legislator has a private office, so be prepared to either share a conference room with others or meet in the hallway. Depending on the topic, one may want to start their first outreach to the legislature with Senate and House leadership. These legislators tend to have more influence on legislative outcomes and incorporating them into the meeting can only help the cause.

Meeting legislators

During a meeting be respectful in what is being “asked.” One should always thank legislators who take the time to meet, who supported legislation in the past as well as their ongoing support for long-standing issues (for example, universal colon cancer screening, etc.).

An important thing to remember is that legislators have constraints that they must keep in mind when they are voting for a new law. Always thank them for educating advocates about the difficulties they face while trying to support the “ask.” Sometimes they are supportive but cannot vote for it. For example, they may say that they would vote “yes” for the bill, but they were elected on a campaign of not raising taxes and this program could not be paid for without new taxes. This is frustrating but it is sometimes the reality of the job. Be sure to acknowledge that even though they voted against something that is now law, there is still interest to work with the legislator to make this law the best it can be to help those it is intended to help.

Connecting on the issues

One way to make an issue compelling is to provide a personal connection to the topic being discussed. Being a physician will give the position added weight but having a personal story about a patient’s experience will help the legislator remember the reason behind the advocacy position. Here are some additional things to do and not do when meeting with legislators:
Some Dos and Don’ts

Do:
• Craft talking points prior to the conversation, ensuring three to four critical points are covered on the topic.
• Follow through with anything needing further information. Being a reliable resource for legislators starts with getting them timely and accurate information soon after the meeting with them.
• Check in with the legislators even when an “ask” is not needed and offer support on any medical legislative topics they may have a question about.
• Participate in efforts important to the public official by attending events and volunteering.
• Share on social media support for them taking time to meet on the topic.
• Consider helping legislators get elected – keep this separate from the official meeting request. Never mix the two. If one has the time, volunteer or donate to their campaign if one believes in them and their positions.

Don’t:
• Publicly criticize a legislator, ever. Speak to the position, not the person, as that legislator may be needed at another time for another battle.
• Arrive late to the meeting. If one is running late, call, text, or email them with an updated ETA.
• Talk about campaign donations when meeting on a legislative topic. Keep politics and government business separate.

WHAT TO EXPECT WHEN MEETING WITH AN ELECTED OR APPOINTED OFFICIAL

The steps in a standard 15- to 30-minute meeting (generally enough time to talk about four or fewer “asks”):
• Personally introduce oneself and colleagues in the group.
• Share one’s credibility (MD, DO, PhD, MBA, etc.) and connection to the topic.
• Let the legislator know what city the meeting participants are from and who their elected officials are.
• Show appreciation to them making time to meet with advocates on the topic.
• Transition to the meeting topic.
• Detail why an organization, such as RIMS, is for or against a piece of legislation, providing evidence-based reasons in the delivery.
• Proactively address what our neighboring states (MA & CT) are doing on this issue and how much will it cost or save the state.
• Is the topic being discussed going to protect or save lives? If so, discuss this.
• Discuss the “talking points” – why this new policy or law will help or harm patients or support a system that allows physicians to provide care in a way that is best for patients. Also, know which legislators are for or against the topic and why [these are not talking points but good information to have as legislators may ask this].
• Don’t lecture but ask questions of the legislators as they may already know some of the information being shared. This could also allow the meeting to focus on areas that the legislators have questions about, eliminating the need to talk about already known points.
• Ask for their support or opposition for the topic.
• Write down questions where answers need to be researched and ensure proper follow-up after the meeting.
• If not already done so, provide the legislator with everyone’s contact information.
• Send an email thanking the legislator for meeting and remind them in detail of what was discussed. Also, thank them for the things that they committed to following through on.

CONCLUSION

Healthcare advocacy is a professional responsibility and is vital to crafting and improving laws and shaping regulations that impact our profession and the patients we serve. One’s involvement with RIMS’s advocacy efforts gives patients the opportunity to have better health outcomes and improve the healthcare system for everyone involved. For any questions or a verbal tutorial, email Stacy Paterno, Executive Vice President at RIMS, at spaterno@rimed.org.

A quick summary of advocacy efforts is available at: https://rimedicalsociety.org/advocacy-efforts

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RIMS gratefully acknowledges the practices who participate in our discounted Group Membership Program

For more information about group rates, please contact Ali Walz, RIMS Director of Member Services
New program at Women & Infants aims to reduce postpartum hypertension, hospital readmissions

PROVIDENCE – Women & Infants Hospital recently announced a new program that aims to reduce maternal morbidity and hospital readmissions related to postpartum hypertension. The new remote blood pressure monitoring program is offered as a new standard of care to all patients who deliver at Women & Infants Hospital and have a diagnosis prior to hospital discharge of chronic or postpartum hypertension, preeclampsia, HELLP, or eclampsia.

“We are optimistic that this program will reduce maternal morbidity and hospital readmissions related to postpartum hypertension overall and improve health equity among our patients with hypertension,” said METHODIUS G. TUULI, MD, MPH, MBA, Chief of Obstetrics and Gynecology, Women & Infants Hospital; Executive Chief of Obstetrics and Gynecology, Care New England Health System.

All eligible postpartum people are approached by DANIELLE SIMMONS, NP, and bilingual Community health educator, MARIA MEJIA CASTILLO, to explain the program, provide blood pressure monitors, and educate patients on how to take their blood pressure at home. Patients are then asked to take their blood pressure daily from discharge until 6 weeks postpartum and to upload their results. The NP monitors the results and initiates or adjusts medication as needed.

Since its launch in November, over 240 patients have enrolled in the Hypertension Equity program and it is already seeing positive results according to ADAM LEWKOWITZ, MD, a member of the Division of Maternal-Fetal Medicine at Women & Infants Hospital. “We estimate that we have successfully kept nearly 40 patients out of our postpartum clinics or Emergency Department by starting or increasing their blood pressure medications remotely when their home blood pressure values were a little too high,” he said.

The Hypertension Equity Program was created with a multidisciplinary team using a health-equity-centered approach. Black and Latinx patients are at higher risk of having high blood pressure during or after pregnancy and are at a much higher risk of complications from high blood pressure in these periods compared to white patients. So far, nearly 1 in 4 program participants are Black and nearly 1 in 2 patients are Latinx.

Funding for the cuffs has been covered in a variety of ways. The leadership of Women and Infants Hospital and Care New England made a down payment on the staff and initial stock of blood pressure monitors. United Healthcare and Blue Cross & Blue Shield of Rhode Island supplied their members through a donation, while Neighborhood Health Plan of Rhode Island to increase by close to 200% by 2030, yet studies have shown that approximately 20% of patients are dissatisfied after conventional surgery.

“This technology is changing the way joint replacement surgeries are performed,” added Dr. Pizzarello. “This offers remarkable precision and accuracy, ensuring proper fit and optimal results. I look forward to seeing patients recover from hip and knee replacements faster, with less discomfort, and the confidence to return to their favorite activities.”

Fatima now offering Mako robotic technology for joint replacement surgery

PROVIDENCE – Our Lady of Fatima Hospital has introduced the Mako SmartRobtics system for partial knee replacement, total knee replacement, and total hip replacement.

DR. MICHAEL C. MARIORENZI, a member of the division of orthopedics, performed the first procedures. He and DR. PETER PIZZARELLO are specialty-trained and certified in the use of the Mako technology. They are both affiliated with Orthopedic Associates in Cranston. Additional surgeons are expected to join them.

“We are very excited about this technology at Fatima and CharterCARE and are pleased to make it available to our patients,” said Dr. Mariorenzi. “This is an excellent tool for surgeons to help improve outcomes for patients undergoing joint replacement.”

Total knee replacements in the United States are expected to increase by close to 200% by 2030, yet studies have shown that approximately 20% of patients are dissatisfied after conventional surgery.

Help your Patients Keep their Medicaid Coverage

Medicaid members will need to renew their eligibility with the State of Rhode Island to keep their health insurance.

You can help now by reminding your Medicaid patients to update their account information with their current address and phone number. Medicaid members can update their information by:

- Logging into their HealthSource RI account: https://healthyrhode.ri.gov/
- Calling HealthSource RI at 1-855-840-4774 (TTY 771)

Thank you from all of us at Neighborhood for your commitment and partnership in ensuring Rhode Island families keep their health care coverage!
Ajello introduces Lila Sapinsley Compassionate Care Act

STATE HOUSE – Rep. EDITH H. AJELLO has introduced legislation aimed at allowing terminally ill Rhode Islanders to end their suffering on their own terms.

The Lila Manfield Sapinsley Compassionate Care Act would guarantee a terminal patient’s right to choose to hasten the end of their lives under certain conditions.

“Terminal ill patients should not be forced to remain in agony without hope of reprieve if they wish otherwise. We should trust patients to know when they have suffered enough, and respect their wishes. The Lila Sapinsley Act is carefully written to provide many layers of protection, and I am confident that Rhode Island can safely join the ranks of states that allow compassion for people suffering at the end of their lives,” said Representative Ajello [D-Dist. 1, Providence].

The legislation, which Representative Ajello has introduced since 2015, is named for the former Rhode Island senator Lila Sapinsley, a political mainstay in Rhode Island. Active since the 1960s, she was the first female Senate minority leader. After leaving the Senate, she remained active and was well known for her work on health care access, protecting civil liberties, promoting open government and engaging young students. Before her death at age 92 in 2014, she had been working to develop and promote this legislation.

The bill (2023-H 5210) would establish a system through which terminally ill adult patients could request from their physician a prescription for medication to be self-administered to hasten the patient’s death. Legal compliance would require that the patient make two documented requests to their physician, at least 15 days apart, including a written request signed in the presence of two witnesses. The patient must be informed that they can rescind their request at any time.

The process spells out numerous conditions that must be met, including that the patient be informed of their prognosis, treatment options, and all feasible end-of-life services including palliative care, comfort care, hospice care and pain control. The patient must be referred to another physician for second opinions. Additionally, the bill requires verification that the patient does not have impaired judgment.

Under the proposed legislation, no doctor, nurse or other person would be subject to any criminal or civil penalty for providing the prescription.

No doctor, nurse or other person would be legally required to prescribe a lethal dose of medication for a patient. Health care facilities would be allowed to prohibit physicians from writing prescriptions for lethal doses of medication for patients who are residents of the facility.

Ten states, including Maine and Vermont, and the District of Columbia have similar laws allowing medical aid while dying.
WASHINGTON, DC – This year’s flu vaccines reduced the risk of influenza A-related hospitalization among children by nearly three quarters and among adults by nearly half according to CDC. Vaccination also provided significant protection against flu-related illness and flu-related emergency department visits, with people who were vaccinated about half as likely to have those outcomes as people who had not been vaccinated. Benefit from vaccination was observed across all age groups. These interim vaccine effectiveness (VE) estimates were presented Feb. 23rd during an Advisory Committee on Immunization Practices (ACIP) meeting in Atlanta. This is the first time that estimates of flu vaccine effectiveness against more severe outcomes have been available this early and from three different VE networks, which is a result of the early flu activity seen this season. These data underscore that flu vaccination can offer substantial benefit against flu and its potentially serious complications. While flu activity has returned to low levels at this time, CDC continues to recommend annual vaccination as long as flu is spreading in the community.

According to data from the New Vaccine Surveillance Network (NVSN), VE against the predominant H3N2 viruses was 45% among children, which is higher than seen previously for this virus. To compare, during previous seasons, VE against H3N2 has been around 30%. The higher VE this season is likely because flu vaccination elicited good immunity against the variety of viruses circulating. Flu vaccine effectiveness against circulating influenza A[H1N1] viruses was 56%.

Consistent estimates were calculated though different networks:

The New Vaccine Surveillance Network (NVSN)
For 2022–2023 interim flu VE estimates, NVSN includes seven study sites that evaluate how well flu vaccines protect against flu-related hospitalizations and emergency department visits among children.

From September 13, 2022, to January 25, 2023, children who were vaccinated against flu were 68% less likely to be hospitalized because of flu illness or related complications, and 42% less likely to visit an emergency department because of flu-related illness. The overall VE against laboratory-confirmed influenza A in hospital and emergency department settings was 49%. This is encouraging news about vaccine effectiveness during a season that had a lot of early, severe illness among children.

Investigating Respiratory Viruses in the Acutely Ill (IVY) Network
For 2022–2023 interim flu VE estimates, IVY includes 22 medical centers in 19 U.S. states that evaluate how well flu vaccines protect against flu-related hospitalization among adults.

Similar to data in children, from October 1, 2022, to January 31, 2023, flu vaccination significantly reduced flu-related hospitalization among adults. Overall, adults who were vaccinated against flu were 43% less likely to be hospitalized because of flu illness or related complications. Adults 65 years and older were 35% less likely to have a flu-related hospitalization, and adults 18–64 years were 51% less likely to have a flu-related hospitalization.

Importantly, IVY can also evaluate flu VE among adults who are immunocompromised. Flu vaccination provided important protection among adults, including among older adults and adults with a documented immunocompromising condition. Adults with a documented immunocompromising condition were 44% less likely to be hospitalized with flu-related complications. Older adults and adults with a documented immunocompromising condition are at higher risk of serious flu complications and less likely to have an immune response to vaccination.

VISION VE Network
For 2022–2023 interim flu VE estimates, VISION includes 367 health facilities that evaluate how well flu vaccines protect people against flu in urgent care, emergency department, and hospital settings.

Results from VISION VE Network were consistent with the other VE networks. From October 15, 2022, to January 24, 2023, flu vaccination significantly reduced emergency department and urgent care visits as well as hospitalizations among adults. Overall, adults who were vaccinated against flu were 44% less likely to visit an emergency department or urgent care center and 39% less likely to be hospitalized because of flu illness or related complications. These estimates are higher than VE estimates from the 2021–2022 season against emergency department or urgent care visits (25%) and hospitalization (25%) when H3N2 viruses were predominantly circulating at the same VISION Network sites.

Data from VISION VE Network also show protection among older adults and adults who are immunocompromised. Adults 65 years and older were 39% less likely to visit an emergency department or urgent care and 42% less likely to be hospitalized because of flu illness or related complications. Adults with a documented immunocompromising condition were 30% less likely to have a flu-related emergency department or urgent care visit and 31% less likely to be hospitalized with flu-related complications.

Data on VE by vaccine type are not available. However, according to data from the VISION VE Network, more than 90% of adults 65 years and older with a known vaccine type received high dose or adjuvanted flu vaccine. This is encouraging news after ACIP voted in June 2022 to preferentially recommend the use of specific flu vaccines for adults 65 years and older, including higher dose and adjuvanted flu vaccines.
McKee, EOHHS announce Medical Respite Care Pilot

PROVIDENCE – Governor DAN McKEE and the Rhode Island Executive Office of Health & Human Services (EOHHS) recently announced the launch of a pilot program aimed at addressing the needs of Rhode Islanders who are experiencing housing insecurity or homelessness who have acute injuries and illnesses. The program will be managed by Westbay Community Action, together with the State and multiple community partners.

The program, located at the Hallworth House facility at 66 Benefit Street in Providence, will begin with an initial capacity of 20 beds with plans to add an additional 10 beds as need and funding dictate.

Referrals will initially only be accepted through existing pilot partners (RIDOH, Thundermist, Providence Community Health Centers and Lifespan), but will have the potential to expand to other referral sources as the pilot is evaluated and if scale-up plans are initiated.

Clients will be engaged with a medical provider, who will oversee client care and recovery. Additional services will be offered on site, including connections to social supports and programs, behavioral healthcare resources, housing navigation support, and medication assisted treatment as needed. Clients will be provided with a single room with 24-hour access to an established bed, three meals per day, and cleaning and laundry service. Each person’s length of stay in the program is dependent on their individual recovery period and treatment plan.

Partners for this pilot include:
- Westbay Community Action
- Thundermist Health Center
- Providence Community Health Centers
- Lifespan
- Rhode Island Coalition to End Homelessness
- Housing is Health Collaborative
- UnitedHealthcare Community Plan of Rhode Island
- Executive Office of Health and Human Services (EOHHS)
- Rhode Island Department of Health (RIDOH)
- Department of Behavioral Healthcare, Developmental Disabilities and Hospitals (BHDDH)
- State of Rhode Island Department of Housing

This program is made possible with funding from the Executive Office of Health and Human Services, Consolidated Homeless Fund through the City of Providence and Office of Housing, Thundermist Health Center, Providence Community Health Centers, Lifespan, and the Rhode Island Department of Health.

The Medical Respite pilot will be extended in six-month increments, depending on availability of funding and program performance. For more information about the Medical Respite program, visit: https://eohhs.ri.gov/initiatives/medical-respite-care

Kent Hospital staff come together to aid humanitarian crisis in Syria and Turkey

WARWICK – Kent Hospital health care workers are partnering with international organizations to help respond to the humanitarian crisis in Turkey and Syria after devastating earthquakes have left over 46,000 people dead, and tens of thousands injured, amid crumbling infrastructure.

DRS. JINEN THAKKAR, LAURA FORMAN, HADEEL ZAINAH, and MERY DEEB, are leading Kent Hospital’s efforts to collaborate with colleagues across the state and the nation to leverage critical resources purchased by area hospitals and through generous donations.

Dr. Forman, an emergency medicine physician, has participated in global disaster relief efforts before, including in Central America, Bosnia, Croatia, and Madagascar. “I am glad to know that so many from Rhode Island are jumping in to help, especially here at Kent Hospital. I know what it’s like to work with little to no supplies in devastating conditions, so I’m aware how appreciative the people of Syria and Turkey will be to receive any supplies we’re able to provide,” she said.

“Once we collect desperately needed supplies, the humanitarian aid will be flown via cargo jet to Beirut airport, after which it will be delivered to Archimandrite Meletius Shattahi, who is the director of the Department of Ecumenical Relations and Development (DERD) in Syria. To those affected by the earthquakes, these supplies can be lifesaving. I want to make sure we do everything we can to help our brothers and sisters overseas who are suffering,” said Dr. Thakkar, an internist at Kent Hospital.

At the present time, Turkey and Syria are in need of medical and surgical supplies. The area is also in dire need of baby formula for term and preterm neonates, diapers, sheets, tents, sanitary products, canned food, and air mattresses.

For more information about how you can make a donation of in-kind supplies, contact Kate Wishart, Major Gifts Officer, Kent Hospital, at 401-737-7010, x31134 or KWishart@CareNE.org to arrange a drop-off. Or conveniently donate online by visiting: https://foundation.kentri.org/donate-earthquake-crisis.
IN THE NEWS

Reed: CDC data shows urgent need for more school-based mental health services

PROVIDENCE – Alarming new data from the latest CDC Youth Risk Behavior report shows teens, especially girls, are experiencing shockingly high levels of depressive symptoms, suicidal thoughts, and mental health challenges. Nearly 1 in 3 high school girls reported in 2021 that they seriously considered suicide and nearly 60 percent of teenage girls reported feeling so persistently sad or hopeless almost every day for at least two weeks in a row during the previous year that they stopped regular activities.

U.S. Senator Jack Reed says these numbers should serve as a national wake-up call and spur Congress to take further action to address the mental health crisis impacting today’s youth.

“This is an emergency and we’re seeing more kids end up in emergency rooms experiencing mental health issues because we’re not being proactive enough and providing integrated care and sustained support. When it comes to mental and behavioral health services, it’s important to meet children where they are and connect them to the help they need. Early intervention and timely services are essential and schools can play a key role,” said Senator Reed. “We must ensure an integrated system and appropriate, professional staffing is in place to support student well-being and assist schools with their mental health resources to better serve at-risk students.”

In 2022, Reed helped include $3 billion for school and community-based mental health and trauma-informed care in the Bipartisan Safer Communities Act (P.L. 117-159), which President Biden signed into law.

Last December, the Rhode Island Department of Elementary and Secondary Education was awarded $2 million of this federal funding to increase access to school-based mental health services and strengthen the local pipeline of mental health professionals. The award was part of a five year-$10 million grant to the Rhode Island Department of Elementary and Secondary Education through the School-Based Mental Health Services Grants (SBMHSG).

Rhode Island allocated its SBHHG funding to a pilot program serving four school districts: Coventry Public Schools; Johnston Public Schools; Exeter-West Greenwich Regional School District; and the Segue Institute for Learning. Under the state’s plan, the federal funds will be used to employ two dozen school counselors, approximately 23 school social workers, and six school psychologists.

In addition to SBMHSG funding, Reed also helped make nearly $18 million in federal mental health funding for students available to Rhode Island schools under the Substance Abuse and Mental Health Services Administration’s (SAMHSA) Project AWARE (Advancing Wellness and Resiliency in Education). Project AWARE is a competitive grant program supporting activities that identify children and youth in need of mental health services, increase access to mental health treatment, and promote mental health literacy among teachers and school personnel.
Appointments

CharterCARE names N. Joseph Espat, MD, surgeon-in-chief

PROVIDENCE – N. JOSEPH ESPAT, MD, MS, FACS, has been appointed surgeon-in-chief for CharterCARE Health Partners, a community health system that includes Our Lady of Fatima Hospital and Roger Williams Medical Center.

In this new role, he will lead the integration of existing surgical programs and development of new and clinical programs across the CharterCARE system. He will also oversee the development of postgraduate education and surgeon recruitment and will continue in his current role as The Harold J. Wanebo Professor and Chairman of Surgery, and clinical director of the Cancer Center. He currently holds the rank of professor and assistant dean of clinical Affairs at the Boston University School of Medicine.

Dr. Espat is a native of Tampa, Florida, and completed his undergraduate studies at the University of South Florida, with degrees in biology and philosophy. Subsequently, he attended medical school at the University of Florida, Gainesville. Dr. Espat completed his general surgery training at the University of Florida and completed a surgical oncology/hepatobiliary fellowship at the Memorial Sloan Kettering Cancer Center in New York.

Dr. Espat has been the recipient of NIH funding and has authored more than 250 articles, chapters and abstracts. His area of clinical interest is laparoscopic and open upper GI surgery with a focus on Hepato-pancreatico-biliary malignancy.

Kristen Kichefski, MSN, named chief nursing officer at Bradley

EAST PROVIDENCE – Following an extensive national search, Bradley Hospital has appointed KRISTEN KICHEFSKI, MSN, MBA, RN, PMH-BC, NEA-BC, as chief nursing officer.

Kichefski comes to Bradley Hospital from the Massachusetts Department of Mental Health (DMH) Dr. Solomon Carter Fuller Mental Health Center, a 60-bed inpatient psychiatric hospital affiliated with Tufts Medical School, where she served as director of nursing.

Prior to that, Kichefski worked as the director of nursing at the DMH Cape Cod and Islands Community Mental Health Center. Skilled in administration, operations, education, policy and quality initiatives, including workforce development standards and patient safety practices, she has also held nursing leadership roles at McLean Hospital in Belmont, Massachusetts, and Butler Hospital.

“Ms. Kichefski has dedicated her career to the advancement of high-quality, patient-centric care. We are very fortunate to have her as a member of the Bradley Hospital and Lifespan community, and look forward to the significant positive contributions she will bring to the organization,” said HENRY SACHS, MD, president, Bradley Hospital.

“It’s a thrill for me to have the opportunity to join Bradley Hospital, nationally and internationally known for the expert care it provides so many children and families, and to continue to build on the unique and cutting-edge psychiatric nursing care that is available here,” said Kichefski.

She obtained a bachelor of science in nursing from Rhode Island College, a master of science in nursing from the University of Texas at Tyler, and is pursuing a doctor of nursing practice at UMASS Medical School. She holds a faculty appointment at the Massachusetts College of Pharmacy and Health Services and has had appointments at Rhode Island College and the University of Rhode Island. She is an active member of the American Psychiatric Nurses Association (APNA), where she serves as treasurer and board member.
Appointments

Dapaah-Afriyie, DeSanto-Madeya and Kydd join HopeHealth board of directors

PROVIDENCE – HopeHealth, a regional leader in home care, palliative and hospice care, recently announced that three new members are joining its board of directors:

KWAME DAPA AH-AFRIYIE, MD, MBA, FAC, director of hospital medicine at The Miriam Hospital

SUSAN DESANTO-MADEYA, PhD, APRN-CNS, FAAN, Miriam Weyker Endowed Chair for Palliative Care, University of Rhode Island (URI) College of Nursing

AUDREY E. KYDD, partner, The Gemini Group

The new members bring decades of leadership in medicine, education and organizational strategy to HopeHealth’s board of directors. They join 24 existing members in strategically advising HopeHealth’s home care, palliative and hospice care across Rhode Island, Greater Boston and southeastern Massachusetts.

“Our board of directors is made up of individuals who are not only brilliant and impressive healthcare leaders, but who are personally dedicated to HopeHealth’s mission of dignified, compassionate care. We’re honored to count Dr. Dapaah-Afriyie, Dr. DeSanto-Madeya and Audrey Kydd among this group,” says HopeHealth Board Chair, Vince Mor, PhD.

In addition to founding and now directing the hospitalist program at The Miriam Hospital, Dr. Dapaah-Afriyie was also instrumental in establishing the hospitalist program at Newport Hospital. He is a professor of medicine (clinical educator) at The Warren Alpert Medical School of Brown University, and a senior fellow in the Society of Hospital Medicine. In 2022, he was elected to lead the Rhode Island Chapter of the American College of Physicians.

Dr. DeSanto-Madeya is the Miriam Weyker Endowed Chair for Palliative Care at URI’s College of Nursing. She has spent much of her career focusing on researching palliative and end-of-life care, with the goal of improving quality of life and quality of care for persons living with serious illness and their families. She studies inequities in serious illness care and improving a patient’s final days through goal-concordant prescribing and end-of-life care.

Prior to becoming partner at the consulting firm, The Gemini Group, Kydd served as the Director of Administration for the Center for Gerontology and Healthcare Research at Brown University’s School of Public Health, where she led a successful research center with increasing impact; strengthening programming and deepening strategic organizational partnerships. Her expertise has included operations, fiscal management, research administration, and human resources, among many other areas. ❖
OBITUARIES

DUANE SCOTT BISHOP, MD, passed away on February 7, 2023. He attended the University of British Columbia and the University of Alberta Medical School, graduating in 1965.

He completed a residency in psychiatry at McMaster University. After being awarded a one-year fellowship in England, he returned to Canada. In 1978, he moved to Rhode Island to become the clinical director of Butler Hospital and an associate professor of psychiatry at Brown University.

He went on to work at Rhode Island Hospital as a psychiatrist specializing in rehabilitation and then at Southern New England Physicians Associates [SNEPA], where he served as president and CEO. His career produced over 200 peer-reviewed articles and contributions to many books and articles with his research and clinical focus being on family relationships, chronic illness, and disability.

After his diagnosis with multiple system atrophy (MSA), he continued to support family and friends, describing to them the mechanisms of his own disease and how it affected him. He continued with his gardening, sculpting, traveling and golfing throughout much of his time with MSA, demonstrating a determination to slow down disease progression that was an inspiration to all.

He is survived by his wife, Jody, and children Diana [François], Michele [Dan] and Kyle [Cindy], seven grandchildren, and two siblings, Kathleen and Howard [Sharon], in British Columbia, Canada.

Donations in his memory can be made to Hope Health Hospice & Palliative Care, https://www.hopehealthco.org.

ARLONDAVID PODIS, MD, 82, of Portsmouth, passed away unexpectedly on December 2, 2022. He was the husband of Judith [Balen] Rosenbaum, with whom he shared 58 years of marriage.

Dr. Rosenbaum served as a surgeon and lieutenant commander for the United States Public Health Service during the Vietnam War, and later, as a general surgeon at The Miriam Hospital for more than 30 years. While there, he was also a beloved clinical assistant professor of surgery at the Brown University’s medical school, where he won the Distinguished Teacher Award.

During his own schooling, Dr. Rosenbaum graduated as salutatorian from both Ursinus College and the Jefferson Medical College at Thomas Jefferson University. In medical school, he became a member of the Alpha Omega Alpha Medical Honor Society, and won the Surgery and Obstetrics & Gynecology prizes upon graduation.

Later, during his medical residency, Dr. Rosenbaum helped develop the heart-lung pump used in open-heart surgeries and created a synthetic aortic seal.

Along with his wife, Dr. Rosenbaum is survived by his three children: Marc Podis and his wife, Dianne, of Florida; Lisa Farmer and her husband Jeff, of Florida; and Jennifer Podis and her partner, Steve Lewis, of North Carolina and several grandchildren.

Contributions in his memory may also be made to Rhode Island Philharmonic Orchestra & Music School, 667 Waterman Avenue, East Providence, RI, 02914.

Contributions in his memory may be made to Hope Health Hospice Hospice & Palliative Care, https://www.hopehealthco.org.

Contributions in his memory may be made to the Dr. Alan D. Podis Education Fund, The Miriam Hospital Foundation, PO Box H, Providence, RI, 02901. The fund will be used to support urology residents or fellows in their research, conferences and other related activities.

Contributions in his memory may also be made to Hope Health Hospice Hospice & Palliative Care, https://www.hopehealthco.org.

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