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RHODE ISLAND MEDICAL JOURNAL

SPOTLIGHT: The Louise Wilcox ALS Clinic at Rhode Island Hospital: 25th Anniversary (1999–2024)

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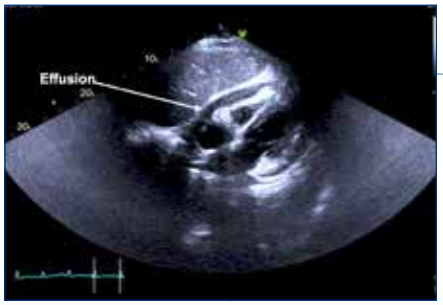

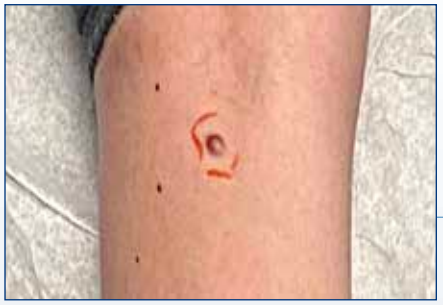

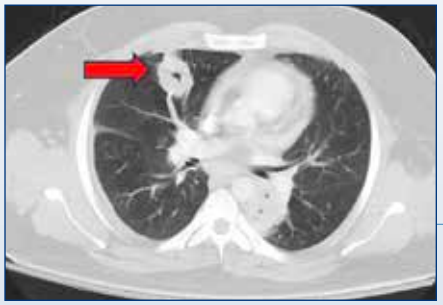

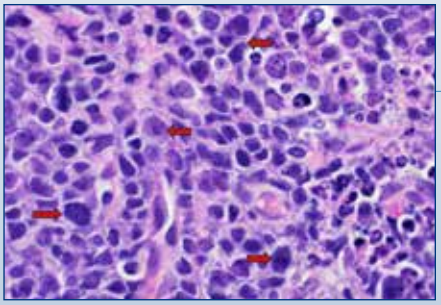

CASE REPORTS

IMAGES IN MEDICINE

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Blast from the Past: Acute Myeloid Leukemia Presenting with Cardiac Tamponade

JESSICA M. GONZALEZ, MD; GABRIEL LOWENHAAR, MD; ANSHUL PARULKAR, MD; ARI PELCOVITS, MD

ABSTRACT

Acute Myeloid Leukemia (AML) is a life-threatening illness that requires prompt diagnosis and often immediate treatment. It can present in a variety of manners but most commonly is associated with fevers, fatigue, shortness of breath, or infection. Extramedullary leukemia is a less common finding upon initial presentation, but includes dermatologic manifestations, including leukemia cutis, and rarely, large mass-like presentations known as myeloid sarcomas. While leukemic infiltration of organ systems is a well-described phenomenon, cardiac tamponade is a rare form of presentation. Herein we describe a 58-year-old man with a recent hospitalization for idiopathic cardiac tamponade who re-presented to the hospital with worsening dyspnea and fevers. He was found to have a recurrent pericardial effusion with features concerning for tamponade, as well as worsening thrombocytopenia and macrocytic anemia. Bone marrow biopsy revealed 24% myeloblasts, confirming the diagnosis of AML. Notably, his cardiac symptoms improved with treatment of his leukemia. To our knowledge, this is one of only a few cases of AML with cardiac tamponade as the initial presentation.

KEYWORDS: AML, Cardiac tamponade, TP53 mutation AML

INTRODUCTION

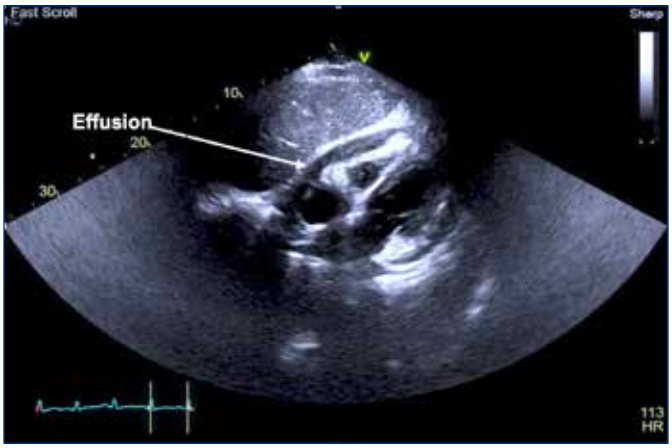
Acute Myeloid Leukemia (AML) is the most common acute leukemia in adults.[1,2] The pathophysiology of AML involves the clonal expansion of myeloid progenitor cells, also known as immature blast cells; these blast cells multiply in the blood and bone marrow leading to bone marrow failure.[1] Risk factors for the development of AML include hematologic disorders such as myelodysplastic syndrome, myelofibrosis, and other myeloproliferative neoplasms and aplastic anemia.[1] Smoking, exposure to radiation, and prior chemotherapy are also risk factors.[1] In the US, the incidence is approximately 20,000 cases per year.[1,2] Clinical manifestations vary but many patients present with signs of bone marrow failure and resulting cytopenias leading to weakness, pallor, shortness of breath, chest tightness, and fatigue.[3] Large pericardial effusions occur in less than 0.5% of all patients with AML.[4] Diagnosis of AML is performed via bone marrow aspiration and biopsy and is confirmed by the presence of greater than 20% blast cells in the peripheral blood or bone marrow, or unique cytogenetic changes on molecular pathology.[5] Induction therapy, consolidation therapy with chemotherapeutic drugs and stem-cell transplantation are treatment strategies for patients with AML.[6] Typical induction chemotherapeutic regimens use combinations of cytarabine and anthracycline-based therapy.[6] Due to the cardiotoxic adverse effects of anthracyclines, baseline evaluation of cardiac function must be performed.[7]

Despite advancements in prognostic markers, treatment outcomes remain poor.[1] Prompt diagnosis and initiation of treatment is of paramount importance, particularly in patients with life-threatening complications due to their leukemia. Cardiac tamponade as the initial presentation of AML is rare and has only been described in a few case reports thus far.[4] Large effusions causing tamponade have been associated with increased mortality. In patients with atypical presentations, diagnostic strategies allowing for rapid identification and treatment initiation are not well described.

CASE PRESENTATION

A 58-year-old man with a recent hospitalization for cardiac tamponade and subsequent pericardiocentesis with no abnormal cytology presented with worsening dyspnea, fever, and tachycardia. He had been hospitalized approximately a month before for myopericarditis. During that hospitalization he had a pericardiocentesis that had no abnormal immunologic, microscopic, infectious studies, and non-diagnostic flow cytometry. He also had been found to have anemia and thrombocytopenia. He was begun on prednisone and colchicine and discharged with outpatient follow-up. He began experiencing progressive dyspnea and fevers and he returned to the hospital. In the emergency department, a bedside echocardiogram revealed a moderate, circumferential pericardial effusion with thickened pericardium and limited free-flowing fluid. Findings were consistent with pericardial constriction with no overt tamponade physiology (**Figure 1**). However, given his deteriorating clinical status, sampling of the pericardium was deferred, since infectious etiologies were felt to be unlikely as the source of his effusion. It was decided that the risks of a repeat pericardiocentesis outweighed the benefits.

Figure 1. Transthoracic Echocardiogram Subxiphoid view showing moderate, circumferential pericardial effusion.



Laboratory studies revealed worsening thrombocytopenia with a platelet count of 8g/dL and macrocytic anemia 7.7g/dL with MCV 105.7fL, and occasional myeloblasts of 4% were noted on the peripheral smear. He developed tachypnea, tachycardia and hypotension and was treated with cefepime and vancomycin for presumed sepsis. Chest imaging revealed pleural effusions and he subsequently had an unrevealing diagnostic thoracentesis. His dyspnea worsened and he developed acute hypoxic respiratory failure and required a therapeutic thoracentesis followed by rapid improvement of his shortness of breath. In the intensive care unit, he had a bone-marrow biopsy that revealed 24% myeloblasts, confirming the diagnosis of AML. He was found to have a complex karyotype and high VAF TP53 (variant allele frequency tumor suppressor gene) mutation. Given a lack of improvement with antibiotics and no infectious or alternative source identified for his rapid deterioration it was decided to emergently initiate chemotherapy with cytarabine and daunorubicin for treatment of his AML as the presumed cause of his clinical syndrome. The patient's clinical status rapidly improved after initiation of chemotherapy, suggesting a systemic inflammatory response to his underlying leukemia, as the likely etiology of his overall clinical deterioration on presentation, as well as the likely etiology of his pericardial and pleural effusions. He received consolidation therapy with high-dose cytarabine (HIDAC) and completed three cycles. He was evaluated for allogenic bone marrow transplant (BMT) but had a high risk of relapse because of a TP53 mutation found in his myeloblasts.

A follow-up transthoracic echocardiogram (TTE) was performed a month after his diagnosis and showed preserved systolic function and resolution of his pericardial effusion, suggesting that chemotherapy eliminated the myeloblasts provoking the pericardial effusion. Unfortunately, within a year of his diagnosis, he was hospitalized multiple times and eventually elected hospice care.

DISCUSSION

This patient's presentation illustrates that patients with acute myeloid leukemia may have life-threatening complications and the need for life-saving chemotherapy. His likely pericardial involvement was atypical. Five similar cases in the published literature included four cases in which pericardial fluid cytology showed leukemic cells. Pericardial cytologic evidence of myeloblasts, however, has been found to have variable sensitivity,[8] with several studies showing the detection of malignancy from pericardial sampling, ranging from 53–92%.[8-10] Given this and our patient's deteriorating clinical status, pericardiocentesis was not performed during his second admission when he presented with a recurrent pericardial effusion.

Given the uncommon nature of this presentation, specific treatment approaches for leukemic effusions have not been elucidated, and the standard of care remains high-dose induction chemotherapy. Literature review shows patients with similar presentations were initiated on chemotherapy and achieved initial improvements in their clinical status. In two cases, patients were begun on cytarabine and daunorubicin, as in our case.[4,11] In one of the other cases with negative cytology, the patient was initiated on chemotherapy with decitabine, high-dose corticosteroids and then continued on colchicine for four months. He had improvement of his pericardial effusion following therapy.[8] Our patient was originally treated with corticosteroids and colchicine prior to the diagnosis of malignancy as mentioned above. The efficacy of using colchicine, corticosteroids, or anti-inflammatory medications for treatment of malignant pericardial effusions was analyzed in a retrospective study.[12] This study showed that use of colchicine reduced the need for further interventions and was associated with overall less mortality. Corticosteroids and anti-inflammatory agents did not show significant benefit.[12] Taking these findings into consideration, colchicine may be an effective agent to consider for patients with malignant effusions. As mentioned in our case presentation, our patient also had resolution of his pericardial effusion following therapy. Besides medical therapy, many of these patients ultimately are evaluated for BMT.[4,8]

Our patient had a TP53 mutation which only occurs in 10–15% of AML cases.[13] The presence of this mutation has been associated with the worst AML outcomes.[13] Unfortunately, the majority of patients with this mutation eventually relapse.[13] Their median survival rates range between 4–6 months.[14]

AML presenting with cardiac tamponade is rare. This case shows the importance of having a high index of suspicion for extramedullary manifestations of AML and the importance of rapidly initiating workup and treatment. Our case also highlights the potential morbidity associated with an associated systemic inflammatory disorder. Patients may require emergent initiation of treatment without determination of a definitive cytologic etiology.

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Disclosures

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Sotorasib as Fourth-Line Treatment in Pancreatic Cancer: A Case Report and Literature Review

IFEANYI DAVID ONUKOGU, MD; GEORGIO MEDAWAR, MD; YASHVIN ONKARAPPA MANGALA, MD; RITESH RATHORE, MD

ABSTRACT

The molecular pathogenesis of exocrine pancreatic cancer involves mutations K-RAS, TP53, CDKN2A, and SMAD4. The KRAS oncogene leads to constitutively active tumor cell proliferation and is present in 90% of unresectable or metastatic pancreatic adenocarcinomas. Of these, the G12C variant of K-RAS genes accounts for 1–2% of mutations.

A 65-year-old woman initially diagnosed with T3N0M0 pancreatic adenocarcinoma, underwent six cycles of neo-adjuvant chemotherapy with mFOLFIRINOX followed by Whipple procedure. Her pathological stage was T4N2. She then received adjuvant mFOLFIRINOX but unfortunately her disease progressed through multiple lines of chemotherapy. Molecular analysis by Next Generation Sequence(NGS) panel revealed KRAS G12C mutation. Based on this mutational status, she was started on Sotorasib to which she had clinical response lasting for about 11 months prior to disease progression.

Off-label use of Sotorasib as fourth-line treatment in our patient with KRAS G12C mutated pancreatic cancer was efficacious and relatively well tolerated.

KEYWORDS: KRAS mutation, targeted therapy, Sotorasib, Pancreatic cancer

INTRODUCTION

Pancreatic cancer is the fourth leading cause of cancer-related deaths in the United States, in both men and women.[1] It is caused by a series of inherited and acquired mutations that lead to interruption of signal transduction, leading to the arrest of G1/S cell cycle.[2] KRAS (Kirsten Rat Sarcoma Virus) is a GTPase-mediated cellular signal transducer protein that plays a key role in the activation of the mitogen-activated protein kinase (MAPK) pathway resulting in intranuclear gene activation that leads to cell proliferation and growth.[2,3] Studies have shown that mutation in KRAS results in hyper-activation of KRAS, thus resulting in constitutively active MAPK signaling. This causes unregulated cell proliferation, which eventually results in cancer development.[3]

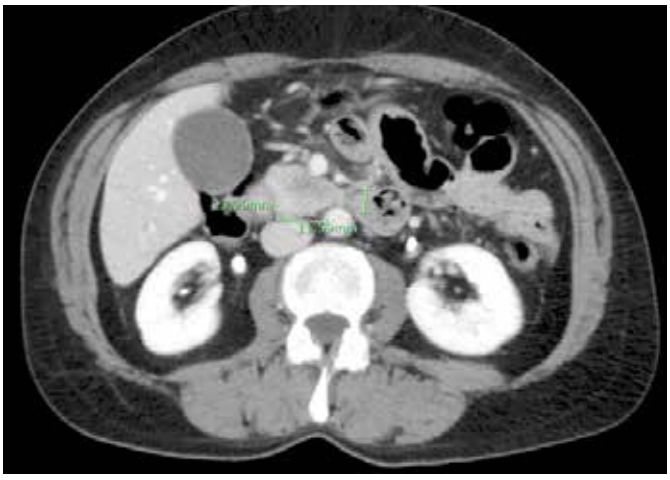
KRAS oncogene was first discovered in the 1980s and is the most frequently mutated oncogene in human solid cancers.[4,5] In a retrospective study of 79,004 patients with various cancers who underwent next-generation sequencing, the KRAS mutation was present in 13,758 patients and was more prevalent in females, patients older than 60 years of age, and those with a history of smoking.[6] KRAS G12C, a subtype of KRAS, was seen in 11.9% of cases while other KRAS variants were seen in 88.1% of cases.[6] The KRAS G12C mutation was most prevalent in patients with non-small-cell lung cancer (9%), appendiceal cancer (3.9%), colorectal cancer (3.2%), tumor of unknown origin (1.6%), small bowel cancers (1.43%), and pancreatic cancers (1.3%).[6] Decades of unsuccessful research attempts for a KRAS-targeted therapy deemed it a non-druggable mutation until recent advances that led to the discovery of mutant-specific KRAS-G12C inhibitors, Adagrasib and Sotorasib.[4] Targeting KRAS-G12C mutated pancreatic adenocarcinoma is a newly explored area.

CASE PRESENTATION

A 65-year-old woman with no past medical history presented in October 2019 to the emergency department with nausea and vomiting and was diagnosed with acute pancreatitis for which conservative management was initiated.

A subsequent abdomen/pelvis CT scan showed 1.2 x 2.3 ill-defined hypodensity in the uncinate process of the pancreatic head **(Figure 1).** This finding was confirmed by an

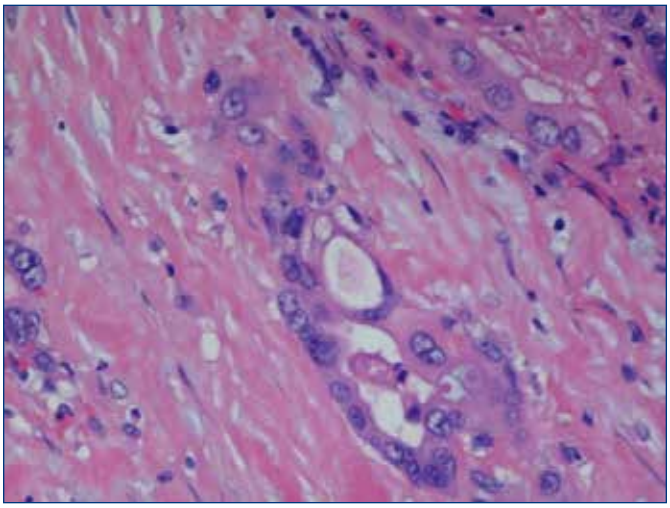
Figure 1. Initial abdomen/pelvis CT scan
(10/10/19) showing an ill-defined hypodensity in the uncinate process of the pancreatic head up to 1.2 x 2.3 cm with pancreatic ductal dilatation.



abdomen MRI and the portal vein, splenic vein, superior mesenteric vein (SMV), superior mesenteric artery (SMA), and common hepatic artery were patent. Chest CT scan showed only a 4 mm right apical lung nodule, which was likely benign. An Endoscopic Retrograde Cholangiopancreatography (ERCP) with biliary sphincterotomy and stent placement was performed. Endoscopic US-guided biopsy of the pancreatic head mass showed crowded clusters of malignant glandular cells with enlarged nuclei, prominent nucleoli, and irregular nuclear membrane, consistent with pancreatic adenocarcinoma. The initial CA 19-9 level was 611.9 U/mL.

In December 2019, the patient began six cycles of neoadjuvant chemotherapy with mFOLFIRINOX for her stage IIA borderline resectable pancreatic head adenocarcinoma. Restaging CT imaging in March 2020 showed stable disease and in April 2020, she underwent a Whipple procedure with R1 resection. The tumor was found to involve the SMV, so the SMV was resected and reconstructed (with a harvest of the left proximal saphenous vein). Pathology review showed the stage as pathological T4N2 (5/19 positive lymph nodes) well-differentiated adenocarcinoma with positive SMA margin **(Figure 2).** The tumor involved peripancreatic tissue, distal bile duct, ampulla, duodenal wall, vascular lumen attached, and superior mesenteric vein. Mutational analysis showed wild-type BRCA 1 and 2 and normal immunohistochemistry expression of MLH1, MSH2, MSH6, and PMS2. The patient was considered to have clinical stage 3 disease with positive margins at resection, so the decision was made to start adjuvant concomitant chemoradiotherapy utilizing oral capecitabine.

Figure 2. (H&E stain, 40x magnification)
The glands have simple architecture and are lined by malignant cuboidal epithelium composed of large cells with pleomorphic nuclei and abundant densely eosinophilic cytoplasm, consistent with chemotherapy cytopathic effect.



She was then transitioned to adjuvant FOLFIRINOX and completed six more cycles. Repeat CT imaging in October 2020 showed no local recurrence and the CA 19-9 was down to 4.5 U/mL. She was placed on regular imaging surveillance up until May 2021, when CA19-9 went up to 126.7 U/mL. Imaging showed new bilateral lung nodules, (largest 2.4 cm), and increased soft tissue fullness in the lateral aspect of the SMA and aorta with obliteration of the superior mesenteric vein (local regionally as well as distant recurrence of her pancreatic cancer). The patient was started on gemcitabine and nab-paclitaxel palliative chemotherapy. However, imaging after eight cycles showed progression of the disease with the Ca 19-9 level increasing to 336 U/mL. The patient was next transitioned to FOLFIRI (with liposomal irinotecan) in January 2022 and after four cycles were administered, there was still disease progression on CT imaging and CA 19-9 increasing to 540 U/mL **(Figure 3).** Next-generation sequencing of the pancreaticoduodenectomy specimen revealed presence of KRAS G12C mutation. Subsequently, in May 2022, the patient was started on oral Sotorasib 960 mg once daily. A repeat CT scan after three months on therapy in July 2022 showed marked improvement in the pulmonary nodules and decreased size of the pancreatic mass along with a decreased in the CA 19-9 level to 19.9 U/mL. Due to grade 3 diarrhea, the Sotorasib was dose reduced to 720 mg daily. Follow-up CT imaging in September and December 2022 showed sustained partial response.

Unfortunately, in March and April 2023, the patient lost response with repeat CT chest/abdomen/pelvis with IV contrast from 03/2023 demonstrating disease progression with multiple pulmonary nodules, new liver lesions and worsening soft tissue mass involving pancreatic head and uncinate process with infiltration through the retroperitoneum encasing SMA and right hepatic artery. The treatment and response summary are summarized in **Table 1.**

Figure 3. (H&E stain, 20x magnification)
Metastatic pancreatic ductal adenocarcinoma to regional lymph node.

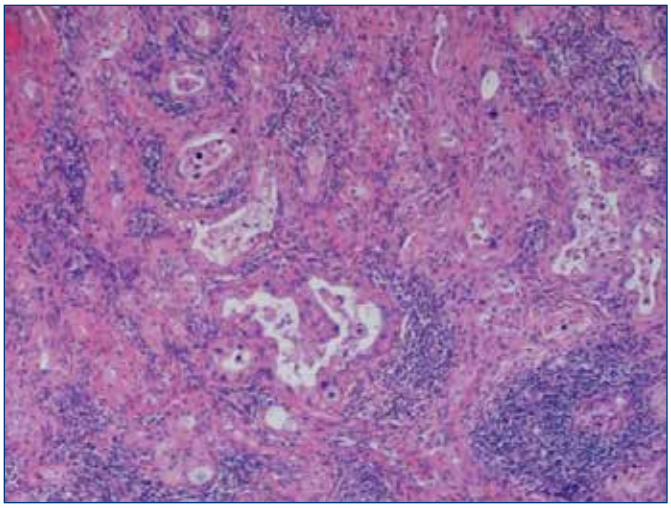


Table 1. Our patient's treatment/response summary

Pre-treatment CA 19-9 (U/mL)	Treatment regimen	Duration of treatment	Lowest CA 19-9, on treatment (U/mL)	Duration of response
11/08/2019: 611.9	Perioperative FOLFIRINOX (6 cycles)	12/2019–10/2020 (surgery after 3 cycles)	01/04/2021: 7.5	15 months
05/05/2021: 126.7	Gemcitabine + Nab-paclitaxel (8 cycles)	05/2021–12/2021	10/05/2021: 15.6	~8 months
01/03/2022: 336.2	FOLFIRI (2 cycles)	01/2022–02/2022	01/25/2022: 540.2	No response.
03/09/2022: 255.7	Sotorasib	5/2022–03/2023	7/14/2022: 19.9	~11 months

Figure 4. Abdomen-Pelvis CT imaging

Pre-treatment with Sotorasib (5/2/2022): Increased size of ill-defined soft tissue mass involving the pancreatic head and uncinate process, measuring approximately 3.4 x 2.4 x 4.8 cm.

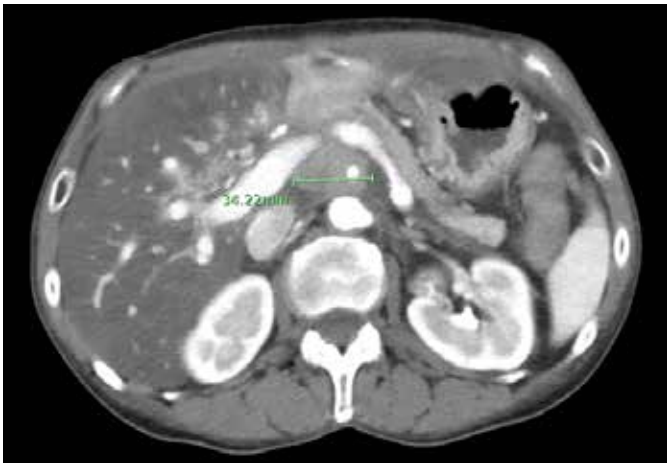
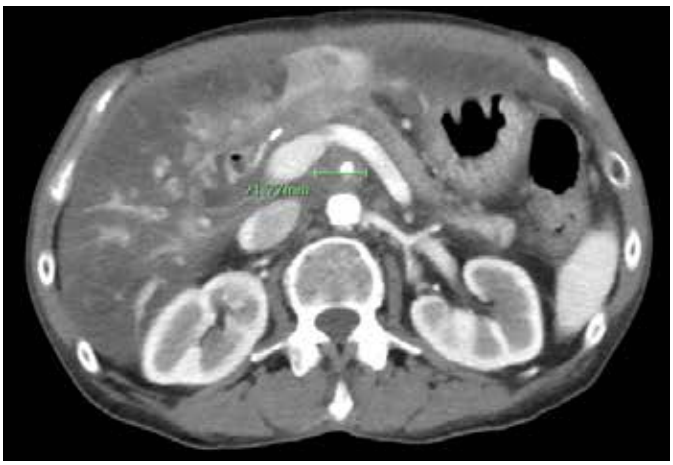


Figure 5. Abdomen-Pelvis CT imaging

Post-treatment with Sotorasib (7/7/2022): Decrease in the size of the ill-defined soft tissue mass in the pancreatic head/uncinate size measuring 2.2 x 2.1 x 4.3 cm.



DISCUSSION

KRAS is the most frequently mutated oncogene that occurs in solid malignancies, most commonly non-small cell lung cancer (NSCLC), colorectal cancer (CRC), and pancreatic ductal adenocarcinoma (PDAC).[7]

The KRAS G12C mutation occurs in approximately 1 to 2% of pancreatic cancers.[5] Physiologically, this point mutation favors the active form of the KRAS protein (GTP-bound KRAS) that increases the proliferation and growth of tumor cells. The mutated cysteine is located next to a pocket (P2) of the switch II region. This pocket is present only in the inactive form of KRAS (GDP-bound KRAS) and was used to develop specific, irreversible KRAS G12C small molecule inhibitors.[8] These drugs lock the KRAS G12C in the inactive GDP-bound state and demonstrated anti-tumor activity in pre-clinical setting.[8,9]

CodeBreak100 and KRYSTAL-1 trials are two large, multicenter, open-label basket trials that investigated the role of 2 KRAS G12C inhibitors Sotorasib and Adagrasib, respectively, in metastatic solid tumors harboring KRAS G12C mutation. In the CodeBreak100 trial, among advanced NSCLC patients, an ORR of 36% median duration of response was 10.0 months was observed with the use of Sotorasib.[10] In the KRYSTAL-1 trial, Adagrasib therapy in advanced in patients with KRAS G12C mutated NSCLC resulted in a median progression-free survival of 6.5 months and a median overall survival of 12.6 months with a median duration of response of 8.5 months.[11] Based on these results Sotorasib (960 mg once daily) and Adagrasib (600mg twice daily) received accelerated FDA approval for adult patients with KRAS G12C mutated locally advanced or metastatic NSCLC, in patients who have received at least one prior systemic therapy.

Early promising data on pancreatic cancer from these trials were recently reported. In the KRYSTAL-1 trial, Bekaii-Saab et al reported that of the 12 enrolled patients with KRAS G12C mutated pancreatic cancer, disease control rate (DCR) was seen in 100% with 50% of patients having at least a partial response (PR) with a median progression-free survival of 6.6 months.[12] Furthermore, an abstract by Strickler et al presented at the American Society of Clinical Oncology 2022 meeting showed that of 38 patients with KRAS-G12C mutated pancreatic cancer treated with Sotorasib in the CodeBreak100 trial, the disease control rate was 84.2% with an overall partial response rate of 21%, median progression-free survival of 4 months, and the median overall survival of 7 months with a median follow-up of 16.8 months.[7]

Concerning the safety profile, in the CodeBreak 100 trial, the safety analysis done on the pancreatic cancer subgroup showed that the most common any-grade adverse events

were abdominal pain (37%), diarrhea, and nausea (24% each). The most common grade 3 events were diarrhea and fatigue which were each reported in 5.3% and there were no grade ≥ 4 toxicities.[7]

In our case, the patient had a robust partial response to Sotorasib (960 mg daily) used as fourth-line treatment. The dose was reduced one level to 720 mg daily due to grade 3 diarrhea, a common side effect of this drug as mentioned above. The response duration lasted an estimated 11 months before developing disease progression with metastasis to lungs and liver. She was then referred for clinical trial.

CONCLUSION

There is a high unmet need for patients with metastatic pancreatic adenocarcinoma who have progressed through approved first and second lines of treatment. The current subsequent lines of therapies have not shown survival benefit in these patients. However, early data from the CodeBreak100 trial show that patients harboring KRAS G12c mutation derive clinical benefit with Sotorasib use.

In this report, we share the remarkable clinical benefit observed with specific targeted therapy approach using Sotorasib in stage IV pancreatic adenocarcinoma with KRAS G12c mutation, which reinforces the need to evaluate next-generation sequencing on all these patients to detect potentially targetable activating driver mutations. The treatment response in our patient was approaching one year, which is significantly higher than the median of 6–8 months noted in trials.

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Intradermal Syringocystadenoma Papilliferum on the Popliteal Fossa: A Rare Dermal Variant in an Atypical Location

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ABSTRACT

Syringocystadenoma papilliferum (SCAP) is a benign adnexal tumor commonly found on the scalp and face, and often associated with nevus sebaceous, with about half of cases appearing in early childhood. SCAP exhibits cystic invaginations with papillary structures and a double-layered glandular epithelium linked to the epidermal surface and stromal plasma cells. We are reporting a rare instance of intradermal SCAP in a 55-year-old male. He sought evaluation for a long-standing asymptomatic dark-pink papule in his left popliteal fossa, measuring 0.7 x 0.5 x 0.4 cm. A shave biopsy revealed papillary dermal fibrosis, glandular epithelium with apocrine secretion, and papillary projections without an epidermal connection. Infundibulofollicular keratinization was observed, along with stromal plasma cells. The patient chose local excision as the treatment option. This case highlights the rarity of intradermal SCAP, especially in the left popliteal fossa, with only one other reported case in the literature.

KEYWORDS: Papillomatous lesions; intradermal; adnexal tumor; syringocystadenoma papilliferum

INTRODUCTION

SCAP is a benign adnexal tumor with endophytic and exophytic growth patterns. SCAP is often associated with benign adnexal lesions, such as nevus sebaceous and apocrine nevi. It is commonly located on the scalp, followed by the face. Typically, SCAP presents as a solitary gray to dark brown papillomatous plaque ranging from 0.5 to 16 cm. It occurs equally in both sexes between 5 and 65 years old, with half of the cases present at birth or early childhood.[1] Classical histopathological features include cystic invaginations with papillary architecture communicating with the epidermal surface and lined by a double layer of glandular epithelium associated with stromal plasma cells.[2]

Herein, we present a solitary isolated intradermal SCAP in a 55-year-old male at the popliteal fossa.

CASE REPORT

A 55-year-old male with a medical history of a right eyelid basal cell carcinoma and metastatic lung adenocarcinoma presented with a dark pink papule on his left popliteal fossa. The papule had been asymptomatically present for several years and has decreased in size following chemotherapy. He denied any congenital, acquired lesions or trauma in the lesion's area.

Physical examination revealed a 0.7 x 0.5 x 0.4 cm single tan-red to tan-brown papule on the left popliteal fossa (**Figures 1,2**). A shave biopsy demonstrated papillary dermal fibrosis with a cystic invagination in the mid-dermis lined by glandular epithelium with apocrine secretion and papillary projections. A portion of the cyst lining demonstrated infundibulofollicular keratinization. The stroma contained intervening plasma cells (**Figures 3,4**). Considering the low potential of malignant transformation of SCAP, the patient agreed to local excision.

Figures 1,2. Tan-red to tan-brown papule at the left popliteal fossa.

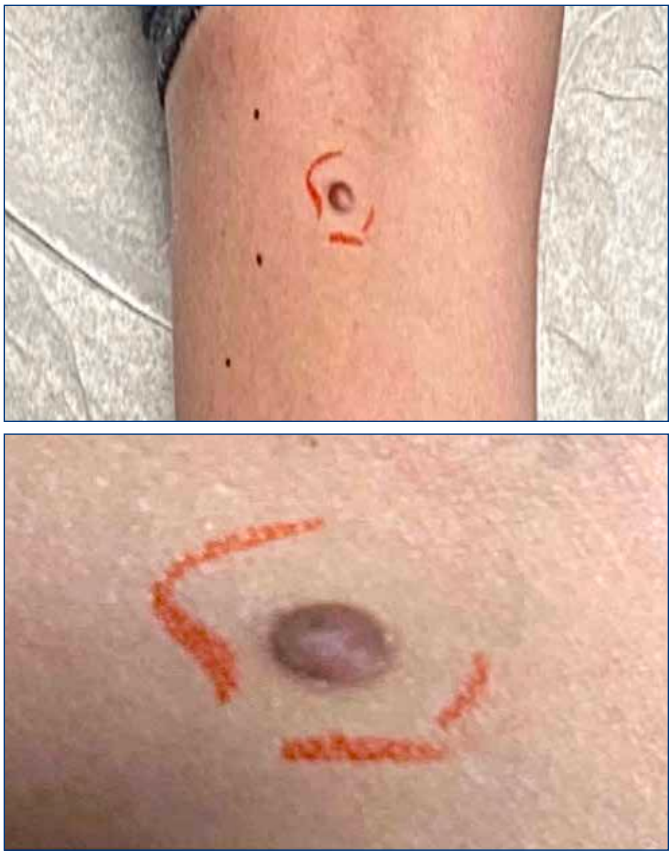


Figure 3. Hematoxylin and eosin (H&E) stained shave biopsy of the left popliteal fossa, (40x), showing papillary architectures of the adnexal tumor without epidermal connection.

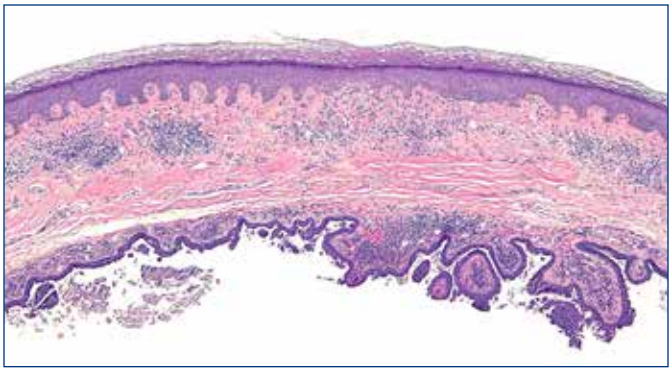
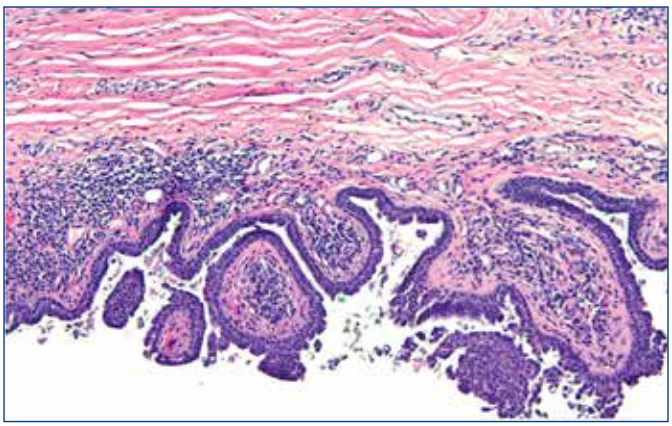


Figure 4. H&E stained shave biopsy of the left popliteal fossa, (100x), showing a polypoid-appearing proliferation of bland-appearing glandular epithelium overlying dermal papillae with an inflammatory infiltrate composed of lymphocytes and numerous plasma cells.



DISCUSSION

SCAP is an uncommon skin adnexal tumor of sweat gland origin that mostly requires biopsy for diagnosis. The tumor usually presents as a skin-colored, gray, pink to dark brown, hairless, firm nodule, or papule; however, other clinical morphologies such as verrucous, papillary, hyperkeratotic, or fleshy excrescences have also been described.[1] Occasionally, SCAP shows central umbilication with a small fistula draining serous fluid.[1]

Though the origin of SCAP is uncertain, some studies have suggested a hamartomatous origin that could arise from apocrine glands, eccrine glands, or both undifferentiated pluripotent stem cells.[3-4] A study demonstrated that one-third of SCAP cases develop within a nevus sebaceus, a congenital hamartoma histologically characterized by a complex and abnormal proliferation of epidermal and adnexal structures.[5]

This case is unique for several reasons. Most SCAP cases occur during childhood,[1] yet our patient is an adult. Most of the reported cases in the literature, save for one,[9] have an observed epidermal connection. While SCAP affects the scalp, followed by the face, our case was on the left popliteal fossa. Of the few reported lower extremities cases (**Table 1**),[3,4,6,9] only one has been reported intradermal and located on the thigh.[9]

Table 1. Reported cases of focal epithelial hyperplasia in individuals of Caribbean descent

Report	Age and Sex	Past Medical History	Location	Variants	Connected to the Epidermis or Intradermal
Malhotra et al,[3] 2009	28M	Not significant	Thigh	Liner and segmental	Connected with the epidermis
Agrawal R et al,[4] 2013	24M	Not significant	Thigh	Papules and nodules	Connected with the epidermis
Vinod K et al,[6] 2013	18M	Not significant	Lower leg	Multiple papulo-nodular lesions	Connected with the epidermis
Noriko Y et al,[7] 2004	26M	Not significant	Lower leg	Papule	Connected with the epidermis
Kouki C et al,[8] 2022	56W	Not significant	Lower leg	Warty nodule	Connected with the epidermis
Yamamoto et al,[9] 2008	46F	Not significant	Thigh	Nodule	Intradermal

Abbreviations: F, female; M, male.

Histopathology, SCAP typically reveals cystic invaginations of the infundibular epithelium projecting into the dermis that communicates with the epidermal surface with or without epidermal erosions and serum crust. The superficial aspects are lined by squamous epithelium transitioning to glandular epithelium. These invaginations have papillary architecture lined by glandular epithelium composed of flattened to cuboidal myoepithelial basal layer underneath the luminal layer of columnar cell that shows apocrine morphology. The stroma consists of fibrovascular connecting tissue with numerous plasma cells admixed with some lymphocytes.[10] However, this case demonstrated mid-dermal cystic invagination lined by glandular epithelium with apocrine secretion and papillary projections. Infundibulofollicular keratinization was observed on a portion of the cyst lining and numerous intervening plasma cells within the stroma.

Differential diagnoses for intradermal SCAP are Hidradenoma Papilliferum, which presents at the perineum or vulva of women and lacks plasma cells, and Tubular Apocrine Adenoma, which also lacks plasma cells.

Genetically, a study noted that a subset shows loss of heterozygosity for *PTCH1 (PTCH)* and *CDKN2A* (p16),[11] suggesting a role for loss of suppressor genes in some cases.

HRAS and *BRAF V600* mutations have also been reported in many cases.[12] SCAP is usually curable with a complete surgical excision with a meager rate of recurrence or malignant transformation.

In conclusion, we present a case of intradermal SCAP at the left popliteal fossa in an adult male treated with surgical excision. Cases of intradermal SCAP exceedingly rare, with only one other case reported in the literature.

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A Severe Case of ANCA-Associated Small Vessel Vasculitis

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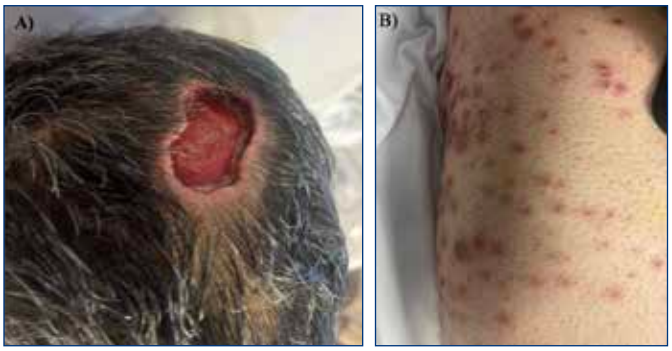
A 31-year-old male with a past medical history of asthma, a recent tooth abscess, and an enlarging scalp wound that grew MSSA and didn't improve with debridement or antibiotics presented with a two-week history of fevers, arthralgias, scant hemoptysis, abdominal pain and a new purpuric rash and associated fingertip discoloration.

Vital signs at triage were significant for a new oxygen requirement of 4 liters. Physical examination was notable for a deep ulcerated scalp lesion (**Figure 1a**), bilateral non-painful scleral injection, numerous small palpable purpuras on the lateral thighs (**Figure 1b**), and splinter hemorrhages of the fingernails.

Figure 1. Physical manifestations of ANCA-associated granulomatosis polyangiitis. [**A**] punched-out ulcer of the scalp [**B**] palpable purpura across the lateral region of the right thigh.



The initial laboratory workup is noted in **Table 1**. CT of the chest showed multiple bilateral pulmonary parenchymal nodules and worsening airspace opacities, some with central cavitation (**Figure 2**). Interferon-gamma release assay for tuberculosis was indeterminate; however, three sputum stains for acid-fast bacilli were negative, and blood cultures yielded no growth. A transthoracic echocardiogram revealed normal left ventricular function without evidence of valve disease or vegetation. The patient declined to have a transesophageal echocardiogram (TTE). His condition failed to improve despite empiric treatment with broad-spectrum antibiotics.

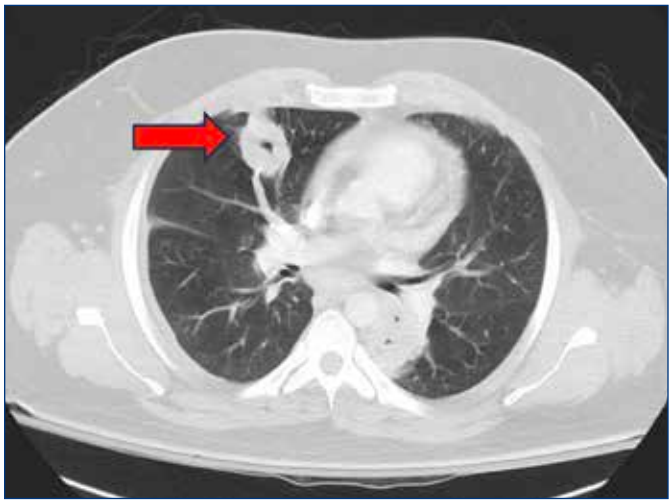
Additional laboratory workup revealed a positive anti-proteinase 3 (PR3) antibody index at 7.1 AI. Immunofluorescence testing for classic anti-neutrophil cytoplasmic antibodies (c-ANCA) was positive. Rheumatoid factor was also elevated at 99 U/mL. The anti-myeloperoxidase (MPO) antibody index was negative, as was the anti-glomerular basement membrane antibody index. CT of the abdomen and pelvis showed splenic infarct and bilateral wedge-shaped kidney hypodensities concerning for renal infarcts (**Figure 3**). A skin biopsy was obtained from the thigh rash, and the final pathology showed exuberant leukocytoclastic vasculitis involving post-capillary venules and medium-sized arteries. Although granulomas were not conspicuous, the findings were consistent with ANCA-associated vasculitis.

Table 1. Initial laboratory workup

Variable	Value	Reference Range
Hemoglobin	8.8 (L)	13.4–16.0 g/dL
Platelet count	562 (H)	168–382 x10exp9/L
White blood cell count	12.3 (H)	4.2–10.0 x10exp9/L
Absolute eosinophil count	0	0.0–0.4 x10exp9/L
Creatinine	0.59 (L)	0.64–1.27 mg/dL
Urinalysis	18 RBC/HPF, Protein: 30 mg/dL (H)	RBC: 0-3/HPF Protein: <10 mg/dL
ESR	120 (H)	<15 mm/hr
CRP	309 (H)	0.00–10.00 mg/L

*Lab values reveal leukocytosis, anemia, sub-nephrotic proteinuria, hematuria, elevated inflammatory markers, and normal eosinophil count. L=low, H=high.

Figure 2. Cavitary lesion located within the left lung space on CT chest.



A diagnosis of granulomatosis with polyangiitis (GPA) was made. Pulse-dose intravenous methylprednisolone was administered, with clinical improvement in respiratory symptoms, scleral redness, and pain. Despite treatment, the upper extremity digits developed progressive skin changes concerning for dry gangrene. Antiphospholipid antibody testing was negative. Several days later, a repeat CT of the abdomen and pelvis was obtained due to a significant hemoglobin drop and abdominal pain, which demonstrated a right renal hematoma with retroperitoneal bleed (**Figure 4**). Surgical intervention was deferred in the absence of an acute abdomen and hemodynamic stability. The patient was continued on intravenous methylprednisolone and received induction therapy with 1g of rituximab.

Figure 3. Coronal view of bilateral kidney hypodensities on CT abdomen and pelvis.

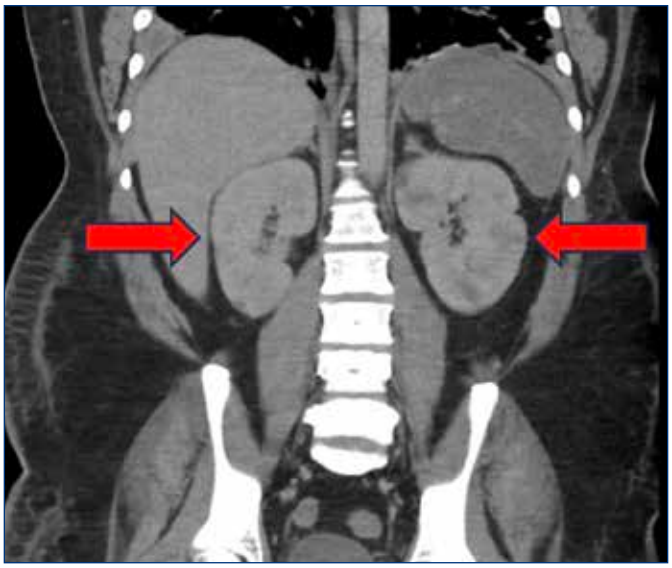
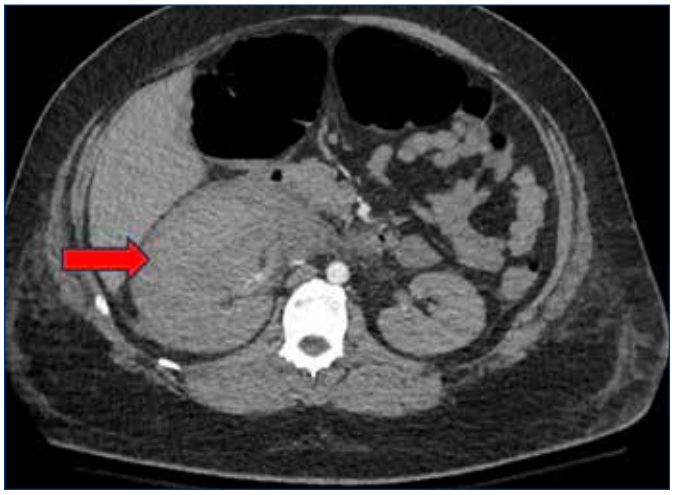


Figure 4. Large right perinephric hematoma decompressing into the retroperitoneum several days later.



DISCUSSION

GPA is a rare disorder classified as small vessel vasculitis that affects the upper and lower respiratory tracts and kidneys and is associated with positive PR3-ANCA. Clinical features often consistent with GPA include arthralgias, petechiae and purpura, splinter hemorrhages, hemorrhagic macules, episcleritis and scleritis, sinusitis, glomerulonephritis, pulmonary fibrosis, pulmonary hemorrhages, and otitis media.[1]

This is an interesting case because of the significant clotting burden without the classic features we would suspect in severe disease like glomerulonephritis or diffuse alveolar hemorrhage. In recent years, there has been more evidence supporting an increased frequency of thrombosis in ANCA-associated vasculitis, including DVT, PE, and myocardial infarction; however, renal and splenic infarcts are rare and often underdiagnosed, ulcerated lesions are only seen in 9.5% to 35.3% of affected individuals.[2-4]

With the patient's poor dentition and recent history of a tooth abscess combined with the appearance of embolic phenomena, we considered infective endocarditis, which can present as GPA[5] and positive rheumatoid factor.[6] Given his recurrent negative blood cultures, normal TTEs, and failure to improve with antibiotics, it was less likely.

Therapy for GPA is often initiated with combined corticosteroids and cyclophosphamide for remission induction; however, studies show that combination with rituximab is non-inferior to cyclophosphamide in severe cases of ANCA vasculitis and may be superior in relapsing disease.[7-9] Many clinicians have transitioned to using rituximab in combination with corticosteroids for remission induction to reduce the risks of infertility, bone marrow toxicity, and secondary malignancy predominantly seen in cyclophosphamide use.[8]

Once remission induction is achieved, therapies for maintenance therapy are variable but include transition to rituximab, mycophenolate, methotrexate, or azathioprine. The MAINRITSAN trial demonstrated that rituximab is more effective at sustaining remission than azathioprine and methotrexate.[10] The duration of therapy is widely dependent on the likelihood of relapse. Notably, individuals with positive PR-3 antibodies have higher rates of relapse.[11]

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The Fluid Facade: Acute Ascites in a Child Uncovers High-Grade B Cell Lymphoma

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A 12-year-old male presented with a two-week history of acute weight loss, night sweats, right upper quadrant pain and progressive abdominal distention. He was previously in a good state of health without any prior history of cardiac, renal, or liver disease. He denied any recent infectious exposure or travel outside the country. On exam, he had moderately severe abdominal distention with no hepatosplenomegaly. Initial labs showed mild leukocytosis and elevated erythrocyte sedimentation rate. Liver function tests, including liver enzymes, direct and indirect bilirubin as well as albumin were within normal range for age. Prothrombin time with international normalized ratio was also normal. Liver ultrasound showed normal echotexture with no suspicious lesions, prompting additional investigations.

To identify the cause of ascites, a diagnostic paracentesis was performed that showed serum ascites albumin gradient of 0.9 g/dl, suggestive of a peritoneal cause of ascites. Abdominal computed tomography (**Image 1**) showed peritoneal nodularity, thickening, and diffuse intraabdominal lymphadenopathy concerning for an oncologic process. Pediatric oncology and surgery were consulted, and patient

Image 1. Computed tomography imaging of abdomen and pelvis with intravenous contrast demonstrates a thick rind of peritoneal thickening/peritoneal caking (red arrows) with diffuse pathologically enlarged lymphadenopathy. Blue arrows demonstrate a more focal matted conglomeration of adenopathy in the right lower quadrant.

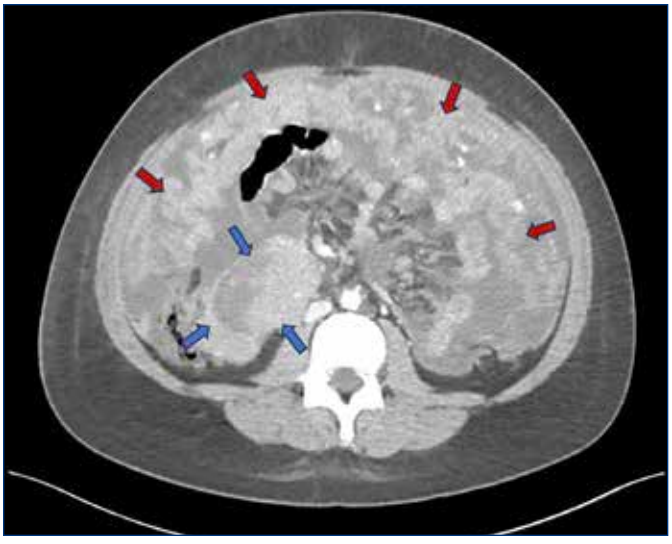


Image 2. Histopathology of lymph node specimens demonstrates complete effacement of the normal lymphoid architecture by a monotonous proliferation of atypical lymphoid cells consistent with a diagnosis of lymphoma. Red arrows point towards some of these atypical cells.

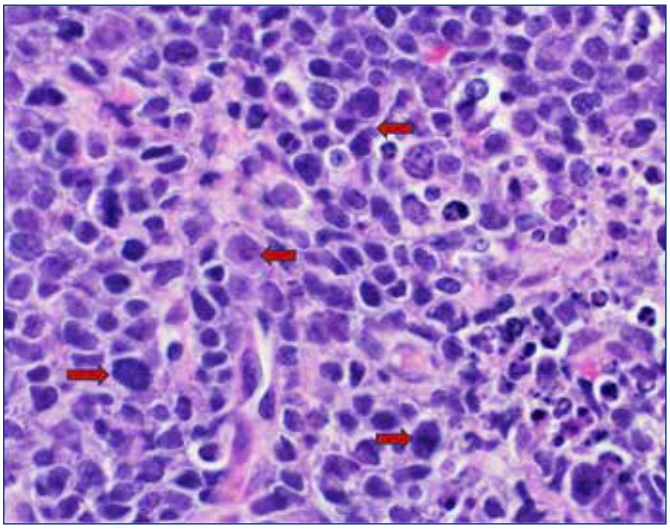
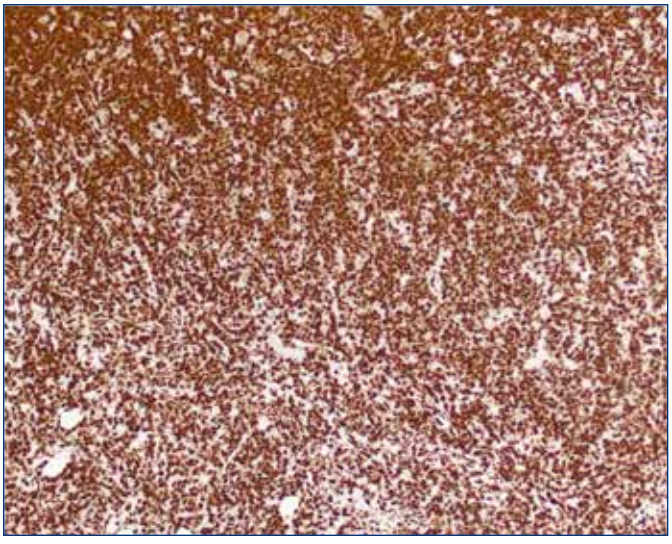


Image 3. Immunohistochemical staining on lymph node and omental specimens utilizing a monoclonal antibody against Ki-67 (well-established marker of cellular proliferation) demonstrates that almost 100% of the cell nuclei exhibit positive staining (brown). This exceptionally high proliferation index correlates with the presence of a rapidly growing tumor.



was then scheduled for a diagnostic laparoscopy that demonstrated a serosanguinous peritoneal fluid with omental and peritoneal caking. Pathology specimen from omental nodules and intra-abdominal lymph nodes confirmed high-grade B cell lymphoma (**Images 2,3**). Tuberculosis infection was ruled out with negative T-Spot test. Patient was started on chemotherapy for high grade B cell lymphoma and follow up imaging showed significant improvement in ascites and overall tumor burden. Now one year post-chemotherapy completion, patient continues to do overall well.

High-grade B cell lymphoma is a rare malignancy in pediatrics that can present with a variety of symptoms, most commonly being weight loss, night sweats, and lymphadenopathy.[1] In pediatric patients, common cause of ascites include liver diseases that lead to cirrhosis and hepatic failure, nephrotic syndrome, congestive heart failure, and infections (such as tuberculosis).[2] Less common causes include malignancies (such as lymphoma or leukemia).[3] Pediatric healthcare providers typically see children with more benign and commonly occurring causes of ascites. In cases where liver function tests and liver imaging are normal, it's prudent to expand the workup to diagnose the less common presentations in a timely manner.[3]

High-grade B cell lymphoma should be considered in the differential diagnosis of pediatric patients presenting with acute ascites as early diagnosis and prompt treatment are essential for optimal outcomes.

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Association Between Emergency Department Operational Metrics and Substance Use Disorder Treatment Interest in Two Rhode Island Hospitals

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ABSTRACT

OBJECTIVE: This study examined if emergency department (ED) operational metrics, such as wait time or length of stay, are associated with interest in substance use disorder (SUD) treatment referral among patients at high risk of opioid overdose.

METHODS: In this observational study, 648 ED patients at high risk of opioid overdose completed a baseline questionnaire. Operational metrics were summarized using electronic health record data. The association between operational metrics and treatment interest was estimated with multivariable logistic regression.

RESULTS: Longer time to room (adjusted odds ratio [AOR]=1.12, 95% confidence interval [CI]=1.01-1.25) and length of stay (AOR=1.02, 95% CI=1.00-1.05) were associated with treatment referral interest. Time to provider and number of treating providers showed no significant association.

CONCLUSION: Longer rooming wait times and longer ED visits were associated with increased SUD treatment referral interest. This suggests patients who wait for longer periods may be motivated for treatment and warrant further resource investment.

KEYWORDS: opioid use disorder, medications for opioid use disorder, emergency department, wait time

INTRODUCTION

The overdose crisis is a serious public health problem in the United States, with over 80,000 individuals losing their lives due to opioid overdose in 2021.[1] In Rhode Island alone, 331 individuals died of an opioid overdose in 2021.[2] Effective treatments for opioid use disorder (OUD), specifically methadone and buprenorphine, have been associated with lower incidence of overdose and mortality.[3-5] However, disparities in access to treatment remain, and treatment engagement among people at high risk of opioid overdose remains low.[6-13] Indeed, more than three in every five individuals who lost their life due to a drug overdose had a missed opportunity for linkage to care, further emphasizing the stark need for increased connection with treatment.[14] The emergency department (ED) has emerged as a strategic site for intervention, as ED visits for opioid overdoses have increased in recent years, and the ED may be the only healthcare point of contact for many individuals with OUD.[15-19]

Initiation and linkage to substance use disorder (SUD) treatment from the ED has been shown to improve outcomes and reduce mortality, yet uptake is low.[20-23] There is an urgent need to better understand and improve treatment readiness and engagement among patients in ED-based settings. Patients often describe treatment readiness as a complex decision, impacted by multiple factors, both internal and external.[24] Negative patient experiences in the ED, such as stigmatization, may impact their decision to start treatment.[24-31] For instance, patients with OUD have reported increased feelings of stigma when they are more visible within the ED, such as in hallways and waiting areas.[25,26] Similarly, some patients have reported that they believe stigmatization led to delayed medical care.[31] It has thus been previously hypothesized that prolonged ED wait times may contribute to decreased uptake of SUD treatment.[21]

ED operational metrics, such as how long a patient waits to be roomed or seen, number of staff providing care, and overall visit length, offer a way to quantitatively analyze the circumstances that shape a patient's experience in the ED. To our knowledge, no prior studies have assessed whether ED operational metrics are associated with a patient's interest and engagement in SUD treatment. These metrics, if associated with treatment interest and engagement, could inform strategies for improving linkage to treatment in the ED.

The objective of this study was to determine if ED operational metrics are associated with interest in a treatment referral. The secondary outcome was to determine if ED metrics are associated with subsequent treatment engagement within 30 days of an ED visit. We hypothesized that longer wait times and interactions with more staff would be associated with lower treatment interest and engagement due to greater opportunity for exposure to stigmatization in the ED.

METHODS

This was a cross-sectional secondary analysis and retrospective cohort study of data collected for The Navigator Trial, a randomized controlled trial (RCT) assessing the

effectiveness of ED-based behavioral interventions provided by a certified peer recovery specialist versus a licensed clinical social worker. The RCT protocol has previously been published (NCT03684681).[32] The trial protocol was approved by the study sites' Institutional Review Boards. This study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.[33]

Recruitment occurred 24 hours per day, 7 days per week from two Rhode Island hospital EDs from November 2018 to May 2021. Eligible patients were being treated for an opioid overdose, a complication of OUD (eg, infectious complication), or were identified as having an opioid overdose within the prior 12 months via self-report or chart review. In total, 648 ED patients were enrolled. Participants completed a baseline study survey and provided consent for review of their electronic health records (EHRs) and linkage to statewide administrative data on SUD treatment. Participant demographics and health history were obtained from the baseline survey, which by protocol was administered once patients had been roomed. Operational metrics for the baseline ED visit, including the independent variables time to room (defined as time to a definitive care space including physical rooms as well as designated hallway beds), time to physician or advanced practice practitioner (APP), number of treating physicians/APPs, and length of stay in the ED, were manually extracted from EHRs using timestamps. Metrics were chosen based on availability in the EHR as well as literature suggesting a relationship with stigmatization.[25-26,35] For participants who were ultimately admitted from the ED, number of ED providers was not available in the EHR, and length of stay was not calculated.

The primary outcome was interest in a referral to SUD treatment, as reported on the baseline survey. The secondary outcome was SUD treatment engagement within 30 days of the baseline ED visit, obtained via linkage to the statewide databases, specifically the Behavioral Health Online Database and the Prescription Drug Monitoring Program. The Behavioral Health Online Database included information regarding admission and discharge from SUD treatment programs at behavioral health care organizations licensed by the Rhode Island Department of Behavioral Healthcare, Developmental Disabilities and Hospitals, such as residential treatment centers and methadone clinics, among others. The Prescription Drug Monitoring Program database included information regarding buprenorphine prescriptions distributed to Rhode Island (RI) residents by RI and most out-of-state retail pharmacies. The secondary outcome, treatment engagement, was defined as any new treatment encounter at a SUD treatment program licensed by the state or any fulfillment of a buprenorphine prescription within 30 days of the baseline ED visit. Importantly, a new encounter at a SUD treatment program included transition to a different SUD treatment program, enrollment in a new SUD treatment, continuation of treatment with a new provider, and/or enrollment in an additional type of SUD treatment. Continuation of the same SUD treatment with the same provider was not defined as a new treatment episode.[32,34]

Data analysis was conducted in STATA/SE (version 15.1, StataCorp), and the *a priori* level of significance was 0.05. Characteristics of study participants were summarized using descriptive statistics. Multivariable logistic regression was used to estimate the association between ED operational metrics and treatment interest and engagement, adjusting for potential confounders, including race, ethnicity, gender identity, insurance, housing stability, suicidality, depressive symptoms as measured by the Center Epidemiologic Studies Depression (CES-D) scale, current treatment status, ED volume and left without being seen rate the day of the participant's index visit, and admission status, among others (**Table 3**). Missing data categories were created for depressive symptoms and suicidality to preserve sample size; a complete-case analysis was completed for sensitivity. A sensitivity analysis with removal of 44 participants who were administered the baseline survey before being roomed was conducted to account for variation in timing of survey completion. An additional sensitivity analysis with removal of patients already in some form of SUD treatment at the time of the index ED visit was conducted.

RESULTS

Overall, 648 ED patients at high risk of opioid overdose were enrolled in the study. The mean age was 36.9 years (standard deviation=10.8), 439 participants identified as male (67.7%), and 444 were white (69.2%) (**Table 1**). A large proportion of participants had health insurance (90.6%), were unemployed (69.4%), and were unstably housed within the past six months (43.7%). Depressive symptoms were highly prevalent; among participants who completed the Center for Epidemiologic Studies Depression scale (CES-D), 405 (84%) had scores that were considered at risk for clinical depression. Additionally, 109 participants (16.8%) endorsed suicidality to ED staff. At baseline, 178 participants (27.5%) were currently engaged in SUD treatment, and most participants (497 of 630 [78.9%]) had previous experience with SUD treatment.

Most participants arrived at the ED by ambulance (403 [62.2%]) and were triaged to an emergency severity index (ESI), a measure of patient acuity, of level 2 (274 [42.3%]) or level 3 (331 [51.1%]) (**Table 1**). 145 participants were ultimately admitted to the hospital from the emergency department. The median time to room and median time to physician/APP was 0.9 hours (interquartile range [IQR]=0.0-3.0) and 0.9 hours (IQR=0.0-2.7), respectively (**Table 2**). The median number of physicians/APPs who participated in each patient's ED care was 5 (IQR=1-9) and the median overall ED length of stay was 7.4 hours (IQR=0.5-14.3), excluding participants admitted to the hospital (**Table 2**).

Table 1. Baseline characteristics among participants in the Navigator Trial

Characteristics	Participants, N=648 (%)
Age, mean (SD)	36.9 (10.8)
Race	
American Indian or Alaska Native	17 (2.6%)
Asian	3 (0.5%)
Black, African, Haitian, or Cape Verdean	39 (6.0%)
Mixed, bi-racial, or multi-racial	61 (9.5%)
Native Hawaiian or Other Pacific Islander	3 (0.5%)
White	444 (69.2%)
Other[a]	62 (9.6%)
Did not know or refused to answer	13 (2.0%)
Hispanic ethnicity	107 (16.5%)
Gender identity	
Female	202 (31.2%)
Male	439 (67.7%)
Transgender	1 (0.2%)
Insurance coverage	576 (90.6%)
Employed[b]	181 (27.9%)
Unstably housed	
Never	192 (29.6%)
Not in past 6 months	158 (24.4%)
In past 6 months	283 (43.7%)
Addiction Treatment[c]	
Never	133 (20.5%)
Not currently	314 (48.5%)
Currently	178 (27.5%)
Suicidal ideation[d]	109 (16.8%)
Emergency severity index (ESI)	
1 (highest acuity)	3 (0.5%)
2	274 (42.3%)
3	331 (51.1%)
4	35 (5.4%)
5 (lowest acuity)	1 (0.2%)
Mode of arrival	
Ambulance	403 (62.2%)
Personal vehicle	85 (13.1%)
Bus/foot	127 (19.6%)
Other (taxi, police, unknown)	33 (5.1%)

a Race and ethnicity were self-reported, and no specification of "other" was given
b Employment included full-time and part-time work
c Addiction treatment includes medication treatment, detoxification, self-help groups (such as AA), outpatient program, day or residential treatment programs, or other
d As recorded in the EHR by ED staff; was not recorded for 145 participants

Table 2. ED operational metrics among participants in the Navigator Trial

Characteristics	Participants N=648 n (% of total participants unless otherwise noted)
Left without being seen[a]	8 (1.2%)
Never roomed[b]	22 (3.4%)
Length of stay in ED in hours, median (IQR)[c]	7.4 (0.5–14.3)
Time to room in hours, median (IQR)	0.9 (0.0–3.0)
Time to physician/advanced practice provider (APP) in hours, median (IQR)	0.9 (0.0–2.7)
Number of treating physicians/APPs, median (IQR)[d]	5 (1–9)

a Participants who completed the survey but left before being seen by a physician or advanced practice provider (APP)
b Participants who completed the survey but were never placed in a designated care space during their visit (eg, room or hallway bed). Most were seen by physicians/APP and discharged from the waiting area; however, this number includes individuals who left without being seen
c Participants admitted to the hospital from the ED did not have a length of stay recorded
d Participants admitted to the hospital from the ED did not have a number of treating physicians/APPs recorded

At baseline, 269 participants (43.1%) were interested in a referral for SUD treatment. After adjusting for potential confounders, increased time to room was significantly associated with interest in treatment referral (adjusted odds ratio [AOR] = 1.12, 95% confidence interval [CI] = 1.01–1.25) (**Table 3**). For every extra hour spent in the waiting room, participants had 12% higher odds of interest in treatment referral. Time to physician/APP was positively but not significantly associated with interest in treatment referral (AOR = 1.11, 95% CI = 1.00–1.24). Number of treating physicians/APPs was not significantly associated with interest in treatment referral (AOR = 1.06 [95% CI, 0.99–1.13]). There was a small but statistically significant association between longer length of stay in the ED and interest in treatment referral (AOR = 1.02, 95% CI = 1.00–1.05). A complete-case analysis showed the odds ratios remained despite a smaller sample size. In a sensitivity analysis with removal of 44 participants administered the survey before being roomed, results were similar. In an additional sensitivity analysis completed with removal of participants already enrolled in some form of substance use disorder treatment, longer time to room was more strongly associated with interest in treatment referral (AOR= 1.15, 95% CI 1.02–1.30) as was longer time to physician/APP (AOR=1.15, 95% CI 1.01–1.30), and the association between interest in treatment referral and length of stay lost statistical significance.

Within 30 days of the baseline ED visit, 201 (31.0%) participants engaged in SUD treatment. Time to room, time to physician/APP, number of treating physicians/APPs, and ED length of stay were not significantly associated with

Table 3. Association between ED operational metrics and interest in a substance use disorder treatment referral among participants in the Navigator Trial

ED Metrics	Unadjusted		Adjusted[a]	
	OR (95% CI)	p value	OR (95% CI)	p value
Time to room	1.12 (1.02–1.22)	0.01	1.12 (1.01–1.25)	0.03
Time to physician/ advanced practice provider (APP)	1.13 (1.03–1.24)	0.01	1.11 (1.00–1.24)	0.06
Number of treating physicians/APPs	1.10 (1.04–1.16)	<0.01	1.06 (0.99–1.13)	0.08
Length of stay in the ED	1.04 (1.02–1.06)	<0.01	1.02 (1.00–1.05)	0.04

a Adjusted for race, ethnicity, age, gender identity, insurance, housing stability, Center for Epidemiologic Studies Depression (CES-D) scale score, suicidality, current treatment status, emergency severity index (ESI) score, study site, visit related to overdose, pre- and post-COVID-19, ED volumes, left without being seen rate, and admission status

Table 4. Association between ED operational metrics and 30-day substance use disorder treatment engagement among participants in the Navigator Trial

ED Metrics	Unadjusted		Adjusted[a]	
	OR (95% CI)	p value	OR (95% CI)	p value
Time to room	1.08 (0.99–1.17)	0.10	1.07 (0.97–1.18)	0.16
Time to physician/ advanced practice provider (APP)	1.05 (0.96–1.15)	0.31	1.05 (0.95–1.16)	0.37
Number of treating physicians/APPs	1.02 (0.98–1.07)	0.40	1.00 (0.94–1.06)	0.98
Length of stay in the ED	1.01 (0.99–1.02)	0.14	1.01 (0.99–1.03)	0.35

a Adjusted for race, ethnicity, age, gender identity, insurance, housing stability, Center for Epidemiologic Studies Depression (CES-D) scale score, suicidality, current treatment status, emergency severity index (ESI) score, study site, visits related to overdose, pre- and post- COVID-19, ED volumes, left without being seen rate, and admission status

30-day treatment engagement (**Table 4**). Additionally, hospital admission from the baseline ED visit was not associated with increased odds of 30-day treatment engagement. Of note, interest in treatment referral at the baseline ED visit was associated with subsequent treatment engagement within 30 days (AOR = 2.09, 95% CI = 1.40–3.10).

LIMITATIONS

This study has several limitations. The associations between increased ED operational metrics and interest in treatment referral may in part be due to selection bias as some individuals who are not interested in treatment may be leaving against medical advice prior to being roomed or seen, and thus would not be captured by this study. Another important limitation is the length of time it takes to connect patients with SUD treatment as well as other reasons a patient may remain in the ED, such as homelessness. Such factors, specifically time spent connecting patients with SUD treatment, likely contribute to an increased length of stay and thus may contribute to the association between length of stay and interest in treatment. Additionally, time to room and time to physician/APP were highly correlated. Our metrics were recorded using EHR timestamps and likely reflect the practice of physicians marking that they have seen a patient on the EHR prior to physically seeing the patient. Similarly, 30-day SUD treatment engagement was measured via administrative data and may not reflect patient adherence. Additionally, while the survey was mostly administered after a patient was roomed, it was administered at different times throughout each visit and does not account for how interest in treatment referral may change throughout the visit. In addition, as the data originates from a randomized control trial, the study population likely has systematic differences from the general population of ED patients at risk of opioid overdose. Lastly, ED operational metrics cannot account for the many personal aspects of a patient's ED experience.

DISCUSSION

This observational study found that longer time to room in the ED was associated with greater interest in treatment referral among ED patients at high risk of opioid overdose. To our knowledge, this is the first study to investigate the association between ED operational metrics and SUD treatment readiness. Although we hypothesized that longer ED wait times would increase perceived stigmatization and, thus, negatively impact treatment interest, the results suggest this is not the case. Rather, patients who are already interested in receiving treatment may be willing to wait longer periods before being seen. Likewise, individuals not initially interested in receiving treatment may not be willing to wait for long periods and may be leaving before being seen.

Our findings challenge the notion that physicians/APPs should rush the care of patients who have been waiting to be seen for long periods, and rather consider that these patients may have waited specifically to engage in SUD treatment services. These patients may instead benefit from extra counseling and resources regarding treatment options such as medications for OUD, including methadone and buprenorphine. Additionally, our results could indicate that individuals not initially interested in receiving treatment may not be willing to wait for long periods and may be leaving before being seen. Early interventions for patients at high risk of opioid overdose, such as when they first arrive at the ED, or reducing wait time may allow physicians/APPs to reach individuals not initially interested in receiving treatment

and who may not be willing to wait for long periods. Additionally, the long length of ED stay (median of over 7 hours) represents substantial time for potential interventions.

Our results also support the notion that interest and engagement in SUD treatment is likely multifactorial and not likely to be significantly impacted by a single ED operational metric.[24-27] None of the ED operational metrics were associated with SUD treatment engagement within 30 days after the ED visit. However, patients who were interested in a treatment referral at the baseline ED visit were more likely to subsequently engage in treatment. Therefore, although ED operational metrics may not predict 30-day engagement in SUD treatment, our study suggests that increased efforts to identify and engage patients interested in treatment at the time of the ED visit may increase treatment enrollment.

In summary, in this observational study of ED patients at high risk of opioid overdose, longer wait time prior to rooming in the ED and longer length of stay were associated with higher odds of reporting interest in a referral to SUD treatment. ED operational metrics were not associated with SUD treatment engagement within 30 days of the ED visit; however, interest in treatment referral at the baseline ED visit was positively associated with subsequent engagement in treatment within 30 days. Our results suggest that patients who have waited for long periods in the ED may be waiting specifically to engage in treatment and warrant further resource investment. Further research is needed to determine if time of arrival at the ED could present as a key point of intervention to reach individuals not initially interested in receiving SUD treatment.

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Pathways to Medicine

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ABSTRACT

Early exposure to health careers has the potential to improve diversity in the health professional workforce and reduce health provider shortages in Rhode Island and across the United States. Rhode Island alone has 13 federally designated Primary Care Health Professional Shortage Areas (PCHPSA) and 12 Medically Underserved Areas (MUA). To help increase healthcare access for individuals residing in these areas and promote diversity within the RI health workforce, The Warren Alpert Medical School of Brown University established and/or supports multiple pathway programs to provide early health career exposure to students. This approach empowers and supports students from various backgrounds to see themselves as future healthcare professionals. These programs work to create a more well-rounded healthcare workforce equipped to serve the state's diverse patient population.

KEYWORDS: Medical Education, Pathway Programs, Diversity

INTRODUCTION

Increasing the number of underrepresented in medicine (UiM) trainees is essential for diversifying the healthcare workforce and providing high-quality care for the growing diverse patient population in Rhode Island (RI) and nationwide. The Association of American Medical Colleges defines UiM as "those racial and ethnic populations that are underrepresented in the medical profession relative to their numbers in the general population."[1] Despite comprising 9.1% and 17.6% of the RI population, Black and Hispanic individuals only make up 3.4% and 4.6% of the RI physician workforce, respectively.[2,3] Providing early exposure to health careers may help increase diversity in the physician workforce by encouraging students from UiM, economically, and educationally disadvantaged backgrounds to pursue medical careers.

Promoting diversity within the medical workforce has the potential to foster health equity and mitigate disparities for patients. Health equity provides individuals with equitable and fair opportunities to achieve optimal health.[4] Racial and ethnic disparities in disease prevalence, morbidity, and mortality exist for racial/ethnic minorities compared to non-Hispanic Whites.[5] Minority providers play a pivotal role in reducing these racial/ethnic health disparities.[6,7] For example, in a study by Greenwood et al evaluating nearly two million hospital births in Florida between 1992 and 2015, physician-patient race concordance was associated with a significant decrease in the mortality of Black newborns.[6] Promoting diversity in the medical field may help foster health equity and reduce racial/ethnic disparities.

Additionally, minority healthcare providers are crucial in promoting the health of minority patients and individuals living in federally designated Health Professional Shortage Areas (HPSA) and Medically Underserved Areas (MUA). For example, physicians from minority backgrounds provide a greater proportion of care to minority and non-English speaking populations.[7] Moreover, results from a study by Xierali et al found that among primary care physicians, Black, Native American, and Hispanic doctors were more likely than White doctors to practice in primary care HPSA, MUA, and rural areas.[8] Minority physicians' role in delivering healthcare to underserved communities underscores the importance of increasing diversity in the medical profession.

In light of the U.S. Supreme Court's decision on affirmative action in higher education, efforts are needed to establish initiatives to expose students from diverse backgrounds to health careers before they apply for college and medical school.[9] To increase early exposure, nationwide pathway/pipeline programs for UiM, economically, or educationally disadvantaged students have been established, beginning as early as elementary school.[10-12] These programs typically focus on early exploration of health careers, standardized exam preparation, research exposure, mentorship, and basic science education.[10,11] They have been shown to help increase the number of UiM and other historically disadvantaged students' interest and pursuit of health careers.[10–12]

PATHWAY PROGRAMS

To help increase the diversity of healthcare providers in Rhode Island, The Warren Alpert Medical School of Brown University has established and supports several pathway programs designed to promote early exposure to health careers for RI students. Led by the Center for Community Engagement and Pathway Programs (CCEPP) in the Office

of Belonging, Equity, Diversity, and Inclusion at The Warren Alpert Medical School, these initiatives prioritize exposing students to diverse healthcare careers, facilitating access to activities that foster their interest in the medical field, and ensuring participants receive the essential support for their journey to success. While these programs welcome students from all backgrounds, students from HPSA and MUA, UiM, and economically and educationally disadvantaged backgrounds are strongly encouraged to apply. The vision of these programs is to create a longitudinal network of pathway programming that assists students across various educational stages, from middle school to college. These programs are designed to provide structured and supportive foundational experiences through mentorship, academic support, and clinical skills development. Through continuous and longitudinal programming, the pathway initiatives seek to enhance support and facilitate access to health career fields throughout a student's educational journey in hopes of increasing the diversity of the RI health workforce, which, in turn, may aid in promoting health equity for the state's growing diverse population.

Middle school

For middle school students, The Warren Alpert Medical School developed Meeting in the Middle (MIM), a semester-long after-school program for students at a public middle school in Central Falls, RI. Central Falls was chosen given its federal designation as a HPSA and MUA. MIM is part of the School Health Model for Academics Reaching All Transforming Lives (SMART) Plus. SMART Plus is a Warren Alpert Medical School initiative, in collaboration with the Ginn Group Collaborative and funded by the Warren Alpert Foundation, that seeks to integrate health career exposure into schools. MIM consists of bi-monthly interactive sessions that include lectures about healthcare careers, interactive clinical skills lessons, and a health career fair.

High school

CCEPP also supports five pathway programs for high school students with the goal of creating longitudinal programming for MIM students electing to continue their exposure to healthcare careers while also creating additional opportunities for other high school students. Like MIM, the high school programs aim to spark an early interest in medical careers and also focus on college preparation, clinical skills exposure, and research involvement. For example, Week of Medical School is a week-long summer program where students from RI come to Warren Alpert Medical School for five hours a day to participate in medicine and science workshops and receive mentorship from faculty and medical students.

Undergraduate programs

Building on the high school programs, three undergraduate pathway programs continue to offer tailored clinical, mentorship, and research opportunities. These programs focus on preparing students for successful applications and matriculation to health professional schools through clinical exposure, professional development, Medical College Admission Test (MCAT) preparation, and other related opportunities. One such program is Rhode to Medicine, a nine-month program that offers clinical skills' workshops, health professional seminars, MCAT funding, pre-medical school counseling and advising during the summer program and throughout the student's undergraduate career. The program also provides students with a summer stipend, recognizing that participating in the program may present challenges in securing summer employment.

Healthcare professionals' volunteer efforts

Since the establishment of the Pathways to Medicine medical student-led program in 2013, to date over 500 students have participated in various health careers exposure activities organized and supported by the medical school. While the CCEPP leads and/or supports each pathway program, the involvement of medical students, residents, attending physicians, and other healthcare professionals is essential for their successful implementation. Healthcare professionals volunteer their time to serve as clinical mentors for undergraduate students in the Rhode to Medicine program, while medical students play a significant role in coordinating various high school and middle school programs. Additionally, public health professionals, nurses, advanced practice providers, community health workers, dentists, and other health professionals are integrated into programs to provide students with insights into the daily lives of a variety of healthcare professions.

CONCLUSION

The Warren Alpert Medical School pathway programs aim to cultivate a more diverse healthcare workforce in Rhode Island. Through early exposure to healthcare careers, mentorship opportunities, and academic support, the programs provide students with opportunities for longitudinal exposure to medical careers. This approach empowers and supports students from various backgrounds to see themselves as future healthcare professionals. By also fostering future collaboration with other RI health professional schools, the programs will work to create a more well-rounded healthcare workforce equipped to serve the state's diverse patient population.

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Competing Narratives of Hospital Closure: A Case Study of Memorial Hospital of Rhode Island

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ABSTRACT

BACKGROUND: Hospital closures have become commonplace in the United States but remain controversial. Memorial Hospital of Rhode Island was a 294-bed hospital in a disadvantaged community that closed in 2018 amid falling patient volume and rising costs.

METHODS: Immersion/crystallization method of qualitative analysis was employed in reviewing semi-structured interviews, public testimony, and public documents. Themes that emerged were organized into discrete narrative typographies, represented by illustrative quotations.

RESULTS: Three main narratives of the hospital's closure arose: 1.) financial inevitability; 2.) corporate mismanagement; and 3.) systems realignment.

CONCLUSIONS: Overlapping and discrepant narratives of the closure demonstrated the complicated role of hospitals within communities and health systems. Acknowledgment of both the hospital's financial straits and the negative impacts of closure on a marginalized community demonstrate the malalignment of economic incentives and the public good in the state's health care system. This case study may offer lessons for other communities facing or experiencing hospital closure.

BACKGROUND

Memorial Hospital of Rhode Island was established in 1901 and closed on New Year's Day 2018. At its founding, the hospital housed 30 beds and tended mainly to the millworkers of the Blackstone Valley. Over the ensuing decades, the hospital developed into a thriving independent community hospital, growing to 294 beds and employing more than 1,500 people at its peak. By the end of the 1990s, the hospital was home to a full slate of medical and surgical services, including an emergency department that saw over 30,000 patient visits in its busiest years in the mid-2010s.[1] It was a sponsor of health professional education including both nursing and physician training programs. By the time of its closure, the hospital had trained nearly two-thirds of all family physicians practicing in Rhode Island.[2]

In 2013, Memorial was acquired by Care New England (CNE), a non-profit entity and the second largest health system in Rhode Island. By the time of the acquisition Memorial had been in increasingly dire financial straits for several consecutive years. By 2016, annual losses from Memorial alone totaled $21 million, and the total number of patient days was down 43% from 2012.[3,4] Citing these challenges, in November of 2017 CNE filed a motion with the Rhode Island Department of Health (RIDOH) to close Memorial. The closure was ultimately approved by RIDOH on December 28, 2017 after a period of written and verbal public testimony.[5] In its decision to approve the closure, RIDOH made note that the closure would likely have significant consequences on care delivery state-wide, but especially in the Blackstone Valley. The decision stated that the closure would "unduly affect access to quality, affordable emergency services for traditionally underserved populations;" would "unduly impact the delivery of emergency services on the affected community;" and would "unduly impact the other licensed hospitals or health care providers in the affected community."[5]

This research focuses on the forces driving Memorial's closure as described by dozens of individuals involved in or affected by the closure. This research aims to explore the varied perceptions, viewpoints and opinions among groups of stakeholders, organizing the disparate narratives through which they understood the hospital and its closure. Ultimately, it offers a case study that may provide insights for other communities and health systems facing hospital closure.

METHODS

Data Collection

In-depth semi-structured interviews and public testimony were the primary data sources for this study. An interview guide was developed by the authors and interviews of 16 stakeholders were conducted by author KS. Interviews typically ranged between 30–60 minutes and were recorded when consent was granted by the interviewee. Public testimony included written statements from 45 individuals and groups submitted to RIDOH as well as transcripts of spoken testimony from 37 individuals at public meetings. Additional documents examined included public health and financial data from RIDOH, health system and consultant reports, and coverage of the closure in the lay media.

Recruitment of Subjects

Interview subjects were approached using purposive and snowball sampling based on their involvement in or familiarity with Memorial Hospital and its closure. Subjects were recruited until data saturation was reached. Interviewees included hospital leadership, physicians, health policymakers, and elected officials. Public testimony includes representatives from these same groups, as well as several patients and community members.

Data Analysis

Recorded interviews were transcribed by author KS. These transcripts and transcripts from public testimony were analyzed using immersion/crystallization qualitative analysis methods.[6,7] Themes that emerged from the data were organized into narrative typographies. Representative quotes are presented in discussion of these main themes. The conduct of this research was granted a non-human subjects' exemption by the Brown University Institutional Review Board.

RESULTS

Interviews, public testimony, other documents, and media reports provided rich material for analysis. Stakeholders disagreed considerably on the events leading up to the closure, the need for closure, and the closure process, though there was general consensus around the financial challenges facing the hospital. Through analysis of interviews and written and oral public testimony, three main narratives emerged: closure as a financial inevitability; closure as a result of corporate mismanagement; and closure as a consequence of systems realignment.

Closure as financial inevitability

The first-order causes of Memorial's closure were financial. One former RIDOH director summarized the case succinctly: *"We have a market, not a health care system. That's the quite specific and proximal cause […] It closed because it didn't have enough business to stay open."* Despite broad disagreement over the need for closure, stakeholders were unanimous in acknowledging the difficult financial picture facing Memorial. Stakeholders cited several interdependent factors, including a poor payor mix, decreasing market share, and increasing costs.

Memorial's difficult payor mix was frequently cited as a driving force of the hospital's losses. The hospital's service area included two of the least affluent communities in the state of Rhode Island. Accordingly, a disproportionately large percentage of the care provided at the facility was either not reimbursed or reimbursed at relatively lower rates compared to hospitals in more affluent locales. Making matters worse, in 2008 the state of Rhode Island changed its Medicaid reimbursement model, reimbursing hospitals at a lower rate and temporarily reducing the total number of Medicaid enrollees in the state.[8,9] Amid the fallout from the rule change, Memorial was also contending with the consequences of the 2008 financial recession, which drained the hospital's substantial endowment.

Several stakeholders cited Memorial's aging infrastructure in defining the causes of its closure. Improvements in the physical plant had long been deferred as the then-independent hospital tried to make a go of it in the face of falling revenue and increasing costs. Two executives interviewed estimated that the facility needed tens of millions of dollars in capital improvements by the time of closure.

Some respondents reported a perceived gap in quality and safety of care delivered at Memorial compared with other local hospitals. This notion is demonstrated in Memorial's declining patient census. Between 2011–2017, Memorial provided just 21.5% of hospital admissions among service area residents, and 37% of emergency department visits.[10] This lower patient volume resulted in lower revenue. A former president of the hospital pinned the closure on declining patient visits. *"Ultimately it was that the volume had begun to decline to the point where the finances just wouldn't work."* Those remaining patients were disproportionately lower income, as patients with the means to travel for care did so, while those without the means could not. One executive at a competing health system described it as: *"The patients who had options were choosing to go elsewhere because the 'elsewheres' were keeping up their physical plants and had the full range of specialty services available. Only the patients who couldn't go elsewhere ended up going to Memorial."*

This decline in patient volume and the resulting drop in revenue ushered Memorial into a vicious cycle. In response to falling revenues, hospital leadership began cutting services, which, once closed, were unable to generate revenue. The most notable example was the scaling down of Memorial's intensive care unit (ICU) to just four beds. The downsizing and eventual closure of the ICU was cited by several stakeholders as a key domino to fall in the closure process. Provision of ICU-level of care requires immense resources and staffing; however, it is reimbursed at an accordingly high rate, and often represents a substantial revenue stream for hospitals. Furthermore, limits on ICU capacity have downstream impacts on other hospital services, as a lack of ICU beds limits the number and acuity of patients brought to the emergency department. As services were discontinued, patient safety issues were raised by hospital administrators to state health officials charged with considering the closure application.

While some respondents were split over the inevitability of Memorial's closure, the executives and policymakers interviewed were unanimous in their belief that the finances were impossible to reverse, with one hospital executive calling the confluence of poor reimbursement, dwindling volume, and service reductions a *"self-fulfilling prophesy."*

Closure due to corporate mismanagement

While all respondents acknowledged the financial difficulties facing Memorial, a large majority also expressed the opinion that mismanagement by hospital and health system leadership contributed to the closure. Some of these respondents believed the hospital would not have closed but for poor management. The accusations of mismanagement focused on both historic hospital leadership prior to the acquisition by Care New England, as well as management decisions following the acquisition.

Among former Memorial physicians interviewed there was a pervasive opinion that hospital management had failed to optimally adapt to a changing landscape of care delivery beginning in the mid-2000s, years before the sale to CNE. Stakeholders pointed to a failure to address aging infrastructure, the spending down of the hospital's substantial endowment, a resistance to establishing internet connectivity and electronic medical records, and a failure to adapt and establish clinical service lines to maximize revenue, among other complaints.

With the hospital's financial woes well apparent for some time, interviewees questioned CNE's decision to purchase Memorial in the first place. As one state-level policymaker put it: *"I could not understand why they wanted it…It made no sense to me. And I thought it would undermine CNE's fiscal integrity over time."* This bewilderment regarding CNE's strategic plans in purchasing Memorial were common across interviews. A former Memorial physician asked: *"Who knows what they were thinking. Market share? They didn't have a general inpatient hospital other than Kent [south of Providence]. So geographically, in Rhode Island, that's a big deal."*

Several interviewees contrasted CNE's acquisition proposal with that of Lifespan, a rival health system that also discussed acquiring Memorial. Some stakeholders posited that CNE overpromised in its proposal and acquired Memorial in bad faith. According to a previous chief financial officer at Memorial, *"It looked like they were stripping the place. It looked like they bought it to close it."*

While interviewees differed in their estimation of CNE's decision to purchase Memorial, there was near universal questioning of its management of Memorial following the sale. Interviewees routinely cited a lack of proper capital investment in physical plant and high-revenue service lines and a failure to retain or replace providers of these high-revenue services. More broadly, interviewees alleged a failure to enact a plan to revive Memorial after its acquisition. Multiple former Memorial physicians interviewed raised poor communication of the hospital leadership's plan for Memorial as a particularly frustrating failure. The pervasiveness of temporary management consultants further added to concerns around communication and strategy.

A few former providers posited that CNE engaged in financial skullduggery to pin system-wide losses on Memorial. In April of 2017, CNE announced plans to merge with Massachusetts-based Partners HealthCare (now Mass General Brigham), though the merger was ultimately abandoned before a deal was reached. Insinuations about pressures to close Memorial to facilitate a merger were common among interviewers, though CNE executives were adamant in denying the claim in both interviews and public statements.

Interviewees differed in the degree to which they blamed historical leadership versus new management, though most cited some combination of the two in assigning blame for Memorial's decline. As one former Memorial executive described it: *"The problems were pre-existing but the response of the system was not adequate."*

Closure as Consequence of Systems Realignment

The third major narrative that emerged from interviews and public testimony was the notion that the closure of Memorial was part of a systems realignment and transition from hospital-based care to an outpatient-care delivery model. Relatedly, a report citing an excess of hospital beds in the state of Rhode Island was referenced repeatedly in stakeholder interviews, public testimony, and coverage in the lay press around the time of closure.[11] What is more, Memorial's proximity to other nearby hospitals was frequently raised as justification for its closure in concert with these other factors.

Multiple interviewees cited changing care dynamics in their discussion of Memorial's low census and ultimate closure. A former hospital president and physician summed up this view: *"I used to admit patients with pneumonia. Now you give them a Z-pack. It's a totally different story than it was years ago. Those patients used to be in hospitals [...] They're not anymore."* Hospital leaders interviewed identified this trend as having explicit impacts on Memorial's long-term planning through the years, with decreased focus on inpatient services.

Another frequent justification for closure cited by a wide range of stakeholders was a 2013 report commissioned by RIDOH that averred that the state had a surplus of approximately 200 hospital beds.[11] This surplus was frequently cited retrospectively by interviewees, as well as contemporaneously in written and oral testimony and in the lay press as rationalization for the need for closure. Some of those interviewed saw the statistic as a convenient justification for bad policy, noting that many of Memorial's 294 licensed beds were not actually staffed or equipped to house patients. Others assessed the report's findings differently: they accepted the notion of a surplus of beds in the state but argued that the distribution of staffed and licensed beds was more important than the sum total. Several stakeholders cited the patient population served by Memorial – a group characterized by relative socioeconomic disadvantage – as cause to maintain hospital beds in Pawtucket.

Another frequently raised fact in discussion of the closure was that Memorial was in close geographic proximity to

other full-service hospitals. A former RIDOH director put it this way: *"You can see Memorial from the roof of the Miriam. There are hospitals in line of sight. There's no way in heck that you need two hospitals serving the same geographic area."* Indeed, the formal application for Memorial's closure filed with RIDOH detailed the nine hospitals within a 16-mile radius of Memorial and 10 federally qualified health centers within a 10-mile radius. Not all stakeholders bought into this notion. Several respondents noted an aversion to travel – even within Providence County – among local patients, and a lack of transportation for those willing to travel.

In a representative statement, one former Memorial physician acknowledged the conclusions of the care realignment narratives, but cautioned against systems-level thinking without considering the local context: *"It's an apple and an orange, the human value of having a community hospital and the numbers value of using health care dollars more efficiently. They're just two completely different things."*

DISCUSSION

The narratives surrounding the closure of Memorial Hospital of Rhode are multiple and overlapping. These discrepant narratives demonstrate the varied understandings of a hospital's role within both communities and wider health systems. The finding that perceptions differed on the causes of and need for the hospital's closure is consistent with the existing literature on hospital closures.[12,13] As in other studies, community members and hospital providers held generally positive opinions of the hospital and called upon personal experiences in defending against its closure.[14,15] Those opposed to the closure also frequently raised a concern for vulnerable populations affected by the closure, and raised the importance of the hospital's broader significance in the community.[14-16] Administrators advocating closure in light of the hospital's financial distress faced a difficult task in navigating a system that views health care as both a public good and a private commodity.[17]

Considering the competing closure narratives is not to impugn the motives of executives or policymakers, but to recognize the complex and unwieldy set of circumstances that created the conditions for closure. Indeed, community hospitals across the country are closing or consolidating at a steady clip in response to the same market forces that ultimately doomed Memorial.[18-20] Moreover, the long-term clinical outcomes of the hospital's closure may be difficult to discern, as previous studies have shown mixed results on the impacts of closure on mortality and hospitalization rates.[21-28] It is possible that Memorial's closure and others like it represent an appropriate realignment of health care markets toward a more efficient system.[29,30] It is not the aim of this research to substantiate accusations of mismanagement, but rather to analyze the closure narratives expressed by those close to the process. Whether or not the hospital's fate was accelerated by managerial decisions or policy aims, Memorial faced a difficult outlook. Acknowledgment of this difficult picture is not to discount the immense loss that Memorial's closure presented to the Blackstone Valley, or the individual sorrows of the patients who fought to keep it open.

Under the systems-of-care delivery as presently designed in the United States, hospital closure may well be inevitable while still running counter to community concerns and equity measures. This misalignment of economic incentives with community needs and moral value belies our imperfect system. Absent significant planning, such a system risks causing clinical harm to economically disadvantaged communities through decreasing services. Understanding the varied narratives and perceptions of hospitals' roles in communities may help to guide stakeholders facing the prospect of hospital closures now and in the future.

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Obstetric Emergency Simulation: A Pre/Post Survey Analysis of High-Fidelity Teamwork Among Emergency Department Physicians

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KEYWORDS: Teamwork, Survey, Emergency Medicine

INTRODUCTION

Collaboration, efficiency, and communication are critical components of high-fidelity teamwork, which results in safe healthcare systems and improved perinatal outcomes.[1-5] Multiple non-health care industries have shown simulation is an effective tool to promote high-fidelity teamwork, particularly when teams are physically separated and work together rarely.[1-5] Obstetric emergencies can be unpredictable and may require multidisciplinary collaboration, factors that make these cases excellent opportunities for simulation based education.[3,5] We therefore aimed to assess the impact of an obstetric emergency simulation on survey-based measurements of high-fidelity teamwork among emergency department physicians at a quaternary care center without a birthing unit or obstetric providers (maternal-fetal medicine physicians serve as obstetric consultants but are based in another hospital system).

METHODS

We conducted a pre/post-survey study of emergency department physicians who participated in an obstetric emergency simulation in May 2023. The study was deemed to be minimal risk and was IRB exempt #1966002-1. Five obstetric emergencies – eclampsia, cardiac arrest, post-mortem cesarean section, post-partum hemorrhage, and breech extraction – were selected jointly by emergency and maternal-fetal medicine physicians to serve as simulation cases. Obstetric emergency simulations were led jointly by a maternal-fetal medicine and emergency department physician. The survey was modified from existing high-fidelity teamwork surveys[1-4] composed of Likert-scale items (0=never to 10=always) and was collected one month pre- and one month post-obstetric emergency simulations. Pre/post medians for each survey item were calculated and compared using Wilcoxon rank-sum test. Pre-specified sub-group analyses included physician level of training (i.e., resident versus attending) and self-identified gender (i.e., male or female).

RESULTS

Pre/post-simulation surveys were completed by 38/46 (83%) and 34/46 (74%) of emergency department physicians respectively. Overall, the emergency department physicians reported higher levels of teamwork related to caring for patient with obstetric emergencies after the simulations than before (**Table 1**). Specifically, the following survey items were higher after simulation: reported ability to execute evidence-based obstetric emergency management (median [interquartile range] 5.5 [3–8] vs 7 [5–8], p=0.04), feeling supported by staff at opposite healthcare system (6 [3–9] vs 8 [7–10], p=0.002), establishment of a care team leader (5 [2–9] vs 8 [6–10], p=0.006), assessment within 15 minutes of presentation to either healthcare system (5 [0–8] vs 7 [5–9], p=0.001), direct and closed-loop communication (6 [4–8] vs 8.5 [6–10], p=0.001), and timely adaption of obstetric emergency management plans (5 [1–9] vs 8 [5–10], p=0.01 **Table 1**) for the clinical scenario.

Sub-group analysis by emergency department physician training level (i.e., post-graduate residents (n=26) and attendings (n=12)) revealed similar improvement in high-fidelity teamwork survey components for the resident trainees. There were no statistically significant differences in high-fidelity teamwork survey components among attending emergency department physicians (**Tables 2a,b**).

However, sub-group analysis by self-identified gender demonstrated differences between groups: self-identified male emergency department physicians (n=20) reported post-simulation that teams were more likely to establish a care team leader (6 [4–9] vs 8 [8–10], p=0.02), have transparent thinking of care leader (5.5 [5–9] vs 8.5 [6–10], p=0.03), utilize direct and closed-loop communication (7 [5-8] vs 9 [8–10] and 6 [5–8] vs 8.5 [8–10], p=0.001 respectively) and have clear establishment of roles (6 [5–9] vs 8.5 [7–9], p=0.04). Conversely, self-identified female emergency department physicians (n=18) reported support from the opposite health care system (5 [4–8] vs 8.5 [8–9], p=0.02) and assessment within 15 minutes of arrival to the emergency department (3 [0–5] vs 8 [8–8], p=0.02) but there were no differences in other high-fidelity teamwork survey components.

CONCLUSION

Implementation of multidisciplinary obstetric emergency simulations, led by maternal fetal medicine physicians, for emergency physicians at a quaternary care center without obstetricians or a birthing center, resulted in improved survey-based assessments of high-fidelity teamwork among emergency department physicians. These findings are limited by our current inability to measure the decline of knowledge and sustained high-fidelity teamwork assessments over time. However, we intend to conduct ongoing assessments to address this limitation. Future research should examine how obstetric emergency simulations impact perinatal outcomes and high-fidelity teamwork culture across healthcare systems longitudinally.

Table 1. Obstetric emergency simulation pre/post survey among all emergency department physicians

High-fidelity teamwork survey item	Pre- N=38	Post- N=34	p-value
How often did you feel confident in your ability to identify an obstetric emergency?	6 [3–9]	7 [5–9]	0.12
How often did you feel confident in your ability to execute evidence-based management?	5.5 [3–8]	7 [5–8]	**0.04**
How often did your patient require a multidisciplinary care team?	8 [4–10]	8 [2–10]	0.85
How often did you feel supported when you asked for help from hospital 1 staff?	5 [3–10]	7 [5–9]	**0.01**
How often did you feel supported when you asked for help from hospital 2 staff?	6 [3–9]	8 [7–10]	**0.002**
In your opinion, how often did the team's overall performance meet the gold standard assessment as a multidisciplinary team within 15 minutes of arrival to the ED?	5 [0–8]	7 [5–9]	**0.001**
How often was a care team leader established?	5 [2–9]	8 [6–10]	**0.006**
How often was there transparent thinking by a care team leader?	5.5 [3–9]	8 [6–10]	**0.008**
How often was there direct communication amongst the team?	6 [3–9]	8.5 [6–10]	**0.001**
How often was their closed-loop communication amongst the team?	6 [4–8]	8 [5–10]	**0.002**
How often did other disciplines identify themselves?	6 [1–9]	7 [5–10]	**0.02**
How often did each team member have a clear role?	5 [3–9]	8 [5–10]	**0.02**
How often were priorities / order of action clearly delineated among the team?	5 [3–9]	8 [5–10]	**0.04**
How often were order of action (e.g. airway, breathing, circulation) correct according to the specific obstetric emergency?	8 [5–10]	9 [7–10]	0.10
How often were there disagreements among team members that negatively impacted patient outcomes?	2 [0–5]	1.5 [0–5]	0.59
How often did an individual team member fixate on the less emergent issue excluding other important aspect of care?	3 [0–5]	3 [0–5]	0.96
How often were there inappropriate assumptions of other team members capabilities?	3.5 [0–5]	2.5 [0–5]	0.17
How often were management plans adapted in a timely manner when the clinical situation changed?	5 [1–9]	8 [5–10]	**0.04**

Data median [interquartile range]; p-value calculate using Wilcoxon rank-sum test; responses to individual survey

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Tables 2a,b. Multidisciplinary obstetric emergency simulation pre/post survey among emergency department clinicians by resident and attending

Multidisciplinary high-fidelity survey item – POST-GRADUATE YEARS 1–5	Pre- N=26	Post- N=20	p-value
How often did you feel confident in your ability to identify an obstetric emergency?	6 [3–8]	8 [5–9]	**0.04**
How often did you feel confident in your ability to execute evidence-based management?	5 [4–8]	7 [5–8]	**0.01**
How often did your patient require a multidisciplinary care team?	7.5 [5–10]	8.5 [7–10]	0.08
How often did you feel supported when you asked for help from hospital 1 staff?	5 [3–10]	8 [5–9]	**0.008**
How often did you feel supported when you asked for help from hospital 2 staff?	6 [4–9]	8 [8–10]	**0.003**
In your opinion, how often did the team's overall performance meet the gold standard assessment as a multidisciplinary team within 15 minutes of arrival to the ED?	5 [0–7]	8 [5–9]	**0.01**
How often was a care team leader established?	5 [2–9]	10 [8–10]	**0.01**
How often was there transparent thinking by a care team leader?	6 [4–9]	9 [8–10]	**0.002**
How often was there direct communication amongst the team?	6.5 [5–9]	10 [8–10]	**0.003**
How often was their closed-loop communication amongst the team?	6 [5–8]	10 [8–10]	**<0.001**
How often did other disciplines identify themselves?	5 [4–9]	9 [7–10]	**0.007**
How often did each team member have a clear role?	5 [5–9]	9 [8–10]	**0.01**
How often were priorities / order of action clearly delineated among the team?	5 [5–9]	8 [8–10]	**0.03**
How often were order of action (e.g. airway, breathing, circulation) correct according to the specific obstetric emergency?	8 [5–10]	10 [8–10]	**0.02**
How often were there disagreements among team members that negatively impacted patient outcomes?	2 [0–5]	0 [0–2]	0.09
How often did an individual team member fixate on the less emergent issue excluding other important aspect of care?	2 [0–5]	2 [1–5]	0.86
How often were there inappropriate assumptions of other team members capabilities?	3 [0–5]	2 [0–3]	0.08
How often were management plans adapted in a timely manner when the clinical situation changed?	7 [3–9]	8 [7–10]	**0.04**

Multidisciplinary high-fidelity survey item – ATTENDING	Pre- N=12	Post- N=13	p-value
How often did you feel confident in your ability to identify an obstetric emergency?	7.5 [5–9]	7 [6–9]	0.93
How often did you feel confident in your ability to execute evidence-based management?	6.5 [6–8]	7 [6–8]	0.88
How often did your patient require a multidisciplinary care team?	8 [7–9]	6 [4–8]	0.14
How often did you feel supported when you asked for help from hospital 1 staff?	6 [3–7]	7 [5–8]	0.34
How often did you feel supported when you asked for help from hospital 2 staff?	7 [7–8]	8 [8–8]	0.56
In your opinion, how often did the team's overall performance meet the gold standard assessment as a multidisciplinary team within 15 minutes of arrival to the ED?	5 [3–5]	6 [6–6]	0.12
How often was a care team leader established?	4 [3–7]	7 [7–7]	0.10
How often was there transparent thinking by a care team leader?	5 [4–7]	6 [6–6]	0.62
How often was there direct communication amongst the team?	6 [5–6]	8 [8–8]	0.09
How often was their closed-loop communication amongst the team?	5 [5–6]	7.5 [7–8]	0.15
How often did other disciplines identify themselves?	6 [6–6]	6.5 [6–7]	0.58
How often did each team member have a clear role?	5 [5–6]	6.5 [6–7]	0.42
How often were priorities / order of action clearly delineated among the team?	5 [3–6]	5.5 [5–6]	0.35
How often were order of action (e.g. airway, breathing, circulation) correct according to the specific obstetric emergency?	7 [7–7]	8 [8–8]	0.69
How often were there disagreements among team members that negatively impacted patient outcomes?	2.5 [2–3]	4 [3–5]	0.46
How often did an individual team member fixate on the less emergent issue excluding other important aspect of care?	5 [5–5]	4 [3–5]	0.97
How often were there inappropriate assumptions of other team members capabilities?	5 [5–5]	4 [3–5]	0.52
How often were management plans adapted in a timely manner when the clinical situation changed?	5 [5–5]	6 [6–6]	0.31

Data median [interquartile range]; p-value calculate using Wilcoxon rank-sum test; responses to individual survey items vary

A Comparison of COVID-19 Associated Hospitalization Rates Among Unvaccinated Versus Vaccinated Residents in Rhode Island, September 2022 to March 2024

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ABSTRACT

While the burden of COVID-19 in Rhode Island has diminished since 2020, Rhode Islanders' health continues to be severely impacted. We compared COVID-19 hospitalization rates among Rhode Islanders who did and did not receive the latest COVID-19 vaccination for the 2022–2023 and 2023–2024 COVID-19 seasons (November through March). Crude and age-adjusted rate ratios were calculated for each season comparing hospitalization rates of unvaccinated and vaccinated individuals. During the 2022–2023 season, individuals who were not vaccinated with the bivalent COVID-19 vaccine were 3.6 times (95% CI=2.8-4.6) more likely to be hospitalized for COVID-19 than individuals who received the vaccine, whereas during the 2023–2024 season, not receiving the updated vaccine was associated with a 2.4 times (95% CI=1.8-3.3) higher risk of hospitalization. The study provides the first assessment of the protection from hospitalization provided by COVID-19 vaccinations among Rhode Islanders and highlights the importance of continued vaccination for COVID-19.

KEYWORDS: Vaccine effectiveness, COVID-19, hospitalizations, Rhode Island, public health

BACKGROUND

Since March 2020, there have been more than 470,099 cases, 23,583 hospitalizations, and 4,364 deaths in Rhode Island as a result of the COVID-19 pandemic.[1] The widespread introduction of COVID-19 vaccines in 2021 had noticeable effects in reducing hospitalizations and deaths.[2-4] While the burden of COVID-19 in Rhode Island has diminished since 2020, Rhode Islanders' health continues to be severely impacted, as seen with the 2,547 hospitalizations and 262 deaths in Rhode Island in 2023 alone.[1]

The CDC's Advisory Committee on Immunization Practices recommends that eligible individuals receive the most recently released COVID-19 vaccines to protect against serious illness: in 2022–2023, bivalent vaccines were recommended, and in 2023–2024, the updated monovalent XBB.1.5 vaccines were recommended.[5,6] Studies have shown that individuals who receive the most up-to-date vaccine have a lower risk of hospitalization when compared to individuals who did not receive the latest vaccine.[7-12]

This analysis evaluated rates of hospitalization with a SARS-CoV-2 infection among Rhode Island residents who were either vaccinated or unvaccinated with an updated vaccine during periods of increased COVID-19 activity from November 2022 through March 2024. This study provides the first assessment the protection from hospitalization provided by COVID-19 vaccinations among Rhode Island residents in the peer-reviewed literature.

METHODS

Study Design, Setting, and Data

We compared risk of COVID-19 associated hospitalizations among Rhode Island residents who did and did not receive the latest COVID-19 vaccine separately for the 2022–2023 and 2023–2024 COVID-19 seasons. We defined the COVID-19 seasons as November 1 through March 31 due to increased COVID-19 activity during this period.

Hospitalization data were obtained from the Rhode Island Department of Health (RIDOH), to which all hospitals in Rhode Island are required to report COVID-19-associated hospitalizations. Vaccination data were obtained using the Rhode Island Child and Adult Immunization Registry (RICAIR), which includes Rhode Island residents vaccinated in Rhode Island, Massachusetts, Connecticut, New Jersey, New York City, and residents vaccinated at a Veterans Affairs facility in Rhode Island on or after November 14, 2022. Residents vaccinated in a state or federal facility not listed above were not identified as vaccinated unless they submitted their vaccination record to RIDOH. Population estimates were obtained from the US Census Bureau's 2020 5-year American Community Survey.

Hospitalization Definitions (Numerators)

A COVID-19-associated hospital admission was defined by RIDOH as any Rhode Island residents admitted to an acute care or psychiatric inpatient facility for at least one night with COVID-19. After January 1, 2023, people were included once per COVID-19 infection if they had a laboratory-confirmed positive SARS-CoV-2 test either: (1) within 30 days prior to hospital admission if COVID-19 was a primary or contributing cause of hospitalization (patient admitted with

respiratory or other COVID-19 symptoms or for a reason that is directly related to COVID-19, e.g.; patient is admitted with dizziness and found to be dehydrated due to COVID-19); (2) within 14 days prior to hospital admission if COVID-19 was not a primary or contributing cause of hospitalization; or (3) within three days after hospital admission, regardless of the cause of hospitalization. Prior to January 1, 2023, patients were counted more than once if they were re-admitted during the course of a single COVID-19 infection, consistent with the RIDOH COVID-19 hospitalization definition.[13]

A hospitalized individual was considered vaccinated for COVID-19 if they received the most recent up-to-date vaccine recommended prior to the specimen collection date for their positive COVID-19 test linked to their hospitalization. Hospitalized individuals who did not receive the most up-to-date recommended vaccine prior to the specimen collection date for their positive COVID-19 test linked to their hospitalization were considered unvaccinated, regardless of whether they had received an earlier COVID-19 vaccine.

Population Definitions (Denominators)

For each month of the 2022–2023 and 2023–2024 COVID-19 season, we defined the vaccinated population as Rhode Island residents who had received the up-to-date COVID-19 vaccine as of the mid-point of the month, per the RICAIR database (vaccinated population). The unvaccinated population was then calculated as the Rhode Island population minus the number of vaccinated individuals.

Statistical Analysis

We compared hospitalization rates for Rhode Island residents who did and did not receive an up-to-date vaccine, separately for the 2022–2023 and the 2023–2024 COVID-19 seasons. For the vaccinated and unvaccinated populations, monthly hospitalization rates were calculated and then summarized as an average monthly rate for each season. We age-standardized the monthly hospitalization rates using direct methods, because age is known to be associated with vaccination status and hospitalization risk. We used 2020 U.S. population estimates from the U.S. Census Bureau's 5-year American Community Survey as the reference population and standardized across six age groups: 0–17, 18–44, 45–54, 55–64, 65–74, ≥75.

Crude and age-adjusted rate ratios were calculated for each season comparing unvaccinated individuals to vaccinated individuals, using vaccinated individuals as the reference group. We calculated 95% confidence intervals (CIs) for crude rate ratios using methods described by Rothman et al.[14] Keyfitz found that the variance for a crude rate is a reasonable approximation for the variance of an age-adjusted rate, [15] so the standard deviation for the crude rate was also used to calculate 95% CIs for age-adjusted rate ratios. All analyses were conducted using SAS Analytical software (Version 9.4), except that Microsoft Excel was used to calculate 95% CIs using the methods described above.

RESULTS

A total of 3,246 hospitalizations met the RIDOH definition of COVID-19 hospitalizations for the period of study; 1,961 hospitalizations occurred from 11/1/22 to 3/31/23 and 1,285 hospitalizations occurred from 11/1/23 to 3/31/24 (**Tables 1 and 2**). From 11/1/22 to 3/31/23, an average of 78 individuals who were vaccinated with the 2022-2023 vaccine were hospitalized per month, while an average of 314 individuals who did not receive the 2022-2023 vaccine were hospitalized per month (**Table 1**). A total of 252,648 individuals received the COVID-19 vaccine by 3/16/23 (the midpoint of March 2023), for a cumulative average of 224,720 individuals vaccinated across the five months included in the 2022–2023 season (**Table 1**).

From 11/1/23 to 3/31/24, an average of 49 individuals who were vaccinated with the 2023–2024 vaccine were hospitalized per month, and an average of 208 individuals who did not receive the 2023–2024 vaccine were hospitalized per month (**Table 2**). A total of 188,333 individuals received the COVID-19 vaccine by 3/16/24 (the midpoint of March 2024), for a cumulative average of 169,138 individuals vaccinated

Table 1. COVID-19 Hospitalization Counts by Vaccine Status for November 2022 to March 2023

	Number of COVID-19 Hospitalizations		Number of Rhode Island Residents	
	Received Updated Vaccine	Did Not Receive Updated Vaccine	Received Updated Vaccine	Did Not Receive Updated Vaccine
Nov '22	53	373	173348	884450
Dec '22	98	468	213938	843860
Jan '23	116	399	236281	821517
Feb '23	71	210	247386	810412
Mar '23	52	121	252648	805150
Total Average	**78**	**314**	**224,720**	**833,078**

Table 2. COVID-19 Hospitalization Counts by Vaccine Status for November 2023 to March 2024

	Number of COVID-19 Hospitalizations		Number of Rhode Island Residents	
	Received Updated Vaccine	Did Not Receive Updated Vaccine	Received Updated Vaccine	Did not Receive Updated Vaccine
Nov '23	41	189	135054	922744
Dec '23	87	316	161204	896594
Jan '24	77	339	176546	881252
Feb '24	24	121	184551	873247
Mar '24	17	74	188333	869465
Total Average	**49**	**208**	**169,138**	**888,660**

across the five months included in the 2023–2024 season (**Table 2**). Hospitalization counts for both the 2022–2023 and 2023–2024 COVID-19 seasons can be found in **Table 3**, showing that hospitalization counts are most heavily found in the older age groups.

Crude and age-adjusted hospitalization rates for the 2022–2023 season can be found in (**Table 4**). After age-adjustment, the hospitalization rate among the vaccinated was 13.1 hospitalizations per 100,000 residents, while the hospitalization rate for the unvaccinated was 46.6 hospitalizations per 100,000 residents (**Table 4**). After age-adjustment, the rate ratio was 3.6 (95% CI=2.8–4.6), indicating that there was a 3.6 times greater risk of hospitalization for the unvaccinated compared to the vaccinated (**Table 4**).

For the 2023-2024 season, crude and age-adjusted hospitalization rates can be found in **Table 5**. After age-adjustment, the hospitalization rate among the vaccinated was 11.2 hospitalizations per 100,000 residents, while the hospitalization rate for the unvaccinated was 27.0 hospitalizations per 100,000 residents (**Table 5**). After age-adjustment, the rate ratio was 2.4 (95% CI=1.8–3.3), indicating that there was a 2.4 times greater risk of hospitalization for the unvaccinated compared to the vaccinated (**Table 5**).

Table 3. COVID-19 Hospitalization Counts by Vaccine Status and By Age Group for the 2022–2023 and 2023–2024 COVID-19 Seasons.

	Hospitalization Counts from November 2022 to March 2023		Hospitalization Counts from November 2023 to March 2024	
Age Group	Received Updated Vaccine	Did Not Receive Updated Vaccine	Received Updated Vaccine	Did Not Receive Updated Vaccine
0–17	0	51	<5*	40
18–44	10	223	6	98
45–54	12	92	7	48
55–64	46	178	27	106
65–74	83	307	65	217
75+	239	720	140	530
Total	**390**	**1571**	**246**	**1039**

*Counts of 1–4 are suppressed in accordance with the RIDOH Small Numbers Reporting Policy.

Table 4. COVID-19 Hospitalization Rates per 100,000 Residents, Rate Ratios, and 95% Confidence Intervals for November 2022 to March 2023

	Received Updated Vaccine	Did Not Receive Updated Vaccine	Rate Ratio	95% Confidence Interval
Crude Hospitalization Rate	35.0	37.4	1.1	0.9, 1.4
Age-Adjusted Hospitalization Rate	13.1	46.6	3.6	2.8, 4.6

Table 5. COVID-19 Hospitalization Rates per 100,000 Residents, Rate Ratios, and 95% Confidence Intervals for November 2023 to March 2024

	Received Updated Vaccine	Did Not Receive Updated Vaccine	Rate Ratio	95% Confidence Interval
Crude Hospitalization Rate	30.0	23.3	0.8	0.6, 1.1
Age-Adjusted Hospitalization Rate	11.2	27.0	2.4	1.8, 3.3

DISCUSSION

During the 2022–2023 season, individuals who were not vaccinated with the bivalent COVID-19 vaccine were 3.6 times more likely to be hospitalized for COVID-19 than individuals who received the vaccine. During the subsequent season (2023–2024), unvaccinated individuals faced a 2.4 times higher risk of hospitalization from COVID-19 compared to individuals who had received the updated vaccine. Although the crude rates for unvaccinated and vaccinated individuals were similar in both seasons, the substantially higher risk among unvaccinated individuals was apparent in both seasons after age adjusting. This highlights the critical importance of age-adjusting the hospitalization rates since older individuals are both more likely to be hospitalized from COVID-19 and more likely to receive a COVID-19 vaccination. In 2023, the hospitalization rate for those 65 years and older was at least six times higher than younger age groups;[16] and 50% of Rhode Islanders who are 65 years and older received the most recent vaccine while only 10% and 18% of Rhode Islanders ages 22–49 and 50–64, respectively, were vaccinated.[17]

Overall, it appears that the protection from the latest vaccine was lower in 2023–2024 compared to the 2022–2023 season. This could be due to several factors, including the type of variants circulating during a season, and the effectiveness of the respective vaccines against these particular variants.[18]

The CDC recommends that all individuals aged six months and older receive an updated COVID-19 vaccine once after at least two months have passed since they received the previous COVID-19 vaccine.[19] It is also recommended that individuals 65 years and older receive a second dose of the 2023–2024 COVID-19 vaccine if they have not received a dose within the past four months, highlighting the vulnerability of this group.[19] In our study, Rhode Island residents who received an updated COVID-19 vaccine had increased protection against COVID-19 hospitalizations compared to residents who did not receive an updated vaccine, consistent with the rationale behind these CDC recommendations. However, despite these benefits, vaccine coverage in Rhode

Island has been decreasing and remains low, particularly in comparison to uptake of the influenza vaccine.[20]

There are several limitations to this study. First, immune-compromising conditions may have been a confounder that we were unable to adjust for.[18] Confounding due to immune-compromising conditions may have biased results towards the null. Second, hospitalization data does not reflect whether individuals were hospitalized due to COVID-19 or concurrently with COVID-19. Confounding due to cause of hospitalization may have also biased results towards the null. We did not have the ability to look into the specific reasons why individuals may choose not to be vaccinated, including medical contraindications, which in and of themselves may lead to increased risk of hospitalization. Additionally, this analysis did not have the statistical power to stratify by racial/ethnic group or residence in long-term care facilities, both of which are factors which could lead to increased risk of hospitalization.[18] Finally, we did not account for previous infection status, which may have conferred additional protection against hospitalization thus influencing vaccine effectiveness.[18] This means that results should be interpreted as the additional risk of not receiving the most up-to-date vaccine in a population that has various levels of immunity from prior COVID-19 infections.

The current analysis presents hospitalization rates and rate ratios during the 2022–2023 and 2023–2024 COVID-19 seasons for individuals who did and did not receive the most up-to-date COVID-19 vaccination. The results document the ongoing burden of severe disease that Rhode Islanders face from COVID-19 and highlight the effectiveness and continued importance of annual COVID-19 vaccination.

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Disclosure

The authors have no conflicts of interest to disclose.

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

VITAL EVENTS	REPORTING PERIOD		
	NOVEMBER 2023	12 MONTHS ENDING WITH NOVEMBER 2023	
	Number	Number	Rates
Live Births	913	10,799	10.2*
Deaths	914	10,873	10.3*
Infant Deaths	5	50	4.6#
Neonatal Deaths	2	30	2.8#
Marriages	407	6,458	6.1*
Divorces	187	2,504	2.4*

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

Underlying Cause of Death Category	REPORTING PERIOD			
	MAY 2023	12 MONTHS ENDING WITH MAY 2023		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	204	2,394	218.2	2995.0
Malignant Neoplasms	211	2,219	202.2	4,742.0
Cerebrovascular Disease	28	508	46.3	584.5
Injuries (Accident/Suicide/Homicide)	94	1,078	98.2	13,798.0
COPD	25	450	41.0	412.5

(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.

RHODE ISLAND MEDICAL SOCIETY

CONVIVIUM

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THURSDAY, SEPTEMBER 26, 2024

212TH ANNUAL MEETING and AWARDS DINNER

6:00 pm Reception, 7:00 pm Dinner

The Squantum Association, East Providence

Please join us as we thank our outgoing president, inaugurate new leadership, honor award recipients, and celebrate 212 years of organized medicine in Rhode Island.

Watch for your invitation soon.

Working for You: RIMS advocacy activities

June 3, Monday

RIMS Council meeting: **Heather Smith, MD, MPH**, President

RIMPAC Speaker Sherkarchi Fundraiser

Protect our Health Care Policy Group: Stacy Paterno, staff

June 4, Tuesday

RIMS Physician Health Committee (PHC): **Martin Kerzer, MD**, Chair

June 5, Wednesday

RIMS Networking Social at Narragansett Brewery

Healthcare for All monthly meeting: Stacy Paterno, staff

Health Professions Loan Repayment Program meeting: Stacy Paterno, staff

June 6, Thursday

Governor's State Health Systems Planning Cabinet: Stacy Paterno, staff

June 7–13

Annual Meeting of the AMA House of Delegates in Chicago: **Peter Hollmann, MD**, Delegate Chair; **Sarah Fessler, MD**, Delegate; **Thomas Bledsoe, MD**, Alternate Delegate; **Nikita Sood, MD**, and **Leif Knight, MD**, Resident and Fellow Section Delegates; **Heather Smith, MD, MPH**, RIMS President and ACOG Delegate; **Yul Ejnes, MD**, RIMS Past President and ACP Delegate; and Stacy Paterno, staff

June 12, 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

CTC-RI Primary Care Workforce Taskforce Meeting: Past Presidents **Peter Hollmann, MD**; **Elizabeth Lange, MD**; and **Mariah Stump, MD, MPH**, Secretary

June 13, Thursday

Raising RI Monthly Update: Stacy Paterno, staff

June 17, Monday

Rhode Island Quality Institute and RIMS Clinical Advisory Committee: Stacy Paterno, staff

Rhode Island Hospital New Residents Orientation: Stacy Paterno, and Steve Carreras, PhD; staff

RIDOH World Diabetes Planning Group: Stacy Paterno, staff

RIMS Public Laws Committee: **Michael Migliori, MD**, chair

June 18, Tuesday

Quarterly Meeting with Director of Medicaid: **Heather Smith, MD, MPH**, President; and Stacy Paterno, staff

CMS and New England Delegation Quarterly Meeting: **Heather Smith, MD, MPH**, President

[L–R] **Nikita Sood, MD**; **Sarah Fessler, MD**; **Thomas Bledsoe, MD**; and **Peter Hollmann, MD**, at the Annual Meeting of the AMA House of Delegates in Chicago, June 7–13.

[*L–R*] **James Crowley, MD**; **Fredric Christian, MD**; RIMS **President Heather A. Smith, MD, MPH**; and **Tilak K. Verma, MD, MBA**, attended the Retired Old Doctors Eat Out (RODEO) Annual Luncheon on June 19.

June 19, Wednesday

RODEO – Retired Old Doctors Eat Out Annual Luncheon: Co-hosts **Fredric Christian, MD**, Past President; and **Arun Singh, MD**; **Heather Smith, MD, MPH**, President

RIMS Membership Committee Meeting: **Thomas Bledsoe, MD**, Chair

June 20, Thursday

Climate Change & Health Committee Meeting: **Alison Hayward, MD**, Chair

Rhode Island Foundation Long Term Health Planning Committee: Stacy Paterno, staff

Rhode Island Oral Health Commission: Stacy Paterno, staff

June 24, Monday

Protect our Health Care Policy Group: Stacy Paterno, staff

CTC-RI Primary Care Workforce Planning Group: Stacy Paterno, staff

June 27, Thursday

Blue Cross & Blue Shield of Rhode Island Quarterly Meeting: **Heather Smith, MD, MPH**

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CHICAGO, ILLINOIS

RIMS AMA Delegates **Thomas Bledsoe, MD**; **Sarah Fessler, MD**; and **Peter Hollmann, MD**, in Chicago to attend the Annual Meeting of AMA House of Delegates, check the journal archives at the Tribune Tower on Michigan Avenue.

Stones and bricks from famous structures and all 50 states were incorporated into the street level of the building exterior with identifying inscriptions. Among the represented sites are the Taj Mahal, Parthenon, Hagia Sophia, Palace of Westminster, Great Pyramid of Giza, The Alamo, Notre Dame de Paris, Great Wall of China, Angkor Wat, and Rhode Island's Gaspee Point.

Wherever you may be, or wherever your travels may take you, check the Journal on your mobile device, and send us a photo: **mkorr@rimed.org**.

The Merits of Team-based Primary Care for the Underserved

DINO MESSINA, MD, PhD; LAURA MCAULIFFE, PharmD BCACP, CDCES

INTRODUCTION

The American College of Physicians (ACP) published a recent position statement reminding us about the importance of team-based care models in primary care.[1] Models such as the Patient-Centered Medical Home improve patient outcomes and increase well-being among health care professionals. Despite these benefits and positive attributes, adoption of this approach has been limited in primary care. This brief communication offers the perspective of a pharmacist and primary care physician and the benefit of providing team-based primary care at a safety-net ambulatory clinic in Providence, Rhode Island.

PHYSICIAN'S PERSPECTIVE

An article published in 2022 by Porter and colleagues highlights some of the challenges faced by primary care physicians (PCPs) practicing on their own.[2] This study assigned a panel of 2,500 patients to a hypothetical primary care physician. They concluded that it would require a solo practitioner 26.7 hours per day to provide care, comprising 14.1 hours/day for preventive care, 7.2 hours/day for chronic disease care, 2.2 hours/day for acute care and 3.2 hours/day for documentation. However, a team-based model can help provide the needed assistance to get the same work accomplished in a more reasonable 9.3-hour time frame. Yarnall et al acknowledged the difficulty PCPs face meeting the United States Preventive Services Task Force (USPSTF) recommendations for preventive services due to time constraints when physicians have large panels. They concluded that large number of screening recommendations coupled with large numbers of patients made it difficult to meet preventive care guidelines.[3]

Those of us who provide care for the socially disadvantaged (underinsured, uninsured, and high-needs patients with complex medical co-morbidities) encounter additional patient care challenges. How can we address the patient's medical problems when they are unable to afford the medications we prescribe, or make it to our office on time due to transportation problems? Many of our patients also struggle with housing/food insecurity and health literacy. These social determinants of health contribute to health inequities and pose adverse health consequences for our patients.[4] The additional time needed for medical care under these circumstances cannot possibly be accomplished in a traditional primary care setting with 15-minute appointments. Team-based primary care that provides care coordination, help with medications and health coaching, as well as assistance with transportation is requisite in meeting the global needs of our patients. Primary care re-design that incorporates team-based care is needed or we will continue to offer a model that doesn't work for our patients and physicians, contributing to ongoing poor health care outcomes for the patients and continued frustration and burnout for the physicians.[5] Bodenheimer et al point out that our health care system needs to increase the proportion of health care expenditures going to primary care and make sure physicians are not overloaded with large panels.[6] Questions remain about how to fund staffing efforts to support team-based primary care. Given the current primary care physician shortage, high physician burnout and challenges in treating the underserved, one has to ask why we have been slow to adapt and align with the goals of the most recent ACP position statement.

We are one of three ambulatory sites for the Brown Internal Medicine training program. Dedicated social workers, community health workers, nurse care managers and pharmacists are integrated into our clinic workflows. Our academic, patient-centered medical home model has several interdisciplinary clinics targeted to meet the needs of our patients. In 2017, we started our complex care clinic, to address high utilization. This approach was successful in reducing emergency room and inpatient utilization by 56% for a group of high needs/high cost patients.[7] Pharmacists have been integrated into primary care health care systems for some time[8] and we have found exceptional value working side by side with our clinical pharmacists. The following are examples of situations where clinical pharmacist intervention has proven beneficial for us:

- Homebound patients: Our pharmacists are able to help us come up with creative strategies such as pill packing with home delivery.
- Refills/Prior authorizations: Pharmacist oversight using evidence-based protocols have helped decrease physician in-basket burden.
- Covid: During the initial phase of the Covid pandemic, patients in need of anti-viral treatment required scrutiny for drug interactions and pharmacy availability; team-work allowed for improve efficiency.

- Anticoagulation: Coumadin-based anticoagulation requires patient education and consistent monitoring. We are grateful for the co-management assistance from our pharmacist-run anti-coagulation clinic.
- Patients with poorly controlled diabetes and high blood pressure benefit from co-management with our clinical pharmacist-run diabetic and hypertension clinics.
- Substance use disorders: Treatment with monthly vivitrol, and buprenorphine (both sublocade and brixadi) injections and help with suboxone prescribing

Patients with polypharmacy and those at risk for adverse drug reactions have access to our medical reconciliation clinic to look for opportunities to de-escalate and address the Beer's criteria list for the elderly.

PHARMACIST'S PERSPECTIVE

Clinical pharmacists have various roles in caring for patients in the ambulatory setting, such as completing an accurate medication reconciliation, taking a blood pressure, and developing medication treatment plans. We learn these skills while obtaining our PharmD degree, during clinical rotations, and post-graduate training. Pharmacists are also trained in motivational interviewing, something that is valuable when caring for patients with complex needs. For instance, pharmacists can modify their medication counseling and recommendations for patients who were recently incarcerated and are transitioning home; or patients who may be using insulin but do not have a working fridge or do not have a smartphone to use devices that upload information to an app. Therefore, we are uniquely positioned to help underserved patients navigate the healthcare system.

Working in an underserved, academic setting with other providers and trainees is a valuable opportunity for collaboration. Pharmacists are skilled in tailoring our recommendations to each patient's specific goals and situations, such as affordability, and coaching the providers on the process for accessing medications through payors or discount programs. For instance, a patient without insurance will not be able to afford all the first-line guideline recommended medications, but we can recommend the next best options and at which pharmacy. In addition, pharmacists can assist the provider with ensuring they order all the appropriate ancillary items for a patient, such as specific glucometer and insulin supplies. We can also identify preventive measures and gaps in care, such as recommending and administering immunizations. We provide counseling on how to help a patient improve their adherence to medications by enrolling in pill packing, home delivery, and automatic refill services.

Often physician trainees are not familiar with certain medication challenges the underserved population may face, but after working with a pharmacist, they are better equipped to apply similar principles and approaches to all their patients. For instance, pharmacists can coach physicians on services that may seem intuitive but are often misunderstood, such as pill packing and medication refills. It is a fulfilling experience for pharmacists to have the opportunity to work collaboratively with providers and trainees. Together, we can help patients overcome major barriers and achieve more as a team than individually.

CONCLUSION

Our experience with physician-pharmacist teams improves primary care workflows, and staff well-being. Our high-needs patient population benefits from this model of primary care.

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The Louise Wilcox ALS Clinic at Rhode Island Hospital: 25th Anniversary (1999–2024)

VINCENT A. LABARBERA, MD; ERIN GILL, RN; NICHOLAS S. HILL, MD; GEORGE SACHS, MD

KEYWORDS: Amyotrophic Lateral Sclerosis (ALS), Louise Wilcox, multidisciplinary clinic, anniversary

Image 1. The late **Louise Wilcox**, an accomplished chef who was the inspiration and motivator for the establishment of the ALS clinic at Rhode Island Hospital that now bears her name.

It is with great pride that we announce that the Louise Wilcox ALS Clinic at Rhode Island Hospital is celebrating its 25th anniversary. Inaugurated in 1999, the clinic has grown substantially over the course of a quarter century, while implementing advances in the diagnosis and treatment of Amyotrophic Lateral Sclerosis (ALS) here in Rhode Island.

The clinic was named for Louise Wilcox, a graduate of the Culinary Program of the Rhode Island School of Design and an accomplished executive chef and cookbook author, who started developing symptoms of ALS at age 33 (**Images 1–3**). She continued to cook at a high level, despite her progressive debility, even adapting her kitchen to allow the use of her motorized wheelchair.[1] A resident of Westport, Massachusetts, Louise attended multidisciplinary ALS clinics in Boston and resolved that this level of care should be offered locally to Rhode Islanders with ALS. Her spirit and drive were instrumental in launching the clinic that now bears her name after her passing.

Although the passion and expertise of the clinic has not changed since 1999, the scope of the care provided certainly has grown over the years. The clinic started with a handful of patients during the first year, who were seen in a clinic on Dudley Street in Providence. The clinic then moved to its current, updated facilities in the Ambulatory Patient Center (APC) at Rhode Island Hospital in 2015. Registration records, as kept by ALS United Rhode Island, indicate that a total of 711 patients have been diagnosed with ALS in Rhode Island since 2013, many of whom have received care at the Louise Wilcox Clinic, with 55 patients seen in 2023 alone – certainly an uptick in numbers since the start of the clinic. With an estimated prevalence of 5.5 people per 100,000 living with ALS in the Northeast US, Rhode Island would, statistically, have about 50–60 people living with ALS.[2]

Image 2. Louise Wilcox, center, in a photo circa 1999, is shown with **Dr. Nicholas Hill** and **Ruth Dickinson, RN**.

Image 3. The clinical staff at the Louise Wilcox ALS Clinic at Rhode Island Hospital, in a photo from 2021, are, from left, **Erin Gill, RN**; **Michelle Cupolo, PT**; **Sarah Overy, OT**; **Dr. Vincent LaBarbera**, **Dr. George Sachs**, **Dr. Nick Hill**, **Robin Vales, RD**, and **Beth Baccari, SLP**. [PHOTOS COURTESY OF THE LOUISE WILCOX ALS CLINIC AT RHODE ISLAND HOSPITAL]

TREATMENT, TESTING, RESEARCH

Symptomatic and respiratory care, in addition to dietetics/nutrition, speech-language pathology and occupational and physical therapy services, were, and remain, the mainstays of treatment for this disease. In 1999, only one FDA-approved medication, riluzole, was available for the treatment of ALS. This medication initially was shown to modestly prolong lifespan among people with ALS,[3] although more recent real-world data[4] may suggest a more substantial lifespan prolongation with riluzole.

The ensuing years have seen the approval of the infusion edaravone in 2017, shown to further slow the progression of the disease,[5] followed by its oral formulation in 2022, making the treatment available to patients who could not utilize an IV port. More recently, the first approved treatment for familial ALS, the intrathecally- (via a spinal tap) administered tofersen for Superoxide Dismutase 1 gene (SOD-1)-positive ALS, became available.[6] Unfortunately, the medication sodium phenylbutyrate-taurursodiol, which had achieved conditional FDA approval in 2022, was recently pulled from the market (April 2024) due to unfavorable Phase III trial data.

The cost of these medications can prove to be a significant barrier to patients seeking their use. Thankfully, with a diagnosis of ALS, these medications are typically available and covered by commercial insurance, although certain inclusion criteria, namely duration of disease, pulmonary function parameters, and current functional status, are required (specifically for the use of edaravone). The respective pharmaceutical companies have programs which can help to defray cost as well. Additionally, ALS is an entity covered by Medicaid and Medicare. Without these programs, riluzole can cost approximately $7600 per year, edaravone approximately $173,000 per year, and tofersen approximately $199,200 per year.[7]

Over this time frame, advances in the availability of genetic testing have now afforded all patients with ALS the opportunity to undergo testing and, potentially, treatment of the most common gene mutations. Further genetic treatments are in the research pipeline. Currently, all patients with a diagnosis of ALS are offered genetic testing. Genetic testing is often covered by commercial insurance, but at present, sponsored testing from pharmaceutical companies is also widely used to defray out-of-pocket costs to our patients.[8]

CLINIC PROVIDERS

The medical providers who staff and coordinate the clinic, and the team members at ALS United who run the community services, including support groups, the durable medical equipment loan closet, transport services to and from medical appointments, among other services, are the glue that keeps the clinic together. Dr. George Sachs, the clinic's first and longest-serving medical director, was the sole neurologist of the clinic for more than 20 years before his retirement in 2022, preceding the arrival of the current clinic medical director and neurologist, Dr. Vincent LaBarbera in 2021. Dr. Nicholas Hill has served since the clinic's inception as its senior pulmonologist. Dr. Michael Stanchina and Dr. John Ladetto have volunteered time to the clinic, and currently, Drs. Hill and Ladetto alternate as pulmonologists to our patients. A multitude of neurology and pulmonology residents and fellows from the Brown University/Rhode Island Hospital and Tufts Medical Center systems have also gained invaluable educational experience while rotating through the clinic.

The therapy staff, including physical therapist Michelle Cupolo, occupational therapists Sarah Overy, Jean Fraize, and Angela Pucino, speech language therapists Elizabeth Baccari and Amy Muschiano, and dieticians Robin Vales and Barbara Santurri aim to help our patients maintain their optimal function, regardless of insurance or immigration status. At present, our clinic refers out to colleagues in the community for mental health/psychological therapy and social work, as well as to psychiatry and palliative care services.

The contributions of our clinic coordinators, starting with Ruth Dickinson, RN, whose father-in-law succumbed to ALS, and currently, Erin Gill, RN, and our volunteers, including, over the years, Linda Boudewyns and Linda Benish, cannot be overestimated. They assure the smooth functioning of the clinic and provide many services to our patients and their families, helping them obtain needed equipment and making connections with other providers such as outside physicians and durable equipment companies. The clinic is also deeply indebted to the loyal support of ALS United Rhode Island, formerly the ALS Association, Rhode Island Chapter.

SUMMARY

The Louise Wilcox clinic has seen tremendous growth in the past 25 years, and we are excited to see how the clinic can continue to thrive. With the promise of medications and new therapies in the pipeline, we hope that our services will be much less

needed at some point in the not-too-distant future. But until then, we aim to continue to serve this community of patients, to provide care, to educate patients, families, and the next generation of medical providers, such that our patients and families do not have to face this devastating diagnosis alone, and to maintain dignity and hope – as neurologist W. Bryan Matthews expressed it: "The best test of a physician's suitability for the specialized practice of neurology is not his ability to memorize improbable syndromes but whether he can continue to support a case of motor neurone disease, and keep the patient, his relatives and himself in a reasonably cheerful frame of mind."[9]

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RIDOH issues approval with conditions of initial application for sale of Fatima, RWMC

PROVIDENCE – The Rhode Island Department of Health (RIDOH) announced on June 20th its approval with conditions of a Hospital Conversion Act (HCA) application for the sale of Roger Williams Medical Center and Our Lady of Fatima Hospital. The decision contains several stringent conditions intended to ensure the financial viability of the hospitals, stable operational structures at the facilities, and a continued commitment to health equity and the needs of all patients in the hospitals' communities.

The hospitals are currently owned by Prospect Medical Holdings and are operated by CharterCARE Health Partners. These hospitals provide essential services to vulnerable populations in the state and are served by staffs of dedicated and committed healthcare workers. The prospective buyer, the Centurion Foundation, is a Georgia-based non-profit company.

"Rhode Island needs a stable network of hospitals that supports the health and wellness of every community in the state," said Director of Health **JERRY LARKIN, MD**. "In light of the historical and ongoing financial and operational challenges at the hospitals, RIDOH issued a decision today with conditions carefully developed to restore local control, help stabilize these two facilities, and help ensure that the new operators would be positioned to provide consistent, safe, high-quality care."

RIDOH and the Rhode Island Attorney General review HCA applications. Attorney General **PETER F. NERONHA** also issued an approval of the HCA application today, with a separate set of conditions.

Separate, additional approvals of Change in Effective Control (CEC) applications are also required of the transacting parties. All licensed healthcare facilities are subject to CEC reviews for changes that would affect 50% or more of the entity's ownership, assets, membership interest, authority, or control. Only hospital transactions are subject to an additional HCA review. RIDOH alone issues decisions on CEC applications after the Director of Health receives recommendations on those applications from the Health Services Council. (RIDOH has not yet received complete CEC applications for the sale of Roger Williams Medical Center and Our Lady of Fatima Hospital.)

The conditions contained in the decision include:

- Centurion is responsible for ensuring the hospitals remain in good standing with financial obligations.
- Governing bodies for the hospitals must be maintained and include a majority of independent board members and individuals with experience in hospital operations, healthcare, finance, law, business, labor, investments, community purpose, and diversity, and they must represent the diverse populations served by the hospitals.
- The transacting parties must hire a Chief Restructuring Officer to manage business affairs, oversee financial management, and explore strategic alternatives.
- Prospect Medical Holdings must settle certain outstanding balances with vendors and fund necessary repairs to the hospitals.
- The hospitals may not eliminate or significantly reduce healthcare services without approval from RIDOH. ❖

Attorney General imposes significant conditions on proposed hospital ownership change

PROVIDENCE – Attorney General **PETER F. NERONHA** announced on June 20th that the Office of the Attorney General has issued a decision, pursuant to its authority under Rhode Island's Hospital Conversions Act (HCA), to conditionally approve a transaction that would allow a change in ownership of a health care system that includes two local safety net hospitals, Roger Williams Medical Center and Our Lady of Fatima Hospital, from Prospect Medical Holdings to The Centurion Foundation.

The decision follows a robust review process in accordance with the HCA. The Rhode Island Department of Health (RIDOH), the other state regulator empowered to oversee hospital conversions in Rhode Island, separately issued its own decision on the transaction.

The Attorney General's review revealed significant shortcomings and concerns with the proposed transaction. Accordingly, at the core of the Attorney General's decision are strong conditions that respond to those concerns and are necessary to ensure the viability of the system and the continuity of health care services and operations at Roger Williams Medical Center and Our Lady of Fatima Hospital. These conditions require proper funding, management, planning, and community input and benefit, as non-negotiable stipulations for the approval of the sale.

"Our team was guided by the baseline principle that Rhode Islanders deserve quality, accessible and affordable health care," said Attorney General Peter F. Neronha. "We also know that the future of these hospitals is critical to the collective landscape of health care in Rhode Island. This decision and the conditions we have placed on the transfer of ownership were only arrived at after careful consideration and strong scrutiny."

Altogether, the Attorney General's decision imposes 40 unique conditions across seven areas, with the following conditions highlighted as particularly critical to ensure the viability of the system and its hospitals:

- To address the currently precarious status quo and to address the application's failure to present an adequate level of funding for the hospitals to meet their operating and capital needs;
- Prospect must cure all of the life safety and physical plant violations cited by state and federal regulators, including but not limited to, repair of the roof and inadequate life safety equipment;
- Prospect must come into compliance with the 2021 Decision, including ensuring payment of outstanding accounts payable owed to vendors of the Rhode Island Hospitals;
- Prospect and Centurion must commit to guarantee $80 million in cash financing to add to the books of the New CharterCARE System, regardless of any failure to secure that amount through the bond transaction;
- Prospect and Centurion must contribute an *additional* $66.8 million to a dedicated fund, toward which Prospect may apply the outstanding escrow funds (~$47 million) from the 2021 Decision, to support the newly non-profit New CharterCARE System – funds which will not be available for Centurion's management fee or for executive compensation; and
- Centurion's management fee will be paid only to the extent that the Transacting Parties remain in compliance with all conditions of the Decision;
- To mitigate poor management practices in the past by distant and self-interested owners, the board of the New CharterCARE System must adopt specific best governance practices, include local and community input, and may not alienate, encumber, or pledge New CharterCARE System's assets without notice to and approval by the Attorney General;
- To address the application's lack of a credible plan to turn CharterCARE System's long history of operating losses into New CharterCARE System's ongoing state of sustainable operations, Prospect and Centurion must fund a turnaround consultant to be approved by the Attorney General;
- To address the application's reliance on future, contingent events like IRS approval of non-profit status for any chance of success, conditions specifically mandating the timing, level of effort, and manner in which these steps must be completed;
- To ensure that the community's needs are adequately served, New CharterCARE System must adhere to industry standards for charity care and adequately fund identified community health needs; and
- To ensure continuity of quality care, the New CharterCARE System must notify the Attorney General of any reductions in workforce that meet a certain threshold, and must maintain the current level of employee benefits during the initial period following the closing of the Proposed Transaction. ❖

With new investments and affiliation agreements, Lifespan to become Brown University Health

PROVIDENCE, RI [LIFESPAN AND BROWN UNIVERSITY] – Amid ongoing headwinds facing the health care sector, Lifespan health system and Brown University have finalized terms on a set of expanded affiliation agreements. As part of the agreements, Lifespan will change its name to Brown University Health later this year.

Lifespan President and CEO **John Fernandez**

Brown President **Christina H. Paxson**

The agreements also include reciprocal financial investments between Lifespan and Brown, which will continue as separate, independent organizations after the implementation of the Lifespan rebrand to Brown University Health. A $15 million to $25 million annual investment from Brown to Lifespan, totaling $150 million over seven years, will be devoted to strengthening Lifespan's financial capacity to sustain and advance the shared academic mission of the two organizations. Following that period, Lifespan will invest $15 million annually to support the Warren Alpert Medical School's education and research efforts.

Lifespan President and Chief Executive Officer **JOHN FERNANDEZ** and Brown President **CHRISTINA H. PAXSON** shared details on the new agreements in a Thursday, June 20, event at Hasbro Children's Hospital. Fernandez said these continue to be difficult times in health care, and it is more important than ever that Lifespan solidify and strengthen ties between patient care delivery and Brown as its academic partner.

"We are excited to move forward with robust plans to expand our facilities and improve our systems and technology to be able to compete with new entrants to the health delivery market, such as national chains," Fernandez said. "This enhanced relationship with Brown is one part of the solution to ensure that our health system can continue to offer the people of Rhode Island the opportunity to access high-quality treatment close to home."

Paxson said the agreements advance Brown's goals to ensure that medical students, residents and fellows are learning from outstanding clinicians with opportunities to train using the latest technology and techniques. Brown's investments promise to accelerate improvements including the expansion of electronic health records, and the recruitment of talented academic and clinical leaders as care providers and department chairs for Brown's Warren Alpert Medical School and its affiliated hospitals.

The agreements follow votes by the Lifespan Board of Directors and the Corporation of Brown University, each of which approved a non-binding term sheet directing their leadership teams to negotiate an extension and expansion of the affiliation agreements between the organizations. Lifespan and Brown have long-standing affiliations, which designate Rhode Island Hospital as the principal teaching hospital for Brown's Warren Alpert Medical School, the only medical school in the state. The affiliation dates back to 1969, before a four-year medical program was established at the University.

Investments in Academic Medicine

Fernandez said that in the face of a rapidly and ever-changing health care environment, the new agreements offer a timely and critical step to strengthen a Rhode Island-based health care delivery system and biomedical research structure. He asserted that the industry will likely confront significant headwinds for the foreseeable future, including inflation, labor shortages and low reimbursement rates. For Lifespan, lack of adequate funding over many years has hampered the ability to keep pace with necessary infrastructure investments, he said.

The agreements outline financial investments to address those challenges and establish deeper Brown-Lifespan collaborations in clinical care, medical education, population health, public health and biomedical research.

"It is critical that facilities, systems and technologies are not only modernized, but are cutting-edge in order to be able to compete with out-of-state companies, new entrants to the market and large national providers, particularly for-profit businesses," Fernandez said. "Equally important is investing in workforce development to retain existing, first-rate clinicians and employees and to recruit future top talent. This enhanced relationship is one step in a broader effort to ensure that Rhode Island can continue to offer access to the highest quality medical treatments in a local setting while at the same time generating high paying job opportunities for years to come."

The new agreements impact four broad areas:

(1) New Name

The health system will continue to use the name Lifespan in all of its business operations until its new name officially launches on a to-be-determined date, expected later this year, with the full rebrand taking several years to complete. The official rebranding of Lifespan to Brown University Health – to be referred to commonly as Brown Health – will help the health system recruit and retain physicians, grow research as a recognized academic medical center, and sustain a vibrant medical education program. This will reflect the ability to provide medical care of international caliber to Rhode Islanders, according to health system and University leaders.

(2) New Financial Investments

Beginning July 1, 2024, Brown will make annual contributions of $15 million to $25 million – totaling $150 million over seven years – to support the mission of Lifespan. Following that period, Lifespan will invest $15 million annually for Brown's medical school to support research and medical education, for the life of the agreement.

In addition, the Brown Investment Office will manage approximately $600 million to $800 million of Lifespan's investment portfolio, creating the capacity for increased returns to support Lifespan's mission. The portfolio will be phased in on a schedule expected to be about $200 million per year over four years.

Examples of mission-oriented Lifespan activities and strategic initiatives the funds will be used for include:

- Recruiting physicians to improve access to care for more Rhode Islanders and to attract more patients to come to Rhode Island for care. Increasing out-of-state patient services revenue will help Lifespan offset local costs, while also increasing the number of well-paying health care jobs for Rhode Islanders.
- Investing in state-of-the-art facilities for training world-class physicians and conducting innovative biomedical research in support of a revitalized, resilient and reliable health care system in Rhode Island.
- Continued investment in programs that improve the health, welfare and economy of underserved communities locally. The Lifespan Community Health Institute offers hundreds of programs, events and community service activities serving tens of thousands of southern New Englanders annually. This investment will help Lifespan continue its work to eliminate health disparities and promote health equity through healthy behaviors, healthy relationships and healthy environments.
- Expanding the reach of the Lifespan electronic health record (EPIC). This will allow patients, physicians and medical students to view records for primary care, hospital, specialty, laboratory and imaging services in one portal, enabling more coordinated care by providers, and enhancing the accessibility of health data approved for use in research to improve patient care.

(3) Enhanced Academics and (4) Governance

The agreements establish that the Warren Alpert Medical School dean will serve as Lifespan's chief academic officer. In addition, the president of Brown and the dean of its medical school will become ex officio members of Lifespan's Board of Directors.

The agreements also formalize a series of terms around academic affiliations:

- Rhode Island Hospital will continue to be formally designated as the principal teaching hospital of the Warren Alpert Medical School, recognizing the scope and critical mass of teaching and research activities centered exclusively at Rhode Island Hospital. The other Lifespan teaching hospitals (The Miriam Hospital and Bradley Hospital) will continue to be designated as major teaching affiliates. In addition, Newport Hospital will serve as a community affiliate.
- The Warren Alpert Medical School will be the exclusive medical school affiliate of Lifespan, and Lifespan will continue to be the home of 11 of the medical school's clinical departments. Family medicine, OBGYN and psychiatry academic and clinical chairs will continue to reside at Care New England's Kent, Women & Infants and Butler hospitals. Brown will also maintain its strong academic affiliation agreements with Care New England, the Providence VA Health System, HopeHealth and Brown Physicians, Inc. for teaching, faculty development and research.
- Lifespan will continue to be affiliated with other educational institutions (such as the University of Rhode Island, Rhode Island College and Community College of Rhode Island) for clinical education programs not currently offered at Brown.

Aligning Strengths

Lifespan and Brown are not merging, neither organization will purchase any part of the other, and they will remain separate and independent. For these reasons, the enhanced agreements did not require regulatory or legislative approval. Lifespan and Brown leaders noted they engaged the Rhode Island Department of Health and Office of the Attorney General, and said they appreciated the efforts of both agencies in conducting separate reviews. This included fruitful discussions with the Attorney General, who confirmed that no further regulatory review is required at this time. ❖

Bruce A. Scott, MD, inaugurated as 179th AMA president

CHICAGO – **BRUCE A. SCOTT, MD**, an otolaryngologist from Kentucky, was sworn in on June 11th as the 179th president of the American Medical Association (AMA).

"I became a physician to care for patients, and we all know that's getting tougher every day," Dr. Scott said in his inaugural address. "Our health care system should help physicians provide good care, not get in the way!

"Physicians are struggling with two decades of spiraling Medicare payment cuts and ever-increasing administrative burdens. These concerns are no longer theoretical.

"Almost two-thirds of physicians show signs of burnout. One-third plan to reduce their hours. One in five physicians are hoping to stop practicing or retire in the next two years. Physicians are literally closing their doors. We can't afford to lose even one more doctor! As a physician in an independent practice, I live these issues every day. I see my colleagues struggling. I feel the urgency of the moment. I will bring that urgency to my presidency. You better believe I'm ready to fight."

Dr. Scott has been a leader in medicine throughout his career and a member of the AMA House of Delegates (HOD) for over 25 years. First elected speaker of the AMA HOD in 2019, he previously served as vice speaker and joined the AMA Board of Trustees in 2015.

Based in Louisville and board-certified in both otolaryngology and facial plastic surgery, Dr. Scott is president of Kentuckiana Ear, Nose & Throat, a six-physician independent private practice group, medical director of Premier Ambulatory Surgery Center, and holds a clinical appointment at the University of Louisville School of Medicine.

Bruce A. Scott, MD, at left, with his wife Christy by his side, was sworn in by AMA Board of Trustees Chair Willie Underwood III, MD, as the 179th president of the American Medical Association during its annual meeting held in Chicago in June.

Dr. Scott has been president of his state and county medical associations and continues to serve on the board of the Greater Louisville Medical Society and the Kentucky Medical Association. As a leader of these associations, he has fought for access to care for vulnerable populations, improvement in public health and reduction of administrative burdens in health care.

Dr. Scott earned his undergraduate degree at Vanderbilt University, completed his medical education and residency at the University of Texas Medical Branch (UTMB Health) in Galveston, Texas, and a fellowship at the University of Texas Health Science Center at Houston. ❖

[*Editor's note: The following are excerpts from the inaugural speech by Bruce A. Scott, MD, at his swearing in, which RIMJ attended via Zoom.*]

My Life was Changed by a Doctor

BRUCE A. SCOTT, MD

Good evening and thank you so much for that kind introduction, Dr. Underwood.

Thank you to my esteemed colleagues seated behind me – the exceptional men and women who have held the office of AMA president with honor and distinction – physician leaders from every state, my personal guests who have joined me on stage, each of you has played an indispensable role in my life. And to all of you, it is a privilege to speak to you tonight.

As you heard, I have attended 72 consecutive House of Delegates meetings, that's 36 inaugurations – I have to say, "This one is my favorite!"

I've witnessed amazing physician leaders, over the years, stand at this podium and take that oath. What a rare and precious honor it is for me to stand among the remarkable leaders who've preceded me, many of whom are on this stage with me tonight.

…One of those who is not on this stage tonight is Donald Palmisano. You might have noticed a chair left empty for him in the row of former presidents. Donald was my mentor when I was the young physician on the Board – he probably wondered what he did to deserve that punishment. We actually became close friends.

He called me the "Young Grasshopper," taken from the movie, Karate Kid. I know he is here with me tonight in spirit, as he always promised he would be at my inauguration. Donald always believed, frankly even more than me that someday I would take that oath.

He learned from his father, a beat cop in New Orleans, the advice that he shared with me and so many others, "Do your homework, have courage, never give up." I was listening, Donald.

Thank you also to my family and dear friends who have traveled to

be here this evening – it means so much to share this special moment with you. I know that I only stand here tonight because of the love and support from so many people, many gathered here, and others here in spirit. I am humbled, and grateful.

And I AM READY. As I look out at the faces of so many fellow physicians, I am reminded of the enormity of the decision we made when we chose this profession, and our ability to change lives.

I am reminded of the passion we share for this joy called medicine.

I am in awe off the trust our patients place in us to help them to heal them.

And I am eternally grateful for the way my life was changed by a doctor.

My brother John and I enjoyed building and flying model airplanes as kids. One Saturday afternoon when I was about 12 years old, we were working on one of those planes in the garage of our family home. We needed something from up high in the rafters, so I climbed a ladder and was reaching above my head when the ladder slipped, and I fell. I grabbed for something, anything that would stop my fall…and sure enough, what I caught was a large metal hook that held various tools.

It went straight through my hand.

There I was, in pain and in shock, bleeding down my arm. My mom heard my brother's screams and came running. Later she told me she almost fainted when she saw the hook through my hand. My parents got me to the nearest ER, hook-in-hand, with the spark plug wrench and other tools still hanging on it.

After an examination by a general surgeon, the doctor pulled my parents to the other side of the curtain separating the exam bays. You all know the curtain I'm talking about.

The doctor told my parents that I would need surgery and that I was unlikely to EVER regain normal use of my hand, AND I would probably lose at least two fingers.

Let me tell you, those curtains are not as soundproof as we doctors sometimes think. I heard every single word.

My parents were horrified. But they were not deterred. They believed in the power of physicians to heal, and they were determined to find a doctor who could help me. They took me to Jewish Hospital, home to one of the premier hand surgery fellowship programs in the country. One of their lead surgeons, Dr. Joseph Kutz, operated on my hand that same day. He removed the hook, tools and all.

Dr. Kutz saved my hand and spared my fingers, forever changing the course of my life, and, although I didn't know it at the time, putting me on the path that led to tonight – to this stage, to this incredible moment.

I am a surgeon using this very hand because of a doctor.

…Now, let me tell you why I'm here.

I am passionate about practicing medicine. I am proud of our profession.

What physicians do every day has the incredible power to change lives for the better. I'm proof of that. But as a practicing physician, I can only impact one person at a time.

The AMA does for physicians and our patients what we as individual physicians cannot do.

At my first AMA meeting, I saw the power that physicians could have when we come together as a unified body. All these years later, I still believe the AMA can and does make a difference for our patients and our profession.

We are committed to protecting the patient-physician relationship.

Standing up for science and the ethical practice of medicine.

Pushing back against reckless scope expansions.

Fighting for fair payment that supports thriving practices.

Pressing for relief from administrative burdens so that physicians can focus our attention on what matters most, our patients.

The AMA is the physicians' powerful ally in Congress, in state capitals, in the court room, the board room and the exam room. And the policy issues we discuss and debate here are my working reality. More than at any time I can remember, the AMA matters.

But when the battles are difficult, and victory feels out of reach, it's important to remember our WHY.

It's important to remember what brought us here, WHY we fight.

…I have been blessed to receive many kind notes from patients and words of appreciation over the years. And as much as my patients say that I have helped them, it is their words, and their gratitude, that are my greatest rewards.

This is why we fight. They are why we fight.

When I remember the look on the face of the man, and his spouse, when I told them that the tumor was benign and we were able to save his facial nerve, anticipating a full recovery…

I am reminded of our power to heal.

When I recall the smile of the teenage boy who looked in the mirror as I removed the splint from his previously twisted nose and he was able to breathe through it for the first time in years…

I am reminded of our power to restore.

When a woman told me that the repair of her facial fractures and scars gave her the confidence to leave an abusive relationship, restoring not only her beauty but more importantly her dignity …

I am reminded of our power to change lives.

But most remarkable was the woman for whom I had little to offer who said, "Thank you for listening. Bless you and all the doctors for what you do."

I am reminded, in each of these moments, of our power for caring and compassion.

Years after my hand surgery, I returned to Jewish Hospital, not as a patient, but as an otolaryngologist. One day, I saw my surgeon, Dr. Kutz, in the physicians' lounge. I showed him my hand and I thanked him. He said he remembered the young boy with the hook and all the tools still attached. After thousands of hand surgeries, I suspect he was just being nice, but it didn't matter. He was my doctor. He changed my life. In so many ways he made this night possible.

Each of us is shaped by experiences in our past. But on this night, inauguration night, we look forward to the possibilities of tomorrow. Our future is not the one we wish for but the one we FIGHT for together.

We are not defined by what divides us but what unites us.

We are bound together by our profession, and we must stand together as physicians.

I am honored to be your president and to lead us into that future.

Now, let's get to work! ❖

Bobby Mukkamala, MD, chosen as AMA President-Elect

CHICAGO – Physicians and medical students at the American Medical Association's (AMA) Annual Meeting elected **BOBBY MUKKAMALA, MD**, an otolaryngologist from Flint, Mich., as the new president-elect of the nation's largest physician organization.

Dr. Mukkamala, who has been active in the AMA since residency, is chair of the AMA Substance Use and Pain Care Task Force, serving as a strong voice in advocating for evidence-based policies to end the nation's overdose epidemic. He also played a central role in response to the Flint water crisis, serving as chair of the Community Foundation of Greater Flint with a focus on funding projects to mitigate the effects of lead in children.

Dr. Mukkamala is a past recipient of the AMA Foundation's "Excellence in Medicine" Leadership Award. He was elected to the AMA Council on Science and Public Health in 2009 and served as its chair from 2016 to 2017, before being elected to the AMA Board of Trustees in 2017 and 2021. He has served as a member of the Michigan State Medical Society Board of Directors since 2011, as board chair for two years, and as its president. He is also a past president of the Genesee County Medical Society (GCMS) and continues to serve on the GCMS Board of Directors.

The son of two immigrant physicians, Dr. Mukkamala was inspired to go into medicine and return to his hometown of Flint to serve the community that welcomed his family decades before.

Dr. Mukkamala graduated from the University of Michigan Medical School and completed his residency at Loyola University Medical Center in Chicago. ❖

AMA applauds Supreme Court ruling preserving access to mifepristone

The following statement is attributable to
Bobby Mukkamala, MD
President-Elect, American Medical Association

"The American Medical Association applauds today's [June 13] unanimous ruling by the U.S. Supreme Court that preserves access to mifepristone for millions of women across the country.

"Efforts to second guess the FDA's scientific judgment and roll back access to mifepristone were based on a sham case that not only lacked standing, but relied on speculative allegations and ideological assertions to undermine decades of rigorous scientific review proving the drug is highly safe and effective for both termination of pregnancy and for medical management of miscarriage.

"Substantial evidence shows that restricting access to needed abortion care without justification carries a psychological, physical, and economic toll. Current data show an association between restricted access to safe and legal abortion and higher rates of maternal morbidity and mortality, with already vulnerable populations experiencing the greatest burden.

"The AMA will continue to support access to safe and effective reproductive health care against the ongoing threats of interference in the practice of medicine." ❖

After falling short last Congress, prior auth bill primed for passage

CHICAGO – With the American Medical Association's (AMA) strong support, members of the House and Senate introduced bipartisan legislation today to streamline and standardize the use of prior authorization within Medicare Advantage, building on its widespread support in the last Congress.

An updated version of the **Improving Seniors' Timely Access to Care Act** features targeted policy changes to reduce the scored cost of the legislation, which was an obstacle last Congress.

"We thank the sponsors for writing the bill so it will attract even more support. We came close last Congress to passing this much-needed reform. Our patients know all too well that prior authorization needs a dramatic overhaul. We think this is the year to get this bill over the finish line," said AMA President **BRUCE A. SCOTT, MD**.

In the 117th Congress, the bill garnered 378 total bipartisan cosponsors in the House and Senate and also passed the full House of Representatives. In addition, the legislation secured endorsements from more than 500 outside organizations, including the AMA and numerous national and state medical associations. Again, this year, the bill has similar widespread support.

Members of Congress have been spurred by stories from Medicare Advantage patients who have faced unnecessary delays in treatment and diagnoses because of the administrative hurdles erected by prior authorization.

"This legislation will streamline the prior authorization process so physicians can offer patients safe, timely and affordable care. Those decisions should be made between patients and their doctors without being second-guessed by insurers. The bipartisan and bicameral support for the bill is evidence that this is a common-sense proposal that deserves to be passed," Dr. Scott said. ❖

AMA adopts new prior authorization reform policies during annual meeting

CHICAGO – Physician and medical student leaders at the annual meeting of the American Medical Association (AMA) House of Delegates approved policies aimed at fighting for greater insurer accountability and transparency against the backdrop of proliferating, onerous prior authorization requirements that are delaying and denying necessary care for patients and adding administrative burdens for physicians.

The policies adopted by the House of Delegates address the need for greater oversight of health insurers' use of prior authorization controls on patient access to care. The new policies include:

Insurer accountability when prior authorization harms patients

Health plans continue to inappropriately impose bureaucratic prior authorization policies that conflict with evidence-based clinical practices, jeopardize quality care, and harm patients. In response, the AMA will advocate for increased legal accountability of health insurers when prior authorization harms patients.

"Waiting on a health plan to authorize necessary medical treatment is too often a hazard to patient health," said AMA Board Member **MARILYN HEINE, MD**. "To protect patient-centered care, the AMA will work to support legal consequences for insurers that harm patients by imposing obstacles and burdens that interfere with medically necessary care."

Surveys of physicians have consistently found that excessive authorization controls required by health insurers persistently lead to serious harm when necessary medical care is delayed, denied, or disrupted. Investigations by the inspector general's office of the Health and Human Services Department and Kaiser Family Foundation into prior authorization by Medicare Advantage plans strongly suggest that insurers are denying medically necessary health care.

The AMA will also work to ensure that increased legal accountability of insurers is not precluded by clauses in beneficiary contracts that may require pre-dispute arbitration for prior authorization determinations or place limitations on class action.

Transparency for prior authorization denials

When access to care is denied by a health insurer, patients and physicians should be able to understand the justification for the coverage decision. However, prior authorization programs imposed by health insurers include extensive denial processes that are notoriously opaque, complex, and inconsistent. In response to the need for improved transparency, the AMA will continue working to ensure health insurers provide prior authorization notifications with detailed explanations regarding the rationale for denying access to care.

"Health insurer denials must not be a mystery to patients and physicians," said Dr. Heine. "Without clear information from an insurer on how a denial was determined, patients and physicians are often left to the frustrating guess work of finding a treatment covered by a health plan, resulting in delayed and disrupted care. Transparency in coverage policies needs to be a core value, an essential principle to help patients and physicians make informed choices in a more efficient health care system."

New AMA policy outlines basic information requirements for prior authorization denial letters that include a detailed explanation of denial reasoning, access to policies or rules cited as part of the denial, information needed to approve the treatment, and a list of covered alternative treatments.

While additional information in denial letters is needed, the AMA will also continue its work to support real-time prescription benefit tools (RTBTs) that allow physicians access to patient drug coverage information at the point of care in their electronic health records. RTBTs can streamline access to care and avoid unexpected delays and denials by confirming insurer-approved care or providing therapeutically-equivalent alternative treatments that do not require the insurer's prior authorization. ❖

AMA adopts policies to expand health care coverage

CHICAGO – Physician and medical student leaders at the annual meeting of the American Medical Association (AMA) House of Delegates approved policies aimed at expanding health care coverage for Medicare and Medicaid patients. The new policies adopted include:

Making Medigap policies affordable for Medicare patients

The House of Delegates adopted a resolution calling for a change in federal policy that would reduce costs and burdens to patients who want to switch from Medicare Advantage to traditional Medicare.

If individuals enrolled in a Medicare Advantage plan want to switch to traditional Medicare, they may not be able to enroll in a Medigap plan to handle out-of-pocket expenses. Medigap currently offers a one-time, six-month enrollment period, during which individuals are protected by "guaranteed issue" and community rating, which prevent discrimination based on health, age, or gender. Guaranteed issue protections prohibit insurers from denying a Medigap policy to eligible applicants, including individuals with pre-existing conditions. The new policy supports Medigaps plans offering annual open enrollment periods, guaranteed lifetime enrollment eligibility, and extended modified community rating regulations.

"This guarantee is baked into the Affordable Care Act marketplaces but is not yet part of Medicare. There are good reasons that patients switch to traditional Medicare, and they shouldn't have to pay a higher cost to do so," said **SCOTT FERGUSON, MD**, a member of the AMA Board of Trustees.

Medigap regulations for individuals who are switching Medicare coverage vary from state to state. In some states, patients might see their Medigap policy increase in cost or narrow in coverage – or even become unavailable – once they switch coverage. Other states have enacted Medigap protections for cost, community rating and eligibility.

Under current law, Medigap plans are required to be offered to all Medicare patients over 65 but not to other Medicare patients under 65 on dialysis or with disabilities. The AMA will support efforts to expand access to Medigap policies to all individuals who qualify for Medicare benefit.

Expanding Medicaid coverage to include hearing and vision

With Medicaid's patchwork coverage leaving many patients without access to hearing and vision services, the AMA will work with interested state medical associations to support efforts to cover these vital services and improve health for all Medicaid patients.

Although Medicaid provides basic hearing, vision, and dental services to children, these services are optional benefits for adults enrolled in Medicaid. Coverage varies drastically between states. Twenty-eight states provide limited Medicaid hearing coverage for adults, but many patients are unable to afford hearing aids or access associated care. New AMA policy advocates working with state medical associations to support coverage of hearing exams, hearing aids, cochlear implants, and aural rehabilitative services.

Thirty-three states offer some Medicaid vision coverage, of which 28 states limit access based on severity of vision impairment, pre-existing conditions, restrictions to only eyeglasses, and the number and frequency of visits allowed. New AMA policy advocates working with state medical associations to support coverage of routine comprehensive vision exams and visual aids, including eyeglasses and contact lenses.

Medicaid is not required to provide any adult coverage for dental service; only 19 states offer comprehensive coverage while 31 offered limited or emergency coverage. Medicaid patients routinely forego dental services because of out-of-pocket costs. About 18% of Medicaid patients under 65 report an unmet dental need due to cost, double the rate of privately insured patients. It is estimated that there are 2 million dental-related emergency room visits a year, costing $2 billion. Revised AMA policy supports working with the American Dental Association and other national organizations to improve access to dental care for Medicare, Medicaid, and CHIP patients.

"There's not much logic for why most Medicaid patients don't get comprehensive coverage above the neck. Failure to address vision, hearing and dental issues leads to more severe health problems and represents preventable obstacles to work and everyday life. These services are life-changing and life-saving," said **PRATISTHA KOIRALA, MD, PhD**, a member of the AMA Board of Trustees. "Advocating for a healthier nation means advocating for expanded Medicaid." ❖

AMA House of Delegates adopts policy on medical education

CHICAGO – Physicians and medical students at the Annual Meeting of the American Medical Association (AMA) House of Delegates adopted policies intended to reduce financial burdens for medical school graduates and expand on AMA's work to support the mental health and wellness of medical trainees. The policies adopted include:

Public Service Loan Forgiveness Program

AMA delegates adopted policy calling for an immediate change in the Public Service Loan Forgiveness Program to allow physicians to receive loan forgiveness when they practice in an Indian Health Service (IHS), Tribal, or Urban Indian Health Program, similar to physicians practicing in a Veterans Administration facility. The policy aims to address urgent physician shortages in the IHS and other programs to increase access to care for patients in rural or underserved areas. The AMA has long advocated for avenues to help new medical school graduates, most of whom graduate with about $200,000 in medical student-loan debt.

"This is a win-win for medical students and tribal communities," said AMA Immediate Past President **JESSE M. EHRENFELD, MD, MPH**. "About 83 million Americans live in areas that don't have sufficient access to a primary care physician. That is unacceptable. At the same time, students are graduating from medical school with huge financial burdens. Working under the IHS or other similar programs offers a great learning experience for new physicians as they serve communities that so desperately need better access to medical care."

Transforming the USMLE Step 3 Exam

AMA delegates adopted policy which supports changing the United States Medical Licensing Examination (USMLE) Step 3 and Comprehensive Osteopathic Medical Licensing Examination of the United States (COMLEX-USA) Level 3 from a numerically scored examination to a pass/fail examination and changing the current two-day examination to a one-day exam. The policy also calls for residents taking the exam to be allowed time off to take the exam without having to use their paid time off (PTO) or vacation time. Physicians in training already work long hours caring for patients while also being required to take numerous examinations, such as USMLE Step 3 and COMLEX-USA Level 3, to demonstrate their knowledge. This action seeks to reduce the stress and burnout of meeting these multiple demands.

"Preparing for and taking these exams is time-consuming, costly, and stressful," said **ALIYA SIDDIQUI, MS**, a member of the AMA Board of Trustees. "As medical graduates and residents are embarking on their careers and juggling heavy workloads, they are being forced to use valuable time off to take these exams. Making changes to the testing process will only increase the time that new physicians are able to spend learning in clinical settings with patients." ❖

Commission created to explore potential establishment of medical school at URI

STATE HOUSE, PROVIDENCE – The Rhode Island Senate passed a resolution creating a 21-member commission to study and analyze the state's health care workforce as it pertains to educating and retaining primary care physicians, including the potential of establishing a medical school at the University of Rhode Island.

"Rhode Island is headed for a crisis in primary care," said Senator **V. SUSAN SOSNOWSKI** (D – Dist. 37, South Kingstown), who sponsored the resolution, 2024-S 3165. "While we took important steps this year to address this problem as part of the Senate's health care package, including monetary support for primary care training sites and tuition assistance included in the budget, more remains to be done. While we will continue to work on the aspects of the health package that address the coming primary care crisis, such as reimbursement rates, we also know that these bills are not a silver bullet. We need to explore every avenue we can to ensure Rhode Islanders can access the care they need."

The resolution notes that Rhode Island is experiencing a net loss of primary care clinicians and the shortage is expected to worsen in the years ahead. The inability of many Rhode Island residents to find primary care physicians is resulting in the use of community health centers and urgent care facilities to meet their medical needs, which strains resources and creates additional pressures on the health care system.

While Rhode Island is home to a private medical school, no new medical schools have been established in the state since 1972.

"Rhode Island struggles to retain primary care physicians upon graduationand offset these losses with physicians moving into the state," the resolution states. "Rhode Island must look towards the creation of a college of medicine to train and retain the next generation of the primary care physicians."

The commission is charged with developing and issuing its recommendations to the Senate by December 20, 2025. ❖

Rhode Island selected for Certified Community Behavioral Health Clinic (CCBHC) demonstration grant

PROVIDENCE – Governor **DAN McKEE**, the Rhode Island Executive Office of Health & Human Services (EOHHS), Department of Behavioral Healthcare, Developmental Disabilities and Hospitals (BHDDH), and Department of Children, Youth and Families (DCYF) today announced that Rhode Island is one of 10 states chosen for a federal demonstration program that will help the state in its transition to a new system of behavioral healthcare that provides care for people of all ages, regardless of their ability to pay.

The grant allows Rhode Island to receive Medicaid reimbursements at higher rates for services provided at what are known as Certified Community Behavioral Health Clinics (CCBHCs), helping to reduce the costs borne by the state. The CCBHC model is a national set of standards for comprehensive behavioral health care that is jointly supported by the Centers for Medicare and Medicaid Services (CMS) and the Substance Abuse and Mental Health Services Administration (SAMHSA). Rhode Island was one of 25 states that were eligible for a demonstration grant after winning federal planning grants that helped states work with behavioral health providers to further develop plans for the CCBHC model.

Funding is based on utilization, but the state estimates approximately $15 million in additional federal funding for state fiscal year 2024 and $26 million in additional federal funding for 2025.

Rhode Island's application was prepared by an interagency team from the Executive Office of Health and Human Services/Medicaid, the Department of Behavioral Healthcare, Developmental Disabilities and Hospitals, and the Department of Children, Youth and Families.

This funding will support the eight CCBHC sites scheduled to open on October 1, 2024, and two new sites.

- **Community Care Alliance**
  serving Burrillville, Cumberland, Lincoln, North Smithfield, and Woonsocket
- **Family Services of Rhode Island**
  serving Providence
- **Gateway Healthcare Pawtucket**
  serving Pawtucket and Central Falls
- **Gateway Healthcare Johnston**
  serving Cranston, Foster, Glocester, Johnston, North Providence, Scituate, and Smithfield
- **Gateway Healthcare South County**
  serving Block Island, Charlestown, Exeter, Hopkinton, Narragansett, North Kingstown, South Kingstown, Richmond, and Westerly
- **Newport Mental Health**
  serving Jamestown, Little Compton, Middletown, Newport, Portsmouth, and Tiverton
- **The Providence Center**
  serving Providence
- **Thrive Behavioral Health**
  serving Coventry, East Greenwich, West Greenwich, Warwick, and West Warwick

The providers cover a catchment area that reaches 91% of Rhode Islanders. The state is working to bring additional CCBHCs online in the following year for 100% coverage. Two additional sites, Amos House and East Bay Community Action Program, are actively pursuing certification to join the CCBHC program beginning October 1, 2025.

EOHHS will be implementing its CCBHC across most of the State on October 1, 2024. With its partial-year implementation in SFY 2025, EOHHS anticipates that Rhode Island's participation in the CMS Demonstration will provide $15 million in state savings.

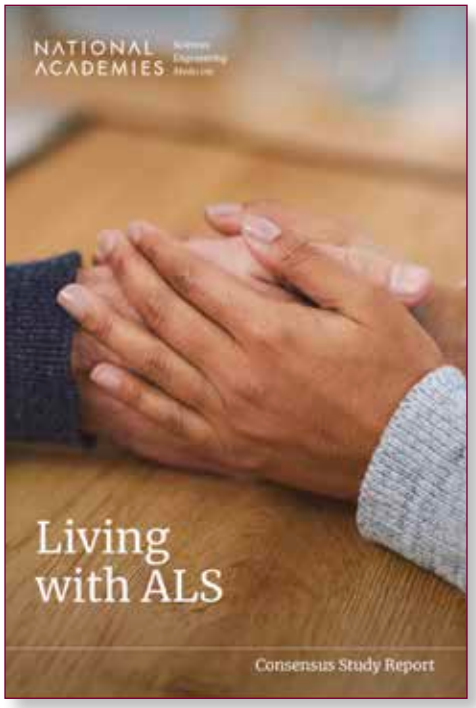
When measured on an annual basis and potential expansion for new providers, overall spending on what is a critical component of Rhode Island's behavioral health safety net is anticipated to increase from less than $70 million in SFY 2024 to nearly $240 million in SFY 2026. With $26 million in enhanced federal financing provided by the CMS Demonstration, the unprecedented investment of $170 million into its behavioral health system will cost $40 million in new state spending.

For more information about Certified Community Behavioral Health Clinics in Rhode Island, please visit the EOHHS CCBHC webpage. ❖

Report urges immediate and longer-term actions to improve services for people with ALS, speed development of therapies

WASHINGTON – A new congressionally mandated report from the National Academies of Sciences, Engineering, and Medicine recommends actions Congress, federal agencies, insurers, and others should take to strengthen health care and support services for people with amyotrophic lateral sclerosis (ALS) and accelerate research on therapies for the disease – with the goal of turning ALS into a livable disease within a decade.

Currently there are no treatments that stop or reverse disease progression, though services exist to help manage symptoms. At any given time, at least 30,000 individuals in the United States are estimated to have ALS.



"Receiving a diagnosis of ALS is devastating for the individual, their family, and their caregivers," said **ALAN LESHNER**, chief executive officer emeritus, American Association for the Advancement of Science, and chair of the committee that wrote the report. "Dealing with this illness requires a complex array of medical and support service interventions, and the intensity of care required increases exponentially over time. Implementing the vision laid out in our report would go a long way toward achieving the goal set in the committee's charge of making ALS a livable disease within a decade."

The committee – which included scientific and clinical experts from a variety of fields, as well as people living with ALS or at clear risk for developing it – defined ALS as being "livable" when an individual diagnosed with the disease can survive, thrive, and live a long, meaningful life while meeting the medical, psychosocial, and economic challenges of the disease.

Short-term actions that are feasible immediately

The report recommends concrete immediate actions that would have an important impact on livability for people with ALS and their caregivers. For example, the Centers for Medicare and Medicaid Services (CMS) and private insurers should act quickly to provide coverage for and ensure access to home-based and outpatient physical and other support services for persons with ALS as necessary, and to commit to expedited (within 72 hours) responses to prior authorization requests for all therapies, durable medical equipment, assistive technologies, and services for persons with ALS.

In addition, Congress should provide a tax credit that could be used by unpaid caregivers of individuals living with ALS, the report says. CMS should test approaches for paying stipends directly to caregivers on at least a monthly basis and providing access to high-quality respite services.

Building the ideal ALS care delivery system

Making ALS a livable disease requires diagnosing individuals earlier and initiating evidence-based multidisciplinary care by ALS specialists immediately and continuously, the report says. It urges the development of an integrated, multidisciplinary system that would provide high-quality care and access to research opportunities for all people with ALS, filling gaps in access across the U.S.

The system – modeled after "hub and spoke" systems of care and research for cancer and stroke – would build on what already exists in the ALS clinic system and would comprise three care settings: community-based ALS centers; regional ALS centers; and comprehensive ALS care and research centers. The system should be developed by CMS and the National Institute of Neurological Disorders and Stroke, in partnership with leaders of current ALS multidisciplinary care clinic systems. Reimbursement practices should be realigned to support this multidisciplinary care model.

Advancing ALS research and accelerating development of therapies

The history of drug development for ALS is filled with many failures and too few successes. Over the past decade, research advances have identified a wide range of potential therapeutic pathways and potential drug targets and genes associated with ALS, the report says. However, a lack of biomarkers, overall limited understanding of the disease, and the small pool of available research participants – which is exacerbated by restrictive clinical trial eligibility criteria and delays from symptom onset to diagnosis and clinical trial entry – are factors contributing to the lack of significant success in ALS drug development.

The report recommends the creation of a centralized, dedicated ALS clinical trials network that builds on existing ALS clinical trial consortia. This network would provide a coherent approach to clinical trials and natural history studies that permits faster answers to multiple questions at once. The National Institute of Neurological Disorders and Stroke should ensure the existence of such a network, distributed across diverse geographic regions in the U.S., and coordinated and funded by NIH.

The report also recommends the expansion of translational research and identifies additional research priorities; urges more funding for neglected areas of research that would yield near-term gains in quality of life for people with ALS, such as research on physical therapy and speech and language supports; and proposes the creation of a comprehensive ALS registry capable of collecting detailed longitudinal data on all individuals living with ALS, as well as people at increased genetic risk of developing ALS.

The report notes that while the Department of Veterans Affairs has demonstrated an exemplary system of ALS care that is interdisciplinary, proactive, and patient-centric, veterans receiving ALS care within VA clinics have limited access to participation in clinical trials. Given the known higher prevalence of ALS in veterans, it is critical to include the VA ALS system of care in the new integrated ALS network of care and research proposed in the report.

Preventing ALS

Additional research is also needed on populations at risk of developing ALS, the report says. Research that identifies new targets for therapeutic intervention, biomarkers of ALS, and risk factors and environmental exposures contributing to the development of ALS raises the possibility of developing agents or interventions that can delay or even prevent the development or progression of ALS. Research funders should partner with drug developers and the ALS community to advance research focused on people at risk of developing ALS, including at-risk genetic carriers. In addition, CMS and private insurers should increase access to genetic testing and counseling for people with ALS and their families.

"Making ALS a livable disease within a decade will require commitment, resources, and leadership from many relevant parties, but the impact will be great for the more than 30,000 individuals living with ALS and the thousands more who are at risk of developing this terrible disease," said **VICTOR J. DZAU**, president of the National Academy of Medicine. "Carrying out the report's recommendations would provide greater and more equitable access to state-of-the-art multidisciplinary care, accelerate the development of more effective treatments, improve the quality of life and health of those individuals suffering from ALS both now and in the future, and provide essential support for families and caregivers."

The study – undertaken by the Committee on Amyotrophic Lateral Sclerosis: Accelerating Treatments and Improving Quality of Life – was sponsored by the National Institute of Neurological Diseases and Stroke of the National Institutes of Health. ❖

Reed & Whitehouse announce $5.4M for emergency preparedness

WASHINGTON, DC – In an effort to help ensure that Rhode Island's medical facilities and health care systems are prepared for natural disasters and public health emergencies, U.S. Senators **JACK REED** and **SHELDON WHITEHOUSE** announced that the Rhode Island Department of Health will receive $5,415,557 to continue improving preparedness and health outcomes for a wide range of public health threats.

Rhode Island will receive $5 million through the Public Health Emergency Preparedness (PHEP)cooperative agreement and over $415,557 through the Cities Readiness Initiative, which allows cities to work with surrounding communities and their health departments to create coordinated response plans. The federal grants are administered by the U.S. Department of Health and Human Services' (HHS) U.S. Centers for Disease Control and Prevention (CDC).

The federal PHEP funds are designed to enhance the ability of hospitals and health care systems to prepare for and respond to public health emergencies such as natural and man-made disasters, including hurricanes, wildfires, floods, infectious disease outbreaks, and terrorist attacks. PHEP funds help emergency management, fire departments, law enforcement, hospitals, primary care providers, volunteers, information technology staff, and more work together and plan ahead to ensure the health, well-being, and preparedness of our communities is addressed during a range of emergencies.

"This is a smart investment in bolstering public safety and public health. These federal funds will help ensure the Rhode Island Department of Health and local hospitals have evidence-based guidance and operational plans in place to quickly and effectively respond to a range of emergencies. It will bolster the state's capacity to deal with pandemics or deliver treatment to the public in emergencies," said Senator Reed, a member of the Appropriations subcommittee that oversees federal funding for HHS programs. "Our dedicated health workers and emergency responders are critical when disaster strikes. I am pleased to support Rhode Island's robust preparedness system and ensure health and safety officials are ready and coordinating when we need them most."

"This federal investment will help strengthen Rhode Island's defenses against emerging public health threats," said Senator Whitehouse. "By putting funding directly into communities, we are supporting local emergency preparedness and increasing response capacity to keep Rhode Islanders safe."

The CDC estimates that Rhode Island has over 55 PHEP-funded staff, including epidemiologists, laboratorians, nurses, planners, IT specialists, administrative staff, statisticians, and other positions.

The PHEP cooperative agreement was most recently reauthorized through the bipartisan Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAI) in 2019. While many existing PAHPA provisions were set to expire in September 2023, Congress has temporarily extended several provisions until December 31, 2024 under the Consolidated Appropriations law (P.L. 118-42). ❖

Appointment

Sarah Frost, MBA, named Chief of Hospital Operations, President of RIH, Hasbro

PROVIDENCE – Lifespan recently announced the appointment of **SARAH FROST, MBA**, as its new chief of hospital operations and president of Rhode Island Hospital and its Hasbro Children's Hospital. Frost assumed her new role June 3rd.

As Lifespan's chief of hospital operations, she oversees quality, safety and patient care coordination across Rhode Island, Hasbro Children's, The Miriam, Newport, and Bradley hospitals, in furtherance of Lifespan's system goals and strategic plan. As president of Rhode Island Hospital and its Hasbro Children's Hospital, Frost oversees day-to-day operations at the hospitals, including high-quality and safe patient care, staff engagement, patient experience, process improvement, and operating financial results.

Frost brings with her over 20 years of experience in healthcare leadership. Prior to joining Lifespan, she served as the chief executive officer for two Banner Health hospitals in Arizona: Banner-University Medical Center Tucson and Banner-University Medical Center Tucson South. In these roles, she successfully guided the strategic vision of two academic medical centers and outpatient clinics, overseeing more than 6,000 employees, 900 inpatient beds, and $1.5 billion in operating revenue. Before becoming CEO, Frost held the position of chief operating officer for the medical centers.

"Sarah is a dynamic leader, highly accomplished in moving large health systems toward performance excellence. She joins Lifespan at a pivotal time as we look to upgrade our hospital facilities and provide 'wow' care across the system, and I am excited to partner with her in these efforts," said John Fernandez, president and CEO, Lifespan.

Frost holds a bachelor of science degree in business administration from the University of Arizona and a master of business administration degree from the University of Phoenix. She currently serves on the boards of the AAMC Council of Teaching Hospitals, Pima County Joint Technical Education District Foundation, and the American Heart Association. ❖

Recognition

Linda Carpenter, MD, awarded Clinical TMS Society Gold Medal of Honor

LINDA CARPENTER, MD, FCTMSS, was awarded the Clinical TMS Society Gold Medal of Honor at a ceremony in London on June 15th. This is an impressive distinction as it has only been awarded to three other pioneers in TMS research in the past decade.

Dr. Carpenter is the Director of the TMS Clinic and Neuromodulation Research Facility at Butler Hospital. The award recognizes her work as a clinical TMS researcher, educator, clinician, and advocate over the past 15 years. The Clinical TMS Society is an international medical society dedicated to optimizing clinical practice, supporting research, and increasing access to high-quality, evidence-based Transcranial Magnetic Simulation. ❖

Obituary

CHARLES P. SHOEMAKER, JR., MD, (1937–2024), was a 1959 alumnus of Amherst College. He graduated from Albany Medical College and did his internship and residency in general surgery at The Yale-New Haven Medical Center. After completing his training, he entered the Navy in 1969 under the Berry Plan and served at the Naval Hospital in Newport, RI, and for a year in Vietnam on the Hospital Ship, USS Sanctuary. On his return to the island and discharge from the Navy in 1971, a life-long love of sailing prompted him to accept an offer to join The Aquidneck Medical Associates. He remained affiliated with that group practice for the remainder of his medical career, retiring in 2005 after 34 years.

Dr. Shoemaker, a Fellow of the American College of Surgeons (FACS) was, throughout his surgical career, on the staff of the Newport Hospital, where he served tenures on various committees and as Chief of Surgery and president of the medical staff. He was also a delegate for many years to the American Medical Association and a member and officer of the Rhode Island Medical Society and its president. His interest in the integrity of his profession spurred him to become a founding member and officer of The American College of General Surgery. Care for his patients, maintenance of the highest standards of surgical care and access to quality medical care for all were his highest goals.

He was an avid sailor and devoted to one design racing. His Ensign, Challenger, was a fixture in Narragansett Bay racing for over 50 years. He added his Shields, Hawk, in later years and raced both competitively. Over those years, he won many local, regional, and national regattas, but it was the competition and camaraderie with others who shared his devotion to the sport that mattered to him most. For 50 winters, he unfailingly participated in the Sunday Frostbite sailing out of Newport Yacht Club. He was a member and former Commodore of the Newport Yacht Club and member of the Ida Lewis Yacht Club, and he raced in their seasonal series and in team racing on the Bay and in England and Ireland. He encouraged and taught many young people to sail and supported the founding of Sail Newport to expand access to sailing and to foster a love of the sport in the broader community.

In retirement, he was elected to the Newport School Committee and served several terms as its chairman. Education was a high priority for him, and he worked for better schools and opportunities for Newport's youth. In this capacity, he discovered that many children entered school unprepared to learn. His research uncovered a way forward. In consultation with the Harlem Children's Zone in New York City, he started the Baby Steps program in Newport to teach parents of children from birth to age three how to interact with their children to prepare them for successful learning. That program continues under East Bay Community Action Program.

Dr. Shoemaker is survived by his wife, the Reverend Stephanie Shoemaker; his children, Elizabeth and her husband, Kedar Relangi, of Los Altos, CA; William and his wife, Janet, of Solomons, MD; Becky Zorovic of Norwood, MA; five grandchildren and his brother, Robert W. Shoemaker of Glen Rock, NJ, and sister, Barbara H. Way (Tony) of Dallas, TX.

Memorial donations may be made in recognition of his contributions to Baby Steps, https://www.ebcap.org/programs/baby-steps-newport/ or to SailNewport https://sailnewport.org/ ❖