JLGH
The Journal of Lancaster General Hospital
Winter 2025
Vol. 20 – No. 4
a record of
MEDICAL PROGRESS

Penn Medicine
Lancaster General Hospital

Pages are perforated for easy removal. →
Fold twice in each direction before tearing.

Table of Contents

The Journal of Lancaster General Hospital *is printed on paper with a 10% post-consumer waste fiber content. The UV inks used are 99.5% free of volatile organic compounds (VOCs), unlike conventional inks, making them more environmentally friendly. If you do not wish to keep this print issue of the journal for future reference, the editors encourage you to recycle it. At Penn Medicine Lancaster General Health and other facilities, you may place it in any Shred-It® bin available. Shred-It® recycles 100% of the paper it collects. If you do not have access to a Shred-It® bin, please refer to your institution's or municipality's guidelines for recycling non-glossy paper.*

GUEST EDITORIAL

Connection Matters

The Essential Roles of Belonging and Community in Wellness

Amanda Katchur, PsyD, MPH
Associate Director, Family Medicine Residency Program
Penn Medicine Lancaster General Health

Loneliness and social isolation are significant public health concerns. Isolation has been associated with a range of adverse health outcomes, including increased risk of stroke, impaired cognitive functioning, and reduced physical functioning.[1] Similarly, loneliness is linked to poorer mental health outcomes, such as elevated depressive symptoms, anxiety, lower overall ratings of life satisfaction,[2] and suicidality.[3]

About one-third of adults in the United States say they feel lonely, and one in four reports not having enough social or emotional support.[4] Though anyone can experience loneliness or isolation, certain factors — increased age, financial barriers, disability status, mental or physical health concerns, being an LGBTQ+ person, and the personal experience of discrimination or marginalization — may increase vulnerability.[1]

While loneliness is normal, it can be positively altered. First, we can attend to whatever shame and anxiety may be associated with isolation by conveying compassion and humanity. We can also reinforce that strong social connections correlate with positive mental health outcomes and an increased likelihood of asking for help when needed.[5]

Social support and connection allow for the development and use of healthy strategies such as emotion expression and regulation.[6] Thus, to enhance whole-person wellness, clinicians can help patients enhance social connection and community belonging.

One's community may be a place — a neighborhood or a shared environment — or the bonds that exist with those around us, grounded in mutual understanding and support. Having knowledge of patients' relationships, sources of support, and community connections can provide essential insight into their overall well-being. Framing inquiry regarding social connection as a means of promoting and protecting health can be a meaningful way to approach the conversation.

Clinicians can help patients understand their sense of belonging by asking thoughtful questions about where they feel supported and comfortable, to be themselves and be valued by others. While some may respond easily, others may report they do not feel this way in any of their current environments. Lack of connection may result from a history of interpersonal trauma or other challenging circumstances. Social drivers of health, such as inadequate finances or childcare, or overwhelming caregiver responsibilities may exacerbate feelings of isolation.

Depending on the patient's individual situation, a primary care physician may help with problem-solving, yet collaborating with a mental health professional may also be beneficial. This may be especially true if a patient's isolation is closely connected to a diagnosis of a mental health disorder. Understanding what a patient perceives to be an ideal level of social connection and what are barriers for them is key.

From there, clinicians can help discern how to close gaps by initiating, for example, a referral to a support agency or helping identify opportunities for activity in the community. It is vital that we suggest steps that are reasonable to the patient and agree upon goals that are both motivating and realistic. For instance, a patient who has experienced long-term isolation might be hesitant to immediately join a group activity; it might be best for them to start by trying to leave their home consistently or make phone calls. Listening to patients will help guide recommendations.

It is also possible that a feasible action step would be for the patient to strengthen or revisit former positive friendships or connections. Clinicians who understand that the strength of any relationship can fluctuate over time may appreciate that patients may need encouragement to take the first step.

Once this conversation is initiated, it is important to follow-up at subsequent encounters. When we are more aware of patients' social goals, it is easier to identify potential steppingstones. Clinicians who understand what is available in the patient's community are better equipped to help their patients with social isolation. Libraries and other community spaces are

often a good place to start because they can feel comfortable. Some patients may have a special interest or piece of their identity that can be supported through connection with specific individuals or organizations. Understanding patient interests and needs helps us make better suggestions. Nevertheless, it may take time for patients to find what feels like their own best fit.

Promoting social connections and community engagement is an important public health objective for medical and mental health professionals. Facilitating discussions with patients about opportunities to enhance social participation and connectedness can contribute to improved psychological and physical well-being. Helping patients strengthen and reinforce social connections can be a process — but one well worth the effort.

REFERENCES

1. Our Epidemic of Loneliness and Isolation: The U.S. Surgeon General's Advisory on the Healing Effects of Social Connection and Community. U.S. Department of Health and Human Services. 2023. Accessed November 10, 2025. https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf
2. Hong JH, Nakamura JS, Berkman LF, et al. Are loneliness and social isolation equal threats to health and well-being? An outcome-wide longitudinal approach. *SSM Popul Health.* 2023;23:101459.
3. Alothman D, Lewis S, Card T, Tyrrell E, Fogarty AW. The association between living alone, loneliness and suicide mortality and effect modification by age: a case-control study. *J Affect Disord.* 2024;352:278-280.
4. Risk Factors for Loneliness and Social Isolation. Centers for Disease Control and Prevention. 2024. Accessed November 9, 2025. https://www.cdc.gov/social-connectedness/risk-factors/index.html
5. Ishikawa A, Rickwood D, Bariola E, Bhullar N. Autonomy versus support: self-reliance and help-seeking for mental health problems in young people. *Soc Psychiatry Psychiatr Epidemiol.* 2023;58(3):489-499.
6. Lopez RB, Courtney AL, Liang D, Swinchoski A, Goodson PN, Denny BT. Social support and adaptive emotion regulation: links between social network measures, emotion regulation strategy use, and health. *Emotion.* 2024;24(1):130-138.

This issue of *The Journal of Lancaster General Hospital* offers several articles on topics related to mental health. Scan the QR code at right for resources to help you, your colleagues, and your patients.

JLGH Fall 2025 Recap

Q&A for Extended Learning

The Fall issue of The Journal of Lancaster General Hospital *offered articles on pediatric headache in primary care, thrombocytopenia in adults, cellulitis, pharmacologic considerations for metabolic dysfunction-associated steatotic liver disease and metabolic dysfunction-associated steatohepatitis, and other practice recommendations. Review the questions and answers below to see how much you remember from the issue. Need a refresher? All issues of* JLGH *are available online at JLGH.org.*

Q **What initial management options can primary care clinicians suggest for children and adolescents with primary headaches?**

A *1) Lifestyle modifications* can include attention to sleep, hydration and nutrition, and activity levels, as well as behavioral health.
2) Rescue medications might include ibuprofen or a triptan.
3) Preventative approaches include cognitive behavioral therapy, dietary supplements, and preventative medications to help with sleep and appetite.

Q **Diagnosing thrombocytopenia in patients can be tricky, because there can be many different etiologies. Clinicians should consider whether the patient has experienced exposure to heparin or tick bites, as well as whether patients have adequate intake of vitamin B12. What diagnosis might an elevated PLASMIC score and an affirming ADAMS13 lab test help to establish?**

A Thrombotic thrombocytopenic purpura.

Q **How can clinicians distinguish cellulitis and an underlying abscess?**

A Symptoms of cellulitis include erythema, edema, warmth, and pain. A skin abscess is a collection of pus that is fluctuant, often with an erythematous nodule. Patients with cellulitis may or may not present with an abscess.

Q **What is FIB-4, and when should it be used?**

A The fibrosis-4 index is a non-invasive tool used to identify patients suspected to have metabolic dysfunction-associated steatotic liver disease who may advance to fibrosis. It should be used to screen patients with type 2 diabetes mellitus, obesity, and ≥1 cardiometabolic risk factor, or persistently elevated liver enzymes.

Q **What pharmacologic agents are approved by the Food and Drug Administration for the management of metabolic dysfunction-associated steatohepatitis in patients with type 2 diabetes mellitus?**

A Resmetirom and Wegovy® (semaglutide).

Two Cases of Hemolytic Anemia Due to Paravalvular Leak Successfully Treated with Percutaneous Closure

T. Raymond Foley IV, MD, FACC, FSCAI
Interventional and Structural Cardiologist
The Heart Group of Lancaster General Health

Kimberly Landis, MSN, CRNP
Valve Coordinator, Structural Heart
The Heart Group of Lancaster General Health

Ross Biggs, DO, FACC
Section Chief, Non-Invasive Cardiology
The Heart Group of Lancaster General Health


Foley


Landis


Biggs

Paravalvular regurgitation (PVR) is the leading cause of hemolytic anemia in patients with prosthetic heart valves.[1] We present two cases of patients who developed hemolytic anemia and associated symptoms due to paravalvular leak (PVL), both of which were successfully treated with transcatheter closure.

CASE 1

History of Presentation

A 70-year-old female is referred to the Cardiology clinic with complaints of shortness of breath, classified as New York Heart Association (NYHA) functional class III. She had undergone transcatheter aortic valve replacement (TAVR) in 2022 and surgical mitral valve replacement (MVR) in 2023. Over the previous 12 months, she developed macrocytic anemia.

Upon presentation, her hemoglobin is 8.4 g/dL (normal range: 12-16 g/dL) and her mean corpuscular volume (MCV) is 110 fL (normal range: 80-99 fL).

Past Medical History

The patient's medical history is significant for cirrhosis due to autoimmune hepatitis and primary biliary cirrhosis overlap, for which she is on chronic immunosuppressive therapy. In 2022, she underwent TAVR at another institution, complicated by a right femoral artery pseudoaneurysm requiring surgical repair.

She later presented to Penn Medicine Lancaster General Health with severe mitral regurgitation due to a posterior leaflet flail, leading to surgical MVR at LG Health. She also had some degree of renal failure.

Physical Examination

On examination, her blood pressure is 136/94 mmHg and her pulse is 87 beats per minute. Cardiac auscultation reveals a II/IV decrescendo diastolic murmur at the left lower sternal border. Jugular venous pressure is normal, and her lungs are clear to auscultation bilaterally.

Investigations

Laboratory evaluation reveals a decline in the patient's estimated glomerular filtration rate from normal values one year earlier to a nadir of 46 mL/min/1.73 m² (reference range: >60 mL/min/1.73 m²). During this same interval, the MCV has increased from 94 fL to 110 fL. Given these findings, a hemolysis panel is performed, yielding the following results:

Lactate Dehydrogenase (LDH)	(129-260 U/L)	**939▲**
Haptoglobin	(44-215 mg/dL)	**<30▼**
Indirect Bilirubin	(0.2-0.7 mg/dL)	**1.2▲**
Reticulocyte Count	(0.5%-2.5%)	**4.4▲**

A transesophageal echocardiogram (TEE) demonstrates moderate-to-severe paravalvular leak adjacent to

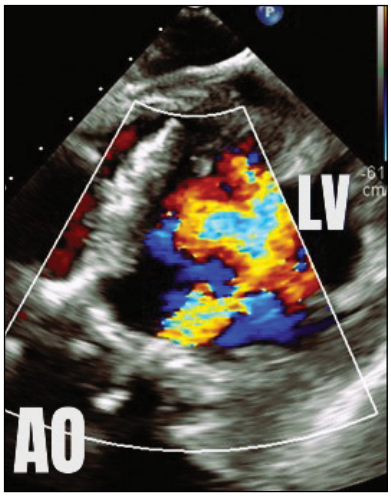


Fig. 1. Deep transgastric view of the aortic valve by transesophageal echocardiography demonstrates severe paravalvular leak. In this image, color represents regurgitant flow from the aorta into the left ventricle during diastole.

the bioprosthetic aortic valve, localized near the left coronary cusp (see Fig. 1 on page 99). Left ventricular dimensions and systolic function are preserved (LVEF 55% to 60%), and the mitral valve prosthesis exhibits normal function.

To exclude an infectious etiology, C-reactive protein (CRP) and blood cultures are obtained. The CRP level is within normal limits, and blood cultures show no growth.

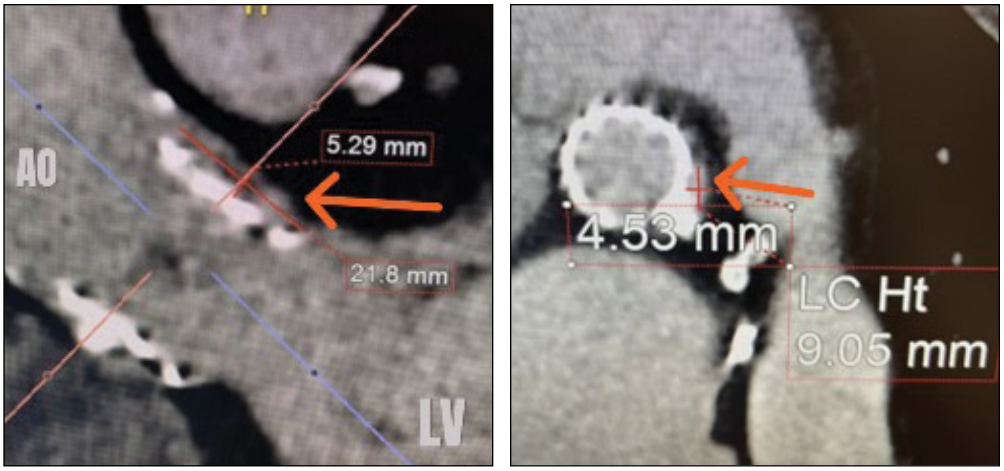


Fig. 2. Computed tomography angiogram long axis (left) and short axis (right) views of the paravalvular defect below the left main coronary artery. The orange arrows highlight the defects.

Management

The case is reviewed by a multidisciplinary cardiology team consisting of a structural interventional cardiologist, a cardiothoracic surgeon, and a noninvasive cardiologist with expertise in advanced cardiac imaging. The location and dimensions of the paravalvular leak are deemed suitable for transcatheter closure using a nitinol vascular plug (see Fig. 2).

Under general anesthesia and with transesophageal echocardiography guidance, the defect is successfully crossed using a hydrophilic guidewire introduced via the right radial artery. A 6-French guide catheter is advanced across the defect, and a 12-mm nitinol vascular plug is deployed. Prior to device release, selective coronary angiography of the left main coronary artery is performed to confirm vessel patency (see Fig. 3). Post-deployment TEE demonstrates complete elimination of the paravalvular leak.

The patient is discharged the following morning in stable condition. At the six-week follow-up visit, laboratory studies show complete resolution of anemia and renal dysfunction. Her dyspnea had resolved, and she remains asymptomatic one-year post-procedure.

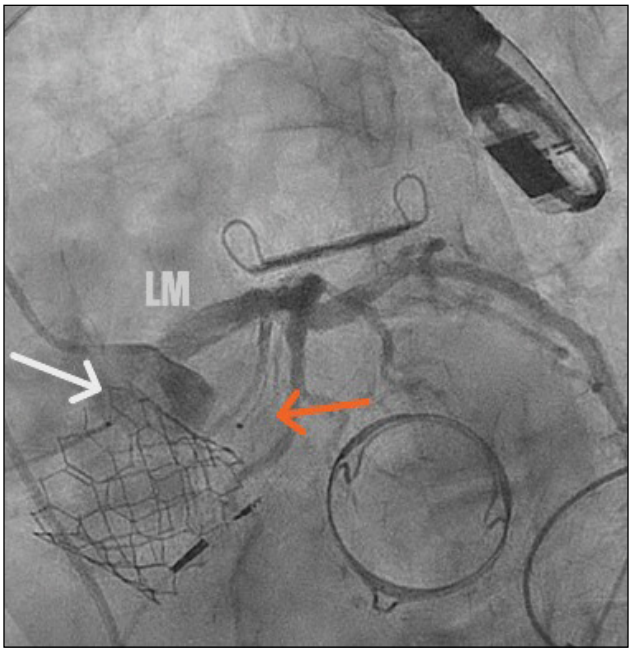


Fig. 3. Transcatheter paravalvular leak closure. The orange arrow identifies the distal aspect of the vascular plug, positioned below the aortic valve. The white arrow identifies the proximal aspect of the plug, in the left coronary cusp of the aortic root and outside of the prosthetic aortic valve frame. Coronary angiography reveals a patent left main coronary artery.

CASE 2

History of Presentation

A 54-year-old woman with a history of rheumatic heart disease who has previously had a surgical aortic and mitral valve replacement presents with fatigue, malaise, and exertional dyspnea, corresponding to NYHA functional class II symptoms.

Past Medical History

At age 46, the patient had undergone surgical mitral valve replacement with a bioprosthetic valve. She subsequently developed severe aortic regurgitation due to valve insufficiency and, at the age of 49, underwent another surgical aortic and mitral valve replacement using mechanical prostheses. Due to the presence of mechanical valves, she is maintained on chronic anticoagulation with warfarin.

Physical Examination

On examination, blood pressure is 123/64 mmHg and heart rate is 75 beats per minute. Cardiac auscultation reveals a grade II/VI holosystolic murmur audible throughout the precordium. Jugular venous pressure is normal, and lung auscultation is clear bilaterally.

Investigations

Transthoracic echocardiogram demonstrates normal prosthetic valve function without evidence of paravalvular leak. Laboratory evaluation is notable for macrocytic anemia (hemoglobin 10.2 g/dL, MCV 101.2 fL). Fecal occult blood testing is negative, and iron studies are within normal limits. Given the laboratory findings, a hemolysis panel is performed, yielding the following results:

Lactate Dehydrogenase (LDH)	(129-260 U/L)	**1,009▲**
Haptoglobin	(44-215 mg/dL)	**<30▼**
Indirect Bilirubin	(0.2-0.7 mg/dL)	**0.6**
Reticulocyte Count	(0.5%-2.5%)	**4.6▲**

Subsequent TEE reveals a moderate-to-severe paravalvular leak along the posterior aspect of the mechanical mitral valve (see Fig. 4). The aortic and mitral prostheses are otherwise functioning normally, and left ventricular systolic function was preserved (LVEF 55% to 60%).

To exclude an infectious etiology, CRP and blood cultures are obtained. The CRP level is within normal limits, and blood cultures show no growth.

Management

Following a comprehensive evaluation by a multidisciplinary cardiology team, transcatheter PVL closure is recommended. Under general anesthesia, the right femoral vein is accessed. A transseptal puncture is performed using a radiofrequency wire under guidance to gain access to the left atrium.

A steerable sheath is then used to facilitate antegrade crossing of the mitral PVL (see Fig. 5 on page 102). A stiff guidewire is advanced into the left ventricle, over which a 6-French coronary guide catheter is positioned. A 12-mm nitinol vascular plug is deployed across the defect, ensuring it straddles the PVL (see Fig. 6 on page 102). The device is then released. Post-deployment TEE demonstrates near-complete resolution of the PVL.

The patient is discharged the following day in stable condition. After six weeks, her anemia has completely resolved, and she remains asymptomatic.

SUMMARY

Paravalvular leak is a relatively common complication following prosthetic cardiac valve implantation, with an incidence ranging from 6% to 15%.[2] Patients may present with heart failure symptoms or hemolytic anemia. Hemolysis often occurs with smaller defects, where high-velocity jets generate shear stress, leading to red blood cell fragmentation.

Paravalvular leak results from incomplete apposition of the prosthetic valve to the native annulus, which can arise from friable annular tissue, dense annular calcification, suture dehiscence, or infection. Histori-

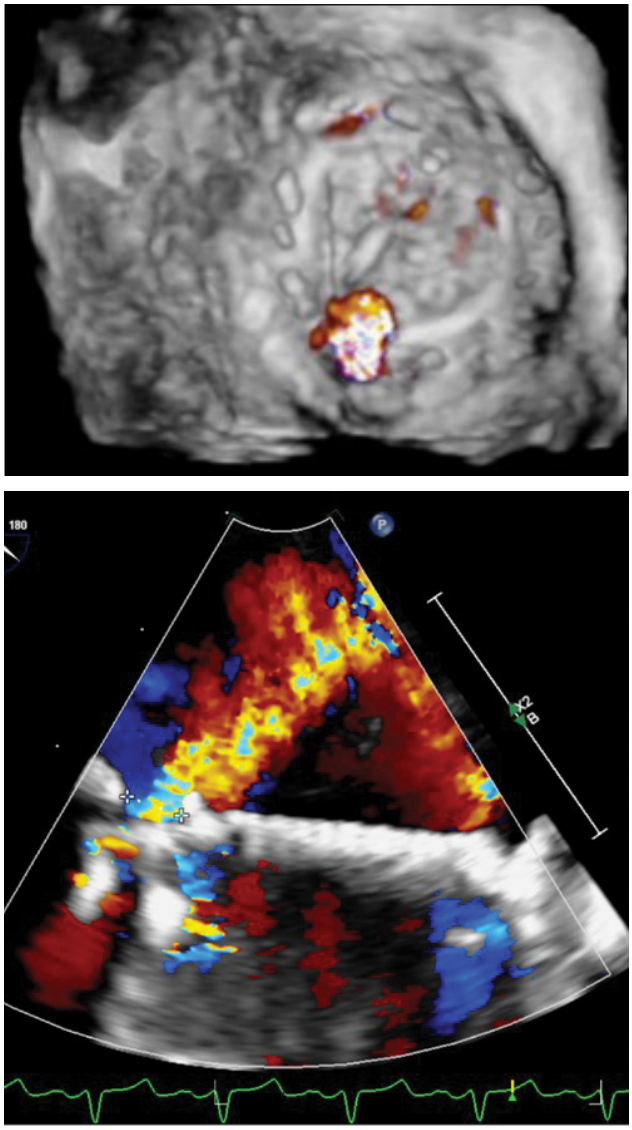


Fig. 4. Transesophageal echocardiogram demonstrating mitral PVL. Short axis view (top) of the prosthetic mitral valve from the left atrium using three-dimensional (3D) echo. Color doppler at the 6 o'clock position represents regurgitant flow outside of the mitral prosthesis during systole. Long axis view (bottom) of the prosthetic mitral valve demonstrating the same PVL.

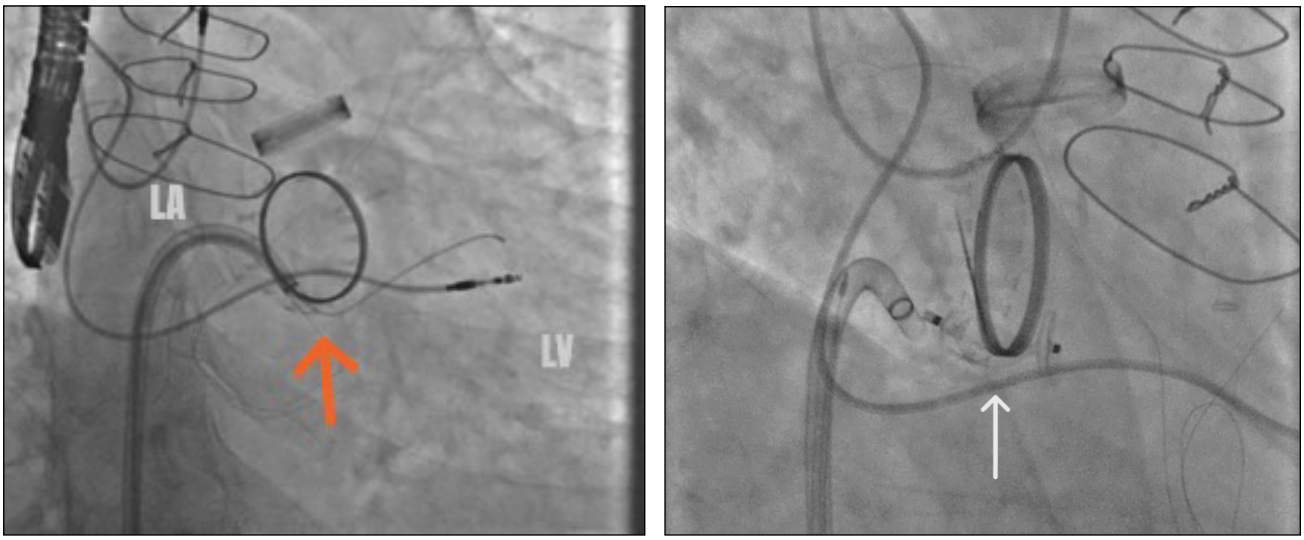


Fig. 5. Fluoroscopy of PVL closure. Advancing a wire (orange arrow, above left) from the left atrium across the mitral PVL into the left ventricle with the use of a steerable sheath after crossing the interatrial septum. Fully deployed vascular plug (white arrow, above right) within the defect, leading to resolution of PVL.

cally, surgical intervention has been the standard approach for clinically significant PVL but is associated with variable outcomes and elevated operative risk.[3,4] Percutaneous PVL closure offers a minimally invasive alternative and has been demonstrated to be safe and effective in multiple studies.[5,6]

Selection of an appropriate treatment strategy involves careful assessment of defect location, size, and morphology using echocardiography and contrast-enhanced computed tomography. Three-dimensional reconstructions are essential for determining percutaneous closure feasibility.

Very large defects (>⅓ of the annular circumference) or obvious valve dehiscence typically require surgical repair, as do cases associated with active endocarditis, which necessitate debridement. Current American College of Cardiology/American Heart Association guidelines recommend percutaneous PVL closure for patients with suitable anatomy, symptomatic heart failure, and/or hemolysis, particularly when surgical risk is high.[7]

A multidisciplinary "Heart Team" approach is critical for optimal patient selection. At Penn Medicine Lancaster General Hospital, patients with structural heart disease, including PVL, are evaluated by a team composed of a structural interventional cardiologist, a cardiothoracic surgeon, and a noninvasive cardiologist with expertise in cardiac imaging. Consensus recommendations are made after review of all relevant data.

Techniques for percutaneous PVL closure vary by valve location. The cases presented highlight both an antegrade transseptal approach for mitral PVL and a retrograde aortic approach for aortic PVL. Closure devices, available in various shapes and sizes, are typically constructed from nitinol, a nickel-titanium alloy with super elastic properties, allowing conformability within irregular defects.

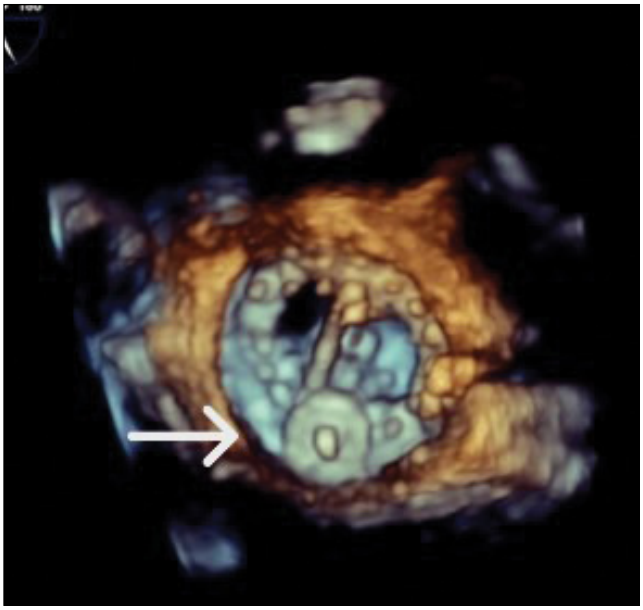


Fig. 6. Final short axis view of the mitral valve using 3D echocardiography. The image represents the view from the left atrium. The vascular plug (white arrow), deployed at the 6 o'clock position, now occupies the defect demonstrated in the short axis view of Fig. 4 on page 101.

Procedures are performed under general anesthesia via femoral arterial or venous access. Transesophageal echocardiography and fluoroscopy guide device deployment. Procedures generally take one to two

hours, and patients are typically monitored overnight and discharged with minimal restrictions.

CONCLUSION

The presence of hemolytic anemia in a patient with a prosthetic cardiac valve should prompt evaluation for paravalvular regurgitation. Symptomatic PVL is associated with increased morbidity and mortality if left untreated.[8] Percutaneous transcatheter PVL closure is a safe, minimally invasive, and effective treatment option for many patients. Ongoing research and advances in device technology continue to improve procedural outcomes and expand the population of patients who may benefit from this therapy.

REFERENCES

1. Eleid MF, Cabalka AK, Malouf JF, Sanon S, Hagler DJ, Rihal CS. Techniques and outcomes for the treatment of paravalvular leak. *Circ Cardiovasc Interv.* 2015;8(8):e001945.
2. Hammermeister K, Sethi GK, Henderson WG, Grover FL, Oprian C, Rahimtoola SH. Outcomes 15 years after valve replacement with a mechanical versus a bioprosthetic valve: final report of the Veterans Affairs randomized trial. *J Am Coll Cardiol.* 2000;36(4):1152-1158.
3. Miller DL, Morris JJ, Schaff HV, Mullany CJ, Nishimura RA, Orszulak TA. Reoperation for aortic valve periprosthetic leakage: identification of patients at risk and results of operation. *J Heart Valve Dis.* 1995;4(2):160-165.
4. Akins CW, Bitondo JM, Hilgenberg AD, Vlahakes GJ, Madsen JC, MacGillivray TE. Early and late results of the surgical correction of cardiac prosthetic paravalvular leaks. *J Heart Valve Dis.* 2005;14(6):792-800.
5. Calvert PA, Northridge DB, Malik IS, et al. Percutaneous device closure of paravalvular leak: combined experience from the United Kingdom and Ireland. *Circulation.* 2016;134(13):934-944.
6. Sorajja P, Cabalka AK, Hagler DJ, Rihal CS. Long-term follow-up of percutaneous repair of paravalvular prosthetic regurgitation. *J Am Coll Cardiol.* 2011;58(21):2218-2224.
7. Nishimura RA, Otto CM, Bonow RO, et al. 2014 AHA/ACC guideline for the management of patients with valvular heart disease: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation.* 2014;129(23):2440-2492.
8. Shah S, Alashi A, Pettersson GB, et al. Characteristics and longer-term outcomes of paravalvular leak after aortic and mitral valve surgery. *J Thorac Cardiovasc Surg.* 2019;157(5):1785-1792.e1.

T. Raymond Foley IV, MD, FACC, FSCAI
The Heart Group of Lancaster General Health
217 Harrisburg Ave.
Lancaster PA 17603
T.Raymond.FoleyIV@pennmedicine.upenn.edu

Kimberly Landis MSN, CRNP
The Heart Group of Lancaster General Health
217 Harrisburg Ave.
Lancaster PA 17603
Kimberly.Landis@pennmedicine.upenn.edu

Ross Biggs DO, FACC
The Heart Group of Lancaster General Health
217 Harrisburg Ave.
Lancaster PA 17603
Ross.Biggs@pennmedicine.upenn.edu


Nissley


Cruz

Street Medicine

Advancing Care for People Experiencing Homelessness in Lancaster

Jared A. Nissley, MD, AAHIVS
Medical Director
Bianca Cruz, DNP, CRNP
Nurse Practitioner
Penn Medicine Lancaster General Health Street Medicine

The U.S. Department of Housing and Urban Development collects national data on homelessness through the annual Point-in-Time (PIT) Count, conducted each January to standardize reporting and guide federal funding. While it remains the best available data source, the PIT Count is widely viewed as an undercount of the true problem, as it does not count individuals living in hotels or who are "doubled up." Nevertheless, the 2024 PIT Count recorded 771,480 Americans and 14,088 Pennsylvanians experiencing homelessness, reflecting steady increases since 2016 and sharp rises since 2022.[1]

Similar trends have also been observed in Lancaster County since the PIT Count began in 2009 (see Fig. 1). Lancaster County's 2025 PIT Count identified 546 individuals, including 64 unsheltered, a slight decrease from 2024 (597) but significantly higher than the nadir of 321 in 2017.[2]

As homelessness has become more common and more visible, the topic has received increased attention in the popular press and from politicians, with leaders facing increasing pressure to take effective action to lessen the impact of homelessness on communities. People experiencing homelessness (PEH) are commonly portrayed as a plague on a community, bringing problems of crime and illicit drug use.

Unfortunately, only rarely does the conversation center on reducing the suffering experienced by our neighbors enduring the hardship. Not only are PEH at elevated risk for injuries, overdose, and exposure to the elements, but they are also more likely to experience adverse outcomes from chronic conditions like cardiovascular disease and cancer.

The most striking research reveals stark disparities in mortality data. A 2018 *Lancet* meta-analysis of "inclusion health populations," defined as those experiencing social exclusion through homelessness, incarceration, sex work, or illicit substance use, found mortality rates 8 times higher for women and 12 times higher for men compared to the general population.[3] Similarly, a study in *JAMA* reported elevated mortality rates among patients served by Boston Healthcare for the Homeless, with younger adults (25-44) dying at 9 times — and middle-aged adults (45-64) at 4.5 times — the Massachusetts average.[4]

Meanwhile, traditional health care has consistently proved inadequate for the needs of people experiencing homelessness. PEH use acute health care services at rates well above the general population, with studies repeatedly showing high rates of emergency department visits, hospital admissions, and readmissions.[5,6] This is a pattern of health care utilization associated with high cost, yet it has not delivered equity in health outcomes. Worse yet, PEH frequently cite experiences of stigmatization in health care settings and consistently tie those experiences to care avoidance.[7]

Over the past few decades, street medicine has emerged as a medical discipline aiming to address the gap between our suffering neighbors and a health care system that can often feel exclusive. Pioneers in the field include Boston Healthcare for the Homeless and Pittsburgh's Operation SafetyNet, but the movement has grown to include hundreds of organizations across the United States.

Central to effective street medicine is a posture of radical inclusion demonstrated by a willingness to engage clients at any point in their journey toward health. Street medicine focuses on delivering care to clients in their lived environment — including parks, streets, and encampments — to eliminate as many barriers to medical care as possible. Practitioners recognize that survival on the streets frequently requires choosing between competing priorities like finding food or shelter, avoiding violence, or coping with mental illness or addiction.

Behaviors that seem self-destructive from the viewpoint of providers may be adaptive from the perspective of patients. As an example, PEH commonly use methamphetamine to maintain wakefulness to reduce the risk of violence. A welcoming and non-

judgmental approach is critical to gaining an understanding of the lived reality that shapes our patients' lives and to developing the trust that allows for engagement over time.

While the needs of each community are varied, street medicine practitioners have coalesced around a uniting set of core values (see Table 1 on page 106). These values emphasize a deliberate effort to address the trauma and depersonalization that PEH frequently experience, with special attention to centering the patient as the foremost expert on their own lived reality and needs. This approach signifies respect for patient autonomy, recognizing each person's right to make decisions about their health and circumstances.

Street medicine teams have frequently developed outside of academic institutions, and as a result, research has often taken a backseat to the urgency of clinical care. Still, some work has been done to assess the efficacy of medical care provided via the street medicine model.

A 2024 review highlighted the benefits of street medicine programs in the United States. Common features of programs are preventive services, chronic disease management, addiction treatment, vaccinations, insurance enrollment, and housing support. The review found that street medicine programs have the potential to substantially reduce emergency department visits and hospitalizations, with one model estimating potential health care cost savings of up to $9,000 per patient annually.[10]

STREET MEDICINE AT LG HEALTH

Street medicine began in Lancaster in 2021 when LGH Family Medicine resident physicians identified an unmet need and began making after-hours "street runs" modeled on programs in other cities. It quickly became clear that an effective program required a more consistent and coordinated response. Penn Medicine LG Health Street Medicine launched in its current form in the autumn of 2023 with a lean team of two clinicians (the authors). A year later, a nurse care manager joined the team.

The goal of LG Health Street Medicine is to take the services of a primary care practice to those who are experiencing homelessness wherever they might be — shelters, soup kitchens, parks, cars, encampments. In 2024, our care reached 466 distinct patients over 1,196 encounters, with hundreds more informal encounters. Many patients already have an established primary care relationship that we work to sustain. For others, we function as the primary connection to health care services.

We take a collaborative approach, working alongside outreach workers, social workers, and recovery specialists from agencies serving those experiencing homelessness, with the intention to augment rather than duplicate the services provided by other local agencies. Our patients are most concentrated in Lancaster City, but we also make regular visits to Elizabethtown, Columbia, and Ephrata.

We visit other locations across the county on an as-needed basis. We regularly see patients at the Clay Street Shelter and have a strong working relationship with health care services at Water Street Mission, although we do not typically see patients there.

We work out of backpacks and our cars, carrying a supply of basic medical equipment, along with survival items like water, socks, and blankets. Our most frequently encountered

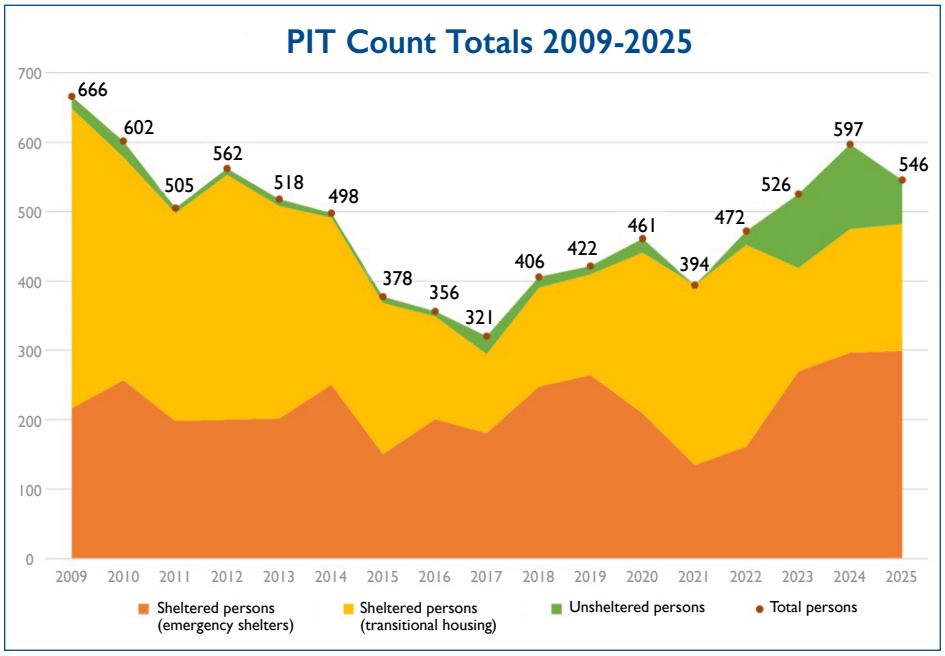


Fig. 1. HUD-reported PIT Count totals, Lancaster County. *Adapted from Lancaster County Homelessness Coalition.*

concerns are acute issues like respiratory, musculoskeletal, or skin complaints, but we frequently treat chronic diseases such as diabetes, hypertension, mental illness, or substance abuse. We have found it especially effective to dispense medications directly from our medication supply or to use grant and gift funds to cover patient co-pays at the LGH Convenience Pharmacy.

The streets and the lived reality of our patients are ever changing — thus our practice has frequently adapted to meet our patients' needs over the past two years. We regularly reassess the best places to encounter our patients and the key community partners with whom our patients feel most welcome. One key change to date was the addition of an ambulatory care manager dedicated to addressing our patients' needs for housing and social resource navigation.

With demand for our services outstripping our available time, we have shifted toward prioritizing serving individuals with chronic illness or disability that might put a patient at higher risk. As part of this strategy, we regularly make introductions to patients hospitalized at LGH to facilitate ongoing care after discharge. Of our encounters in 2024, 192 occurred within 30 days of an Emergency Department or hospital stay, reflecting the priority this takes in our work. Kelvin's Story on the next page demonstrates how connecting to patients during acute health episodes can bear fruit months or years down the road.

We recently began seeing patients at a renovated clinical space at the Lancaster County Food Hub's day center, with a similar arrangement at the planned Prince Street Homelessness Services Hub anticipated in late 2026. These critical access points provide a safe place for high-quality care in a setting where patients already feel comfortable. Meanwhile, regulatory changes in Medicare and Medicaid have allowed us to generate insurance revenue for the first time in 2025, helping to ensure our financial sustainability. With access to affordable housing at crisis levels, we expect demand for our team's services to remain high in 2026.

REFERRALS

The LG Health Street Medicine team welcomes referrals for patients experiencing homelessness with medical needs across Lancaster County who are poorly connected to primary care. The team can be contacted by phone at 717-544-6800 or via email or Epic staff message.

Table 1. LG Health Street Medicine Guiding Principles

Go to the people.
Care is most effective when delivered where patients are most comfortable as it leads to a more trusting patient-provider relationship and provides critical insight to each patient's lived environment.

Practice non-judgmental care that values personal autonomy.
Patients are the experts on their own lives and should be empowered to make choices that match their own values.

Use a flexible, reality-based approach.
Care plans must be adapted to meet the reality of a patient's situation.

Value input of those with lived experience of homelessness.
The wisdom and experience of people experiencing homelessness (PEH) are sought to improve the care delivered.

Work as a multidisciplinary team.
A horizontal team structure recognizes that all team members provide care critical to patient success.

Collaborate with others providing services.
Serving PEH well means supplementing rather than competing with the robust community of homelessness service providers in Lancaster County.

Show solidarity.
The work of Street Medicine includes amplifying the stories of patients and advocating to improve conditions for PEH in Lancaster County.

Borrowed heavily from the Street Medicine Institute[8] and Venice Family Clinic Street Medicine.[9]

KELVIN'S STORY

Kelvin is a 38-year-old native of Lancaster and a father of three girls. As a teenager, he struggled in school, experienced intense anxiety, and found his mind racing uncontrollably. Then as a young adult, he cycled through dozens of jobs and eventually turned to drugs. Numbing his physical and emotional pain took precedence over most everything else in life.

Years later, Kelvin would reflect that the symptoms of bipolar disorder had gotten out of control, but without a mental health diagnosis or treatment plan, he became trapped in a pattern of survival. While he found ways to get by, the consequences of his behaviors began to add up. He recalls spending thousands of dollars on alcohol in a period of just six months. By his mid-30s, he found himself cut off from his family and without a place to stay.

While living on the street, Kelvin first encountered the Penn Medicine Lancaster General Health Street Medicine team at Anchor Lancaster, an outreach at First United Methodist Church that provides breakfast, case management services, and a day center. Of Anchor, Kelvin says, "People come here from all over to get help, and my help started at that church." He recalls encounters at Anchor as being among the first in which he felt seen as a person and not a problem. He began to receive medical advice and medications from our team, but he was most struck by simple gestures that communicated compassion like being offered a shower. It was humanizing courtesies like these that planted the seed for change in Kelvin even as he continued to struggle.

Over several months, we observed how homelessness set off a dramatic decline in Kelvin's health, both physically and emotionally. Without stable housing, he struggled to maintain his basic hygiene. He was prescribed medication but did not stick with it because of the chaos of his circumstances. In those dark days, his family remained at a distance, believing he was not making enough effort to improve his situation, which deepened his sense of isolation.

Over the following months, Kelvin had multiple encounters with the Street Medicine team at Anchor, Lancaster County Food Hub, and on the street. He appreciated the acceptance he felt and the invitation he received to shape his medical plan at his own pace. Yet Kelvin repeatedly chose to put himself in circumstances where he was likely to return to substance abuse, and we worried he would be lost to incarceration or worse.

While hospitalized after surviving an overdose, Kelvin was again visited by the Street Medicine team and subsequently agreed to enter drug rehabilitation and secure a bed in a sober living residence. Citing his daughters as his primary motivation, that hospital stay would become a turning point for Kelvin. He began to see a traditional primary care doctor and a psychiatrist. He attributes proper diagnosis and treatment as factors in helping him achieve more stability. Later, with the help of the team's care manager, Kelvin was able to successfully obtain Social Security Disability Income.

Today, he is focused on rebuilding his life and being a positive example for his daughters. Kelvin is determined to break the cycle of untreated mental illness in his family. He wants to share his story so his family can see how far he's come. He states that with the help of the Street Medicine team, he was "brought out of the dirt" and appreciates the team for being with him at "ground zero."

Note: The names and details of this story were used with permission of the patient. Appropriate disclosure authorization was obtained.

REFERENCES

1. 2024 Annual Homelessness Assessment Report to Congress Part 1: Point-In-Time Estimates of Homelessness. U.S. Department of Housing and Urban Development, Office of Policy Development and Research. Updated December 27, 2024. Accessed June 19, 2025. https://www.huduser.gov/portal/publications/2024-ahar-part-1-pit-estimates-of-homelessness.html
2. Lancaster County's 2025 homeless count reflects service capacity shifts and extreme weather. Press release. Lancaster County Housing and Redevelopment Authorities. April 29, 2025. Accessed June 19, 2025. https://lchra.com/wp-content/uploads/2025/04/Press-Release-2025-PIT-Data-Release.pdf
3. Aldridge RW, Story A, Hwang SW, et al. Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis. *Lancet.* 2018;391(10117):241-250.
4. Baggett TP, Hwang SW, O'Connell JJ, et al. Mortality among homeless adults in Boston: shifts in causes of death over a 15-year period. *JAMA Intern Med.* 2013;173(3):189-195.
5. Fields JD, Assaf RD, Nguyen KH, et al. Health care access and use among adults experiencing homelessness. *JAMA Health Forum.* 2025; 6(5):e250820.
6. Saab D, Nisenbaum R, Dhalla I, Hwang SW. Hospital readmissions in a community-based sample of homeless adults: a matched-cohort study. *J Gen Intern Med.* 2016;31(9):1011-1018.
7. Reilly J, Ho I, Williamson A. A systematic review of the effect of stigma on the health of people experiencing homelessness. *Health Soc Care Community.* 2022;30(6):2128-2141.
8. Our Vision and Mission. Street Medicine Institute. Accessed October 14, 2025. https://www.streetmedicine.org/our-vision-mission
9. VFC Street Medicine. Venice Family Clinic. 2025. Accessed October 22, 2025. https://venicefamilyclinic.org/street-medicine/taking-social-medicine-to-the-unsheltered/venice-family-clinic-approach-to-street-medicine/mission-and-core-values-of-venice-family-clinic/
10. Kaufman RA, Mallick M, Louis JT, Williams M, Oriol N. The role of street medicine and mobile clinics for persons experiencing homelessness: a scoping review. *Int J Environ Res Public Health.* 2024;21(6):760.

Jared A. Nissley, MD, AAHIVS
Penn Medicine LG Health Street Medicine
554 N. Duke St., 2nd Fl., Lancaster, PA 17602
Jared.Nissley@pennmedicine.upenn.edu

Bianca Cruz, DNP, CRNP
Penn Medicine LG Health Street Medicine
554 N. Duke St., 2nd Fl., Lancaster, PA 17602
Bianca.Cruz3@pennmedicine.upenn.edu

19th-Century Mental Health Disorders and the American Civil War

Kenneth W. Lin, MD, MPH
Associate Director, Family Medicine Residency Program
Penn Medicine Lancaster General Health

John Mead, known as "Colonel" to visitors, lived as a hermit in caves and rock shelters along the Lancaster County side of the Susquehanna River from the late 19th century until his death in 1917. Although it is not known if Mead's honorific accurately represented his military rank, he was a veteran whose unusual lifestyle was thought to be related to the mental health effects of service in the Civil War as a young man.[1]

If so, he was one of many Pennsylvania veterans to have suffered from post-traumatic stress disorder (PTSD), which was not officially recognized as an illness until the third edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) in 1980.[2] This article explores the causes of and medical response to widespread psychological trauma resulting from the Civil War.

INVISIBLE WOUNDS

For most readers, the term "Civil War medicine" may likely evoke grisly images of blood-spattered bone saws and piles of amputated limbs in unsanitary field hospitals. Others might picture glass bottles of opium-containing concoctions dispensed liberally to treat diarrhea or other gastrointestinal ailments resulting from a diet of hardtack, salt pork, and coffee.[3]

History buffs may have visited the National Museum of Civil War Medicine in Frederick, Maryland or watched episodes of the 2016-17 PBS television drama *Mercy Street,* which depicts real and fictional characters treating battlefield wounds and infectious diseases at a Union military hospital in Alexandria, Virginia. For every Civil War veteran with a missing limb or other visible physical scar, however, others suffered from the "invisible wounds" of psychological illness from military service.[4,5]

According to Binghamton University historian Diane Sommerville, not only did 19th-century health professionals lack the vocabulary and scientific knowledge to describe psychological harms of war, they were also unable to "comprehend that a symptom — like startle response to a loud noise, a reflexive action of fright conditioned by the sounds of battle — was triggered by combat."[4] Physicians of this time believed that the major causes of insanity included excessive masturbation, alcoholism, inherited illness, chronic physical illness — especially from sexually transmitted infections — financial setbacks, and marital problems.[6]

THE EXPERIENCE OF SOLDIERING

In April 1861, volunteers on both sides expected that the Civil War would last for less than three months — the initial duration of enlistment for Union volunteers — and would be virtually bloodless. Pennsylvania was second only to New York in providing the most soldiers for the Union army, an estimated 338,000 out of a total population of three million.

Due to a combination of crowded living conditions, poor diet, and low preexisting immunity to contagious viral illnesses such as measles and smallpox, medical illnesses in camp claimed twice as many lives as physical battlefield wounds (see Fig. 1).[7] Long stretches of inactivity were interrupted by strenuous marches of up to 25 miles per day in heavy wool uniforms on uneven roads with inadequate (or no) footwear.

Fig. 1. Illnesses in camps, such as this one in Stafford County, Virginia, claimed more lives than battlefield wounds during the Civil War. *Photo courtesy of the author.*

The magnitude of death witnessed by Civil War soldiers was nearly unimaginable to previous generations, including generals who had served as privates or junior officers in the War of 1812 and the Mexican War. When they engaged opposing armies, "soldiers were choked or blinded by smoke, the roar of their own muskets deadened their eardrums, and they were pelted with clods of earth, pieces of metal, and sometimes human remains."[4]

In 12 hours of combat on the Antietam battlefield on September 17, 1862, 3,650 soldiers died from wounds. In comparison, the total number of soldiers killed in battle during the entire eight years of the Revolutionary War numbered around 8,600.[8] This vast increase in killing resulted from the increased accuracy of rifled firearms accompanied by little evolution in Napoleonic assault tactics, as tightly packed lines of men charged into open fields against entrenched defenders.

Until the Union Army of the Potomac's Overland Campaign in the spring and summer of 1864, opposing armies generally took months after major battles to disengage, resupply, reorganize, and recuperate. From the first Battle of Bull Run (Manassas) to Gettysburg, intervals between major battles in the Eastern Theater ranged from 60 to 361 days, except for the three-week interval between the second Battle of Bull Run and Antietam. That changed with the Battle of the Wilderness (May 5-7, 1864), which initiated 40 days of virtually continuous fighting and marching between the Army of the Potomac and the Army of Northern Virginia and produced a staggering 55,000 Union and 33,000 Confederate soldiers dead, wounded, or missing.[9]

A modern-day historical marker at the site of the Battle of Spotsylvania (see Fig. 2) recorded this description of the seemingly endless fighting:

> For 22 hours combat raged on the landscape in front of you. Although the fighting extended for half a mile, the battle focused on a slight bend in the Confederate lines known thereafter as the Bloody Angle. The fighting here consisted of sustained, close-range rifle fire punctuated by Union attempts to storm the Confederate works.
>
> ... Bodies piled up in the rain-filled trenches, the living sometimes buried beneath the dead. After the battle, men were found torn by dozens of bullets. One man had 11 bullets through the soles of his feet alone. Another was so mutilated that friends could identify him only by the unusual color of his beard. It was carnage on an unimaginable scale.

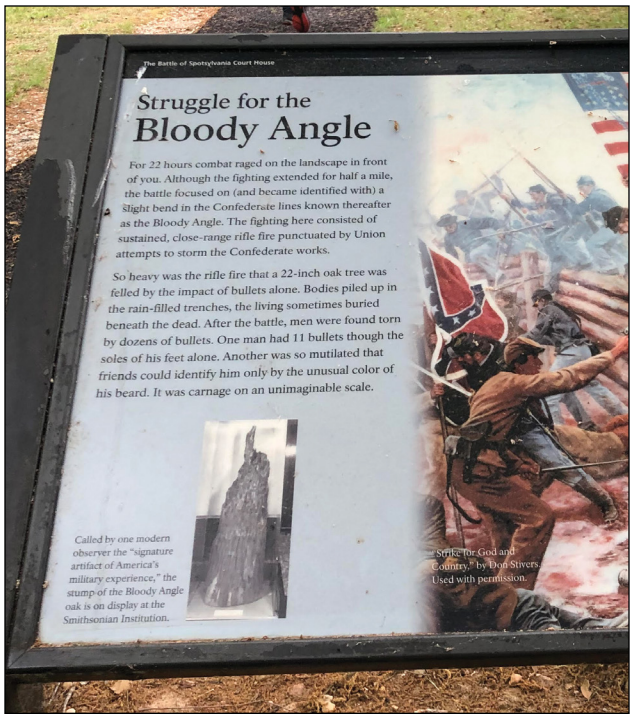


Fig. 2. Modern-day historical marker at the site of the Battle of Spotsylvania, Virginia. *Photo courtesy of the author.*

EFFECTS OF WAR TRAUMA ON MENTAL HEALTH

Soldiers and physicians of the era used several terms that presaged PTSD. To be "played out" referred to exhaustion and loss of stamina leading to emotional breakdown. "Nostalgia" consisted of severe despair and homesickness leading to listlessness, emaciation, and sometimes death.[10] Rather than medical issues, these were considered morale problems, for which prescribed treatments to restore the will to fight included drilling, shaming, and sending men back to the front lines.[5]

Coping mechanisms for soldiers exposed to trauma included engaging their religious faith, lagging behind on marches and avoiding duties, employing camaraderie, and encouraging letter-writing.[4] Many soldiers became emotionally desensitized or indulged in gallows humor. Alcohol use, though underestimated in official statistics, was also a common coping strategy.[11] Of note, although the annual suicide rate among active-duty Union soldiers rose gradually over the course of the war from 8.7 to 14.5 per 100,000, it doubled in 1866 to 30.4 per 100,000 after most of the volunteer army had been demobilized.[11]

Between 1865 and 1880, around 2,000 Union soldiers or veterans who suffered from mental illness were transferred from field or general hospitals (see Figs. 3 and 4 on page 110) to the 250-bed St. Elizabeth's Hospital in Washington, DC (then called the Govern-

ment Hospital for the Insane). Many admitted patients developed emotional problems or psychosis a decade or more after being discharged from the army.[4] At St. Elizabeth's, the standard therapeutic regimen included rest, light labor in the hospital gardens, and the administration of opiates, stimulants, and "tonics" containing ingredients such as milk, eggs, sugar, and whiskey.[12]

A 2006 study compared the military records of 17,700 Civil War veterans with postwar physical examinations conducted by the U.S. Pension Board surgeons and found that higher percentages of one's company killed in action were associated with higher risks of comorbid nervous (neurologic or mental health) and cardiac or gastrointestinal diseases (risk ratio = 1.51). Compared to men who enlisted at age 30 or older, soldiers younger than age 18 had nearly twice the incidence of subsequent nervous and cardiac or gastrointestinal diseases.[13]

PROGRESS TO THE PRESENT DAY

Over the next century, subsequent major conflicts — the Spanish-American War, World Wars I and II, Korea, and Vietnam — led to a better medical understanding of PTSD and refinement of strategies to prevent and treat "psychiatric casualties."[14] The DSM-V diagnostic criteria for PTSD require a traumatic exposure and at least one of the following for more than one month: intrusive symptoms (e.g., flashbacks), avoidance, altered mood, or altered reactivity (e.g., hypervigilance or a tendency to have a startle response).

Fig. 3. The Civil War Hospital in Gettysburg was a field hospital established soon after the Battle of Gettysburg to treat casualties from that conflict. *Photo courtesy of the author.*

Fig. 4. Ward of the Carver National Hospital in Washington, DC, which was used as a general hospital where men were brought for lengthy recuperation from points far away. *Photo from the National Archives and Records Administration.*

Today, PTSD has an estimated lifetime prevalence of 6% in the U.S. general population and up to 30% in Vietnam war veterans.[15] Several types of psychotherapy and antidepressants have been shown to reduce PTSD symptoms,[16] and a recent study of 840,000 veterans who received an initial PTSD diagnosis between 2016 and 2019 found that those who received cognitive processing or prolonged exposure therapy were 23% less likely to die by suicide than those who did not receive therapy.[17]

An estimated 44,000 veterans currently reside in Lancaster and Lebanon counties. In 2024, they collectively made 24,000 visits to Penn Medicine Lancaster General Health practices, 500 of them (2%) for behavioral health reasons. We know that 7% of veterans self-identify as having PTSD, including 6% of men and 13% of women. Reflecting an overall pattern in the U.S. armed forces, they are at greatest suicide risk around the time of transition from military to civilian life.[18,19]

CONCLUSION

At the conclusion of the U.S. Civil War, 160 years ago, millions of former Union and Confederate soldiers returned home, often permanently changed both physically and mentally by their experiences. Many of them, Sommerville observed, carried "a burden too heavy to bear":

> [Civil War] losses in dead, wounded and treasure have been well-documented; individual suffering, less so. And while suicides occurred

among Union soldiers, there is evidence to suggest suicides occurred more frequently in the South during the war and following the defeat and collapse of the Confederacy, as broken soldiers returned home burdened with combat stress as well as the herculean task of rebuilding themselves, their families, and the region.[20]

My fascination with Civil War history began when I visited Appomattox Court House National Historical Park in the fall of 2002, during my second year of Family Medicine residency at Lancaster General Hospital. During my fellowship at Georgetown University School of Medicine, I created and taught a medical student elective that traces the evolution of military medicine from the Civil War to the present day.

Caring for patients with PTSD in Washington, DC and Lancaster inspired me to learn more about the invisible wounds of those who served. Although weaponry and medical capabilities have advanced dramatically since the Civil War, the effects of trauma on the human psyche are universal.

ACKNOWLEDGEMENTS

This article is based in part on a webinar presented for the Lancaster Medical Heritage Museum in May 2024. The author thanks Adam Zurn from Uncharted Lancaster for sharing biographical information about John Mead, and Mark Simmons, MD, for providing context and data on mental health services for veterans in the greater Lancaster area.

RESOURCES FOR MILITARY PATIENTS AND EMPLOYEES

Penn Medicine is committed to supporting patients and employees who have served or continue to serve in the U.S. military. Scan the blue QR code to learn more about the *Veterans Care Excellence Program* for military patients and employees, and scan the red QR code to log in to the Penn Cobalt *Veteran Resource Center* for LG Health employees.

REFERENCES

1. 'Colonel' John Mead, Enigmatic 'Gentleman Bum' of the River Hills, Lost House Rock Home Found! Uncharted Lancaster. Accessed January 2, 2025. https://unchartedlancaster.com/colonel-john-mead-enigmatic-gentleman-bum-of-the-river-hills-lost-house-rock-home-found/
2. Pols H, Oak S. War & military mental health: the US psychiatric response in the 20th century. *Am J Public Health.* 2007;97(12):2132-2142.
3. Lande RG. American Civil War medical practice, the post-bellum opium crisis and modern comparisons. *Hist Psychiatry.* 2020;31(4):483-494.
4. Carroll DJ. *Invisible Wounds: Mental Illness and Civil War Soldiers.* Louisiana State University Press; 2021.
5. Sommerville DM. Post traumatic stress disorder and the American Civil War. National Museum of Civil War Medicine. May 2, 2019. Accessed January 2, 2025. https://www.civilwarmed.org/ptsd/
6. Leupo K. The history of mental illness. Girls Lost in the World. April 4, 2016. Accessed January 2, 2025. https://www.kimberlyleupo.com/2016/04/athens-ohio-asylum-for-insane-flashback.html
7. Devine S. *Learning from the Wounded: The Civil War and the Rise of American Medical Science.* The University of North Carolina Press; 2014.
8. Kiger PJ. How many died in the Revolutionary War? History.com. Updated January 29, 2025. Accessed April 4, 2025. https://www.history.com/articles/revolutionary-war-deaths
9. Mackowski C. *Hell Itself: The Battle of the Wilderness, May 5-7, 1864.* Savas Beatie; 2016.
10. Horwitz T. Did Civil War soldiers have PTSD? Smithsonian Magazine, January 2015. Accessed April 4, 2025. https://www.smithsonianmag.com/history/ptsd-civil-wars-hidden-legacy-180953652/
11. Frueh BC, Smith JA. Suicide, alcoholism, and psychiatric illness among Union forces during the U.S. Civil War. *J Anxiety Disord.* 2012;26(7):769-775.
12. St. Elizabeth's Hospital in the Civil War. National Museum of Civil War Medicine. November 25, 2020. Accessed January 2, 2025. https://www.civilwarmed.org/st-elizabeths-hospital/
13. Pizarro J, Silver RC, Prause J. Physical and mental health costs of traumatic war experiences among Civil War veterans. *Arch Gen Psych.* 2006;63(2):193-200.
14. Levin A. With changing insights, military psychiatry evolved over time. *Psychiatric News.* 2019;54(22). https://doi.org/10.1176/appi.pn.2019.5a27
15. Sartor Z, Kelley L, Laschober R. Posttraumatic stress disorder: evaluation and treatment. *Am Fam Physician.* 2023;107(3):273-281.
16. Saguil A. Psychological and pharmacologic treatments for adults with PTSD. *Am Fam Physician.* 2019;99(9):577-583.
17. Salunier KG, Brabbs S, Szymanski BR, et al. Suicide risk among veterans who receive evidence-based therapy for posttraumatic stress disorder. *JAMA Network Open.* 2024;7(12):e2452144.
18. Simmons, Mark. Personal communication, December 6, 2024.
19. Borowski S, Caine ED, Kumar SA, Karras E, Gamble S, Vogt D. Well-being and suicidal ideation in U.S. veterans: age cohort effects during military-to-civilian transition. *Am J Prev Med.* 2025;68(5):944-953.
20. Sommerville DM. A burden too heavy to bear. The New York Times. April 2, 2012. Accessed October 2, 2025. http://opinionator.blogs.nytimes.com/2012/04/02/a-burden-too-heavy-to-bear/

Kenneth W. Lin, MD, MPH
Penn Medicine Lancaster General Health
540 N. Duke St., Lancaster, PA 17602
Kenneth.Lin@pennmedicine.upenn.edu

Scan the QR on page 98 for a list of mental health resources available to clinicians and patients.

NARRATIVE MEDICINE

Naming the Pain, Claiming the Healing

Hattie McCarter, MS, CEIP, ECDHE
Ambassador Program Manager, Department of Diversity, Equity and Inclusion
Penn Medicine Lancaster General Health

August 8, 2022 — a date forever etched in my memory. It was the day before I was to see my favorite rap artist, Kendrick Lamar, perform in Philadelphia. Little did I know this day would mark a turning point in my life. At the time, I was serving as the equity management program coordinator for an organization in which I no longer work, one of a few departments within that large organization that was intentional about weaving equity into the fabric of its workforce and culture.

The day began with an email from one of the directors requesting a meeting with my supervisor and me to discuss the trajectory of the equity management program. I was filled with excitement and anticipation, having developed a comprehensive proposal to integrate a human-centered approach into our department. The plan included education workshops, town halls, curriculums, speakers, accountability measures for leadership, recruitment strategies, and policies aligned with the department's vision. I was confident this could have positive effects throughout the organization and the community. Moreover, I had a previous working relationship with this director before he'd assumed his new role, and I knew he recognized the value I brought to this work.

As my supervisor and I walked to the meeting, the director greeted us and led us into his office. The atmosphere was typical of a corporate office: dry, with stale carpet and the strong scent of cologne. We engaged in small talk while waiting, and I shared my excitement for the concert. To my surprise, the director revealed he was also a fan of Kendrick Lamar. This revelation challenged my biases, as I did not expect a polished, white-collar executive to be a fan of hip-hop.

However, the mood shifted dramatically when the second-in-command closed the door. The director's demeanor changed from warm and engaging to detached and emotionless. He crossed his legs, folded his arms, and stared blankly, saying, "Hattie, as of today, your program has been sunsetted." I was perplexed. "Sunsetted? What does that mean? Are we going on a field trip?" My supervisor asked for clarification, and the director explained that the equity management program would be "discontinued effective immediately."

I had worked in this organization for nearly a dozen years, moved from being a vocational rehabilitation counselor to a program coordinator. I had faced challenges, including a strained relationship with a past supervisor, but I kept showing up, earning strong reviews, and believing I was building a career rooted in service and equity. That's why the meeting left me in shock.

The organization's current leadership was retiring, and there was uncertainty regarding new leadership. Whether true or not, my program was shut down. The director's team had already written a new role for me — résumé and career development for diverse candidates — and I would be reassigned to a supervisor I had known previously and whom I did not feel I could trust. On top of that, I was told some leaders thought I had a hidden agenda, that I made people uncomfortable, and that I had been labeled a bully, a racist, even an atheist.

I was given a choice: take a voluntary demotion with my pay intact or be placed under someone who didn't care for me, doing work I would hate. Either way, the message was the same: the work I had built and the reputation I thought I had earned had been stripped away. I felt an overwhelming sense of disbelief and rage. And in that moment, I unraveled — my chest tight, my breath uneven — tears spilled in front of my supervisor and the two executives.

I asked to be excused and left the office in urgency and despair. Later, I ignored the 10 calls from my supervisor, and although I went to the concert, front row for Kendrick Lamar, I could not shake the new burden and weight of what had just happened.

The next day, I emailed my director and supervisor, letting them know that I chose the position that allowed me to keep my current pay — a voluntary demotion into a job I knew I would hate. It wasn't what I wanted, but it allowed me to hold on to a shred of dignity.

After that, my professional performance deteriorated from commendable to questionable. I began arriving late to work, entering and leaving the building quietly. Often, I would leave the office to have lunch or cry in my car. This behavior was a sign of what I later realized was deep depression, compounded by the stress of applying to over 76 jobs without success.

The exhaustion of always code-switching and pretending to be fine weighed on me, even as I carried a quiet rage and the unspoken desire to confront those who had devalued me. For almost eight months, I repeated the words "racist" and "bully" in my mind, unable to look at my colleagues without wondering if they thought those things about me — or if they were the ones who said them.

I reached a breaking point and no longer wanted to go on. Everything I'd poured myself into felt wasted, invisible. I drove to Chickies Rock along the Susquehanna River, stood on a boulder with a view of the water, and prayed for the wind to take me. Instead, I heard my late father's voice: "No! This is not your way out. Don't give up." I found myself back on a bench, crying and praying.

Two weeks later, I came across a free course on Instagram about Racelighting and Racial Battle Fatigue.[1] Intrigued by the topic, I enrolled.

The seminar opened with an introduction by Dr. William A. Smith, distinguished professor of education, culture, and society at the University of Utah, who coined the phrase, "racial battle fatigue." As the course progressed, his descriptions resonated with many experiences from my life, including my upbringing as a young Black girl from the South. Things started to make sense, and I felt outraged.

I was finally able to articulate what millions in Black and Brown communities face. We are not crazy. Racial battle fatigue reflects an ancestral trauma that has impacted Black and Brown bodies across generations. Understanding how the many forms of racism move through our bodies — physiologically, psychologically, and behaviorally — was enlightening.

Table 1. Being an Ally to Those Facing Racial Battle Fatigue

Understanding racial battle fatigue is step one. Practicing allyship is step two. Allyship means listening, learning, and leveraging privilege to reduce systemic harm.[5]

Educate Yourself Without Expecting Emotional Labor
Learn about systemic racism, microaggressions, and historical oppression without relying on those most affected to be your teachers. Listen, read, and engage with content produced by marginalized communities.

Trust and Validate Lived Experience
When someone shares a racialized experience, do not minimize or explain it away. Instead, say: "I believe you. That's not okay. What do you need from me?"

Interrupt Harm in Real Time
Whether in a staff meeting, classroom, or social space — speak up when you notice microaggressions or racist actions. Silence is complicity.

Use Your Voice Where Others Stay Silent
Advocate in decision-making spaces for fair policies, equitable representation, and accountability — even when no one is applauding.

Check Your Own Bias and Fragility
Being an ally isn't about perfection — it's about being open to feedback and willing to shift your behavior, even when it feels uncomfortable.

Create Space, Not Just Support
Real allies don't just "help" — they build power alongside others by advocating for marginalized peers to lead projects, shape policy, and co-design solutions.

Prioritize Rest and Healing
Acknowledge that those experiencing racial battle fatigue may need space to recharge, set boundaries, or step back. Respect that need.

Stay Committed Beyond the Headlines
RBF doesn't take a break — and neither should allyship. Consistency matters, even when it's not convenient or trendy.

RACIAL BATTLE FATIGUE

In 2004, Dr. Smith introduced the theory of racial battle fatigue (RBF) as a way of explaining the cumulative physical and psychological responses to the stress experienced by people of color — specifically Black Americans — in racially stressful or invalidating surroundings.[2] RBF is a term to describe the accumulated effect of sustained exposure to racial microaggressions, discrimination, marginalization, and institutional oppression that drains a person's well-being over time.[3] It is the fatigue that results from being "on guard" all the time, performing, hiding feelings, and constantly needing to prove one's humanity in environments where race is devalued or weaponized.

Dr. Smith began developing the RBF model while researching Black male employees and stu-

dents in predominantly white institutions (PWIs). The research revealed that such individuals frequently experienced recurring race-related stressors that triggered their body's physiological stress responses. Symptoms of RBF often include anxiety, hypervigilance, depressed mood, anger, increased blood pressure, sleep disturbances, and feelings of isolation.[4] These are not only affective but also somatic, which means that racism can have a physical impact on well-being and the capacity to succeed.

Since first being coined, the term "racial battle fatigue" has been used to describe the symptoms and experiences of individuals in many environments — including workplaces, hospitals, police interactions, and everyday community life. Minorities in the corporate world can find themselves subjected to daily slights — being mistaken for administrative staff, excluded from leadership discussions, or barraged with subtle innuendos about "fit" and "professionalism." Those micro-slurs, often unnoticed or unchecked by colleagues or managers, take a crushing psychological toll. The constant race stressors can lead to burnout, disillusionment, and exodus.[2]

RBF arises from more than interpersonal interactions; it may also originate in systemic disparities that can be embedded in society's very fabric. The silence and inaction of bystanders and leadership only deepen the exhaustion. When people of color speak about their realities, they are often met with skepticism, defensiveness, or requests to "be more civil," which can mute the expression of their experiences. This invalidation compounds emotional labor and erodes trust in organizational systems.

The concept that individual interactions and systemic constructs can have physiological effects also allows us to think about solutions. How can we support, how can we encourage, how can we help marginalized individuals heal? To respond to racial battle fatigue, organizations must be more than observers. They must commit to systemic reform and active allyship (see Table 1 on page 113).

CONCLUSION

That moment of realization, inspired by Dr. Smith, flipped everything for me. Naming my pain gave me permission to honor it instead of hiding it. Healing, I've learned, isn't about bouncing back — it's about standing unapologetically in my truth. Racial battle fatigue, as Dr. Smith describes it, isn't weakness. It's the body and spirit responding to a system that demands silence as the price of survival.[2] But silence is not safety. And survival is not the goal — liberation is.

So, here's the charge: If you call yourself an ally, you must be more than a witness. Listening isn't enough. Words aren't enough. Allyship means showing up when it's inconvenient, speaking up when it's unpopular, and standing tall when the room goes quiet. It's using your influence when no one is watching. It's choosing to break patterns, even when you benefit from them. It's the courage to stand in the breach when voices tremble, to amplify truth when it's being muted, and to embrace discomfort when comfort equals complicity.

My story is mine — the hurt, the breaking, the rebuilding. But what you do with it is yours. Will you turn away, or will you lean in? Will you keep demanding resilience from the harmed, or will you finally help stop the harm?

The choice is yours ... because healing doesn't begin with time. It doesn't begin with silence. Healing begins when enough of us decide to stop the bleeding, call things by their name, and build a future where survival is no longer the bar. Liberation is. And that work — that choice — can start with you.

REFERENCES

1. Wood JL. "J Luke Wood and Frank Harris III are hosting a free, online series...." Instagram. October 14, 2022. Accessed October 20, 2025. https://www.instagram.com/tv/CjtparNsSZL/
2. Smith WA. Black faculty coping with racial battle fatigue: the campus racial climate in a post-civil rights era. In: Cleveland D. (ed.). *A Long Way to Go: Conversations About Race by African American Faculty and Graduate Students*. Peter Lang; 2004:171-190.
3. Smith WA. (2023). *Racial Battle Fatigue in Higher Education: Exposing the Myth of Post-Racial America*. Routledge; 2014.
4. Smith WA, Allen WR, Danley LL. "Assume the position ... you fit the description": psychosocial experiences and racial battle fatigue among African American male college students. *Am Behav Sci*. 2007;51(4): 551-578.
5. Quaye SJ, Karikari SN, Allen CR, Okello WK, Carter KD. Strategies for practicing self-care from racial battle fatigue. *JCSCORE*. 2019;5(2):94-131.

Hattie McCarter, MS, CEIP, ECDHE
Penn Medicine Lancaster General Health
607 N. Duke St., Lancaster, PA 17602
Hattie.McCarter@pennmedicine.upenn.edu

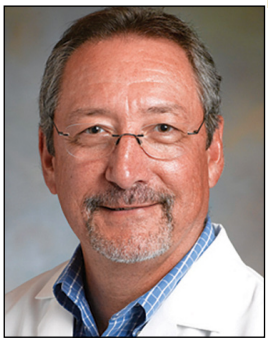
This article alludes to suicidal ideation, depression, and grief/adjustment issues. If you, a colleague, or a patient needs help, please call the Suicide & Crisis Lifeline at 9-8-8 or scan the QR code at right for additional resources.

NARRATIVE MEDICINE

This Is Our Lane

Physicians' Special Responsibility to Address the Public Health Issue of Firearm Injury

Edward T. Chory, MD



Thirty years ago, in February 1995, the American College of Physicians published the first of three position papers in the *Annals of Internal Medicine*[1] reminding physicians of their duty to address the public health issue of firearm injury. The second, published in 2014, was a response to the Sandy Hook Connecticut School shooting, and in 2018, after the Majorie Stoneman Douglass school shooting in Parkland, Florida, a third position paper[2] triggered a tweet from the National Rifle Association telling physicians to "Stay in their Lane."

Dr. Joseph Sakran, a trauma surgeon at Johns Hopkins Hospital in Baltimore — himself a survivor of a gunshot wound to his neck that injured his carotid artery, paralyzing his phrenic nerve and vocal cord when he was 17 — responded by creating This Is Our Lane, an organization dedicated to involving physicians with firearm injury prevention and advocacy.[3]

The number of annual deaths from firearms in the United States peaked in 2021 at 48,800, and although still high, the total deaths decreased for the two most recent years data are available, 2022 and 2023. Understandably, mass shootings generate the most media attention and public response, yet school shootings account for only 1% of firearm mortality, as do unintentional shootings and legal interventions. The fact that the majority of people who die from gunshot wounds shoot themselves may be underappreciated. Suicide by firearm far outnumbers homicides, police interventions, and unintentional shootings.

> *"The fact that the majority of people who die from gunshot wounds shoot themselves may be underappreciated. Suicide by firearm far outnumbers homicides, police interventions, and unintentional shootings."*

These horrific tragedies apparently motivated the American College of Physicians to publish the two most recent calls to action. The 2018 position paper expanded on the 2014 paper, and the sentiments were endorsed by many organizations, such as the American College of Surgeons, American College of Obstetricians and Gynecologists, American Public Health Association, American Psychiatric Association, American Academy of Family Physicians, American Academy of Pediatrics, American College of Emergency Physicians, and American Bar Association. It was subsequently endorsed by 52 groups that included organizations of clinicians, consumers, families of gun violence victims, researchers, public health institutions, and other health advocacy agencies.

The second recommendation in 2018 stated:

> The medical profession has a special responsibility to speak out on prevention of firearm-related injuries and deaths, just as physicians have spoken out on other public health issues. Physicians should counsel patients on the risk of having firearms in the home, particularly when children, adolescents, people with dementia, people with mental illnesses, people with substance use disorders, or others who are at increased risk of harming themselves or others are present.[2]

In 2020, firearm injury became the number one cause of childhood mortality in the United States. In September 2022, the American College of Surgeons Committee on Trauma, along with 45 other professional associations, participated in a medical summit to update the previous recommendations to combat firearm injury and mortality. In addition to the American College of Surgeons, the American College of Physicians, American College of Emergency Physicians, American Academy of Pediatrics, and Council of Medical Specialty Societies agreed to cohost a second Medical

Summit on Firearm Injury Prevention. Proceedings of this summit published in the *Journal of the American College of Surgeons* stated that the objectives for the 2022 Summit were to:

> 1. Identify recommendations for executive action and/or legislation at the municipal, state, and federal level that would decrease firearm-related injury.
>
> 2. Identify key elements of the most effective violence-reduction programs for implementation by physician practices/clinics/hospitals/health systems, in partnership with their communities, to lower the risk of violence for marginalized communities disproportionately impacted by violence.[4]

Former U.S. Surgeon General Vivek Murthy issued an advisory in June 2024 declaring firearm violence to be a public health crisis. Unfortunately, in the past few months the Advisory has been removed from the U.S. Health and Human Services website.

Despite repeated and unequivocal calls for physicians to discuss responsible gun ownership and safety, we have failed as a profession to fulfill our responsibility and must do better. Multiple studies have documented disappointing engagement regarding the topic of gun safety by both patients and physicians. A KFF poll in March 2023 demonstrated that only 5% of patients recall a physician ever discussing gun safety with them,[5] and a study published in the *Annals of Family Medicine* in May 2020 showed only 25% of physicians say they address this topic with their patients.[6]

A major barrier for physicians is a lack of confidence in their knowledge base and training in how to discuss firearm injury prevention and safe storage. The ability to discuss this issue with patients in a nonjudgmental, professional way is a challenge we must meet to be trusted and effective. This Is Our Lane has worked with the Brady organization to address the lack of training by producing a comprehensive, 44-page publication that includes data, guidelines, scripts, and links to numerous resources — many of which can be downloaded — including printable posters and pamphlets.

> *"Our work is not complete ... it is past time to incorporate firearm safety discussions into continuity care for patients. There are abundant resources to help [initiate] these conversations."*

The BulletPoints Project, created by the California Firearm Violence Research Center at the University of California, Davis, is another excellent resource. Its purpose is to give clinicians the knowledge and tools they need to reduce the risk of firearm injury and death in our patients.

Their website offers an enormous amount of material, including a 60-minute continuing medical education course, printable posters, educator toolkits, examples of clinical scenarios, information on interventions that might be appropriate, and counseling techniques. It is a gold mine of information and resources to help clinicians routinely discuss firearm safety with their patients.

In addition, the AMA,[7] the American Academy of Pediatrics, Bloomberg School of Public Health at the Johns Hopkins University,[8] American Association of Public Health,[9] and other specialty organizations have published videos and other information to help physicians develop the skills, confidence, and conviction to address firearm injury prevention. The Proceedings of the Medical Summit — Firearm Injury Prevention also contains excellent guidelines for how to approach discussions with patients about firearm safety.[4]

In April 2024, Nancy Walecki, in her article "The Doctor Will Now Ask You About Your Gun" in *The Atlantic,*[10] asked whether it is best to address gun safety in a universal manner or more selectively. Currently New York City's largest health care system, Northwell is trying to make gun safety discussion a routine part of every patient encounter, while at Johns Hopkins and the University of Colorado, the topic of gun safety is initiated with patients who are perceived to have risk factors such as homes with children or elderly individuals in the home. There is not yet good data to help us discern which approach is better, yet explaining the importance of gun safety, including addressing safe storage, is essential and can be done in a respectful, non-political way. Informative brochures and posters can be placed in our office waiting rooms, and the BulletPoints Project encourages us to emphasize suicide risk awareness and lethal means assessment, including safe storage.

Pia Fenimore, MD, vice chair of pediatrics at Penn Medicine Lancaster General Health, has responded to

the firearm injury epidemic by obtaining a grant from the Pennsylvania Department of Health. Working with Lindsay Pringle, MEd, from LG Health's Community Health and Wellness Center, they have been conducting firearm safety classes and distributing no-cost gun locks and biometric safes. Partnering with the Sheriff's Association of Lancaster County and Mental Health America, they have developed an impressive program.

The response from the community has been gratifying. Their initiative was described in detail in the Winter 2024 issue of this journal,[11] and their excellent program emphasizes the two areas where physician awareness and advocacy can have the greatest impact: suicide awareness and safe firearm storage.

But our work is not complete. If you have not yet done so, it is past time to incorporate firearm safety discussions into continuity care for patients. Further, there are abundant resources to help every physician get beyond any reluctance they may harbor in initiating these conversations. Addressing this public health crisis is right in our wheelhouse.

Firearm Injury Prevention Resources

Agree to Agree
AgreeToAgree.org/HealthCare

This new campaign from the American Medical Association and the Ad Council seeks to empower clinicians to confidently and compassionately engage patients in conversations about firearm injury prevention. Online resources include videos, fact sheets, toolkits, and conversation guides for clinicians to help patients and their families understand the risks associated with unsecured firearms and best practices for secure storage to help reduce injuries and deaths.

This Is Our Lane
bradyunited.org/take-action/join-movement/this-is-our-lane

Brady
bradyunited.org

The BulletPoints Project
bulletpointsproject.org

Lancaster County Safe Firearm Storage Initiative
mhalancaster.org/suicide-prevention-coalition/gun-lock-project/

Scan the QR on page 98 for a list of mental health resources available to clinicians and patients.

REFERENCES

1. Weinberger SE, Hoyt DB, Lawrence HC, et al. Firearm-related injury and death in the United States: a call to action from 8 health professional organizations and the American Bar Association. *Ann Intern Med.* 2015;162(7):513-516.
2. Butkus R, Doherty R, Bornstein SS, et al. Reducing firearm injuries and deaths in the United States: a position paper from the American College of Physicians. *Ann Intern Med.* 2018;169(10):704-707.
3. Hatler C. His lane. Johns Hopkins University, Johns Hopkins Magazine. Fall 2024. Accessed September 17, 2025. https://hub.jhu.edu/magazine/2024/fall/joseph-sakran-gun-violence-our-lane/
4. Sakran JV, Bornstein SS, Dicker R, et al. Proceedings from the second Medical Summit on Firearm Injury Prevention, 2022: creating a sustainable healthcare coalition to advance a multidisciplinary public health approach. *J Am Coll Surg.* 2023;236(6):1242-1260.
5. Schumacher S, Kirzinger A, Presiado M, Valdes I, Brodie M. Americans' experiences with gun-related violence, injuries, and deaths. KFF.org. April 11, 2023. Accessed October 20, 2025. https://www.kff.org/other-health/americans-experiences-with-gun-related-violence-injuries-and-deaths/
6. Tolat ND, Naik-Mathuria BJ, McGuire AL. Physician involvement in promoting gun safety. *Ann Fam Med.* 2020;18(3):262-264.
7. Fryhofer S. How physicians can talk to patients about gun violence and firearm safety. American Medical Association. March 9, 2023. Accessed September 17, 2025. https://www.ama-assn.org/delivering-care/public-health/how-physicians-can-talk-patients-about-gun-violence-and-firearm
8. Rosen A. Yes, you should ask if someone has guns in the home. Here's how. Johns Hopkins Bloomberg School of Public Health. May 30, 2023. Accessed September 17, 2025. https://publichealth.jhu.edu/2023/why-and-how-you-should-ask-other-parents-if-they-own-guns
9. Betz ME, Harkavy-Friedman J, Dreier FL, Pincus R, Ranney ML. Talking about "firearm injury" and "gun violence": words matter. *Am J Public Health.* 2021;111(12):2105-2110.
10. Walecki N. The doctor will ask about your gun now. The Atlantic. April 1, 2024. Accessed September 17, 2025. https://www.theatlantic.com/health/archive/2024/04/doctor-gun-safety-screening-public-health/677938/
11. Pringle L, Fenimore P. Preventing death by firearm in Lancaster County. *JLGH.* 2024;19(4):99-104.

Edward T. Chory, MD, is a retired general surgeon who spent 29 years caring for the citizens of Lancaster County.

PHOTO QUIZ FROM THE PRIMARY CARE
ADVANCED PRACTICE PROVIDER ONBOARDING PROGRAM

A Massive Encounter

Elizabeth Ruhl, MSN, CRNP, FNP-C
Nurse Practitioner, Family Medicine Lincoln
Penn Medicine Lancaster General Health Physicians

CASE HISTORY

A 56-year-old male presents with a chief complaint of back pain located between his spine and left shoulder blade. He reports that symptoms began after tripping into a column at a gas station about a month prior to the office visit. He reports his pain is intermittent and can radiate up and down the muscles to the left of his spine.

The patient works in construction with a lot of overhead reaching; he says the pain is especially noticeable at the end of the day after work. The pain can be dull or tight, and he occasionally feels a sharp pain that radiates under his scapula and across the left posterior ribs. He has tried ibuprofen and a heating pad with minimal relief.

His past medical history includes essential hypertension treated with olmesartan-HCTZ™ 40-12.5 mg. No diarrhea, nausea, vomiting, or constipation are noted, and the patient denies difficulty with urination. He does note that he has not had much appetite since the fall of 2024.

The patient also points to a large area of swelling in the left upper quadrant of his abdomen; he states he started experiencing left lower quadrant abdominal pain in October 2024 and was told that he had a mild case of diverticulitis. A colonoscopy was completed at the time and all of the removed polyps were benign. The tenderness in the left lower quadrant has since disappeared, but he noticed the swelling in the left upper quadrant sometime after having the colonoscopy.

He denies other constitutional symptoms, but when his last three weights are reviewed, it appears he has lost more than 30 pounds in the last year; this has been unintentional. His vital signs are stable and he is afebrile. A physical exam of his back reveals no tenderness, bruising, swelling, muscle spasms, bony tenderness, or decreased range of motion. There are no significant findings in the neck, upper extremities, or lower extremities.

The abdominal exam reveals a large, firm, nontender mass in the left upper quadrant. The mass visibly protrudes when he is supine. There is no skin discoloration, and the edges of the mass are unable to be definitively palpated due to size and location. No other significant findings emerge during the abdominal exam.

The patient agrees to continue heat application and add a muscle relaxer for left back pain.

Considering this left upper quadrant mass in the setting of anorexia and unintentional weight loss, a complete blood count with differential and comprehensive metabolic panel is ordered, along with an abdominal ultrasound.

QUESTIONS

1. What are some differential diagnoses for a left upper quadrant mass in this patient?
2. What diagnoses may present with findings of anorexia, weight loss, and a painless abdominal mass?
3. What initial laboratory testing is most important to consider?
4. What is the preferred diagnostic imaging choice for abdominal masses?

ANSWERS

1. The differential diagnoses in this case include splenomegaly, hernia, lipoma, gastrointestinal mass, hepatic mass, pancreatic mass, renal mass, and adrenal mass.
2. Diagnoses that may present similarly include malignant disease processes, specifically renal, hepatic,[1] splenic, pancreatic,[2] gastrointestinal, and adrenal[3] malignancies.
3. Initial lab testing should include a comprehensive metabolic panel and complete blood count with differential. Evaluating hepatic and renal function along with any platelet abnormalities or anemia can help direct the diagnostic process.[1,2] Given the wide range of diagnostic possibilities, other labora-

tory testing might include an evaluation of adrenal hormones such as cortisol, aldosterone, and androgens, as well as a fasting glucose.[2]

4. Preferred imaging for the diagnostic evaluation of abdominal masses varies. If there is a high suspicion for hepatic mass, an abdominal ultrasound can be considered. However, an abdominal computed tomography (CT) scan with and without contrast is generally recommended for both diagnostic and staging evaluation for most of the potential diagnoses in this case.[1-3]

ADDITIONAL CASE HISTORY

Laboratory results include the following: RBC: 4.46; hemoglobin: 11.8; HCT: 37.8; MCH: 26.5; MCHC: 31.2; AST: 74. All other levels are within normal limits. Upon reviewing results and assessment findings, a CT scan of the abdomen would be appropriate for further evaluation.

The CT scan impression is as follows: "Huge heterogeneous vascular left-sided retroperitoneal mass displacing adjacent structures and likely renal in origin. Findings most likely represent a renal cell carcinoma."

The mass is noted to be at least 25 cm in diameter per the radiologist's interpretation (see Fig. 1), and the left kidney and other local structures are noted to be anteriorly displaced (see Fig. 2).

Fig. 1. CT abdomen with contrast. "Huge" heterogeneous mass of the left abdomen (estimated 25 cm at largest diameter). Left kidney unable to be visualized in this view.

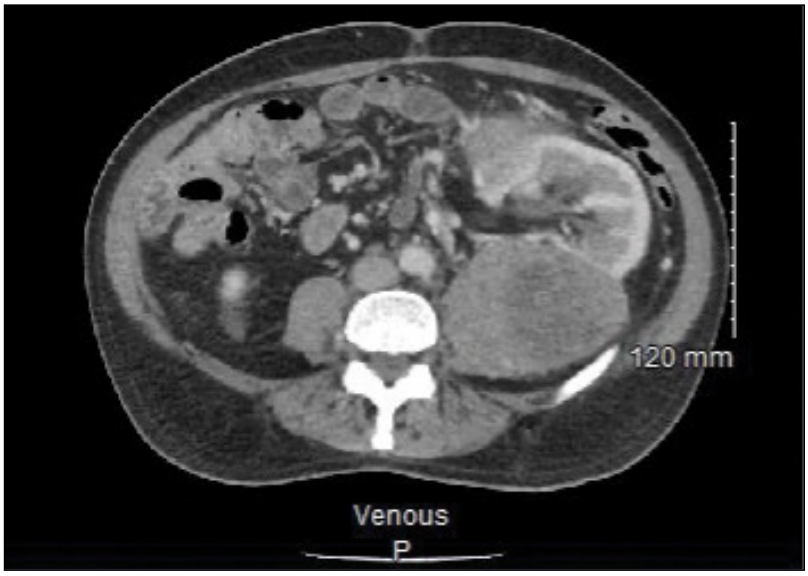


Fig. 2. CT abdomen with contrast. Left kidney with anterior displacement due to mass along with other local structures.

The patient is contacted and informed of the results; an urgent referral is placed for the patient to see a urologist.

DISCUSSION

Abdominal masses may go unidentified due to vague symptoms that can be attributable to other disease processes, therefore it is important to conduct a thorough history and abdominal exam for each patient presenting with the symptoms described in this case.[1-3]

Prompt laboratory testing — including a comprehensive metabolic function and complete blood count — and imaging are essential in identifying masses, narrowing the differential diagnoses, and ensuring the prompt referral to appropriate specialists for further management. Additionally, while abdominal ultrasound is appropriate for a variety of abdominal disease processes, a CT with and without contrast is the most appropriate initial imaging when evaluating a possible mass.[1-3]

Adrenocortical carcinomas (ACC) have an incidence rate of one to two cases per one million adults. ACCs can occur throughout the lifespan but typically are diagnosed in individuals who are over 40 years old. Between 40% and 60% of cases present with signs of

hormone excess, the most common constellation being Cushing's syndrome, with symptoms including hypertension, central weight gain, the development of diabetes mellitus, and easy bruising. Patients may also present with abdominal pain/fullness, weight loss, and anorexia.[4]

Although adrenal masses are often found incidentally on studies done for other reasons, the evaluation of a suspected abdominal mass should include a CT of the abdomen/pelvis with and without contrast.

Staging of ACC is approached similarly to other types of malignancies with consideration of where it may have metastasized. Most patients are not diagnosed until stages III and IV, when surgical intervention is not possible and thus the prognosis is poor.[4] The treatment is palliative instead of curative in these cases.[4]

There is limited high-quality evidence to support a specific treatment pathway. Patients with less advanced disease (stages I-III) have better five-year survival rates.[4]

Currently, the only curative treatment for ACC is complete surgical resection. Combination treatment with etoposide, doxorubicin, cisplatin, and mitotane should be considered for advanced ACC; radiotherapy may be considered on a case-by-case basis.[4,5]

Immunotherapy is currently under study for the management of ACC, especially for patients with an otherwise poor prognosis.[5] Several clinical trials and international collaborations remain underway to further study and improve the treatment, quality of life, and outcomes for patients with ACCs.[4] These include the International Pediatric Adrenocortical Tumor Registry through St. Jude Children's Research Hospital, the ADIUVO trial through the University of Turin in Italy which is studying the effectiveness of adjuvant mitotane therapy, and the European Network for the Study of Adrenal Tumours (ENSAT).

CASE OUTCOMES

The patient is seen back in the office of his primary care team about two months after his initial presentation and one month after surgery. Ultimately, he underwent an open resection of the left retroperitoneal mass, a left nephrectomy, a distal partial pancreatectomy, and splenectomy. The final pathology demonstrated a high-grade ACC.

All margins of removed tissues were free of abnormal cells, including one retroperitoneal lymph node. The most effective treatment for ACC is surgical resection, thus no radiation, chemotherapy, or adjuvant medications are necessary.[3]

The patient's recovery has been satisfactory per his surgeons, and serial imaging is planned to monitor his recovery. At the time of his visit with the primary care team, he reports he is doing well and, specifically, that his appetite has returned. His vital signs are stable, and his lab results have returned to normal.

REFERENCES

1. Sudhakar V, Chandan V, Roberts L. Liver masses: a clinical, radiologic, and pathologic perspective. *Clin Gastroenterol Hepatol.* 2014;12(9):1414-1429.
2. Hidalgo M. Medical progress: pancreatic cancer. *N Engl J Med.* 2010; 362(17):1605-1617.
3. Rowe N, Kumar R, Scheida N, et al. Diagnosis, management, and follow-up of the incidentally discovered adrenal mass: CUA guideline endorsed by the AUA. *J Urol.* 2023;210(4):590-599.
4. Shariq O, McKenzie T. Adrenocortical carcinoma: current state of the art, ongoing controversies, and future directions in diagnosis and treatment. *Ther Adv Chronic Dis.* 2021;12:20406223211033103.
5. Zhang Z, Liu N, Li Q. EDP-M plus sintilimab in the treatment of adrenocortical carcinoma: a case report. *Transl Cancer Res.* 2022;11(6):1829-1835.

Elizabeth Ruhl, MSN, CRNP, FNP-C
LGHP Family Medicine Lincoln
101 Larkspur Ln.
Ephrata, PA 17522
Elizabeth.Bartsch@pennmedicine.upenn.edu

SPOTLIGHT ON CLINICAL RESEARCH

Starting Your Clinical Research Journey

Heather Madara
Supervisor Research Regulatory and Outreach
Roy S. Small, MD
Medical Director of Clinical Research
Penn Medicine Lancaster General Health Research Institute


Small


Madara

In previous Spotlights, we have highlighted resources available for researchers at Penn Medicine Lancaster General Health, how to submit to the Institutional Review Board (IRB) at the University of Pennsylvania, the One Penn Medicine One Research model, and the process for conducting investigator-initiated studies.

Anyone who wants to participate in clinical research must complete certain requirements, but to be a Principal Investigator for a research study, the standard is higher. This Spotlight outlines the requirements and expectations of Principal Investigators conducting research at LG Health, along with the support available to them.

PRINCIPAL INVESTIGATORS

At Penn Medicine, a Principal Investigator (PI) is:

> ... responsible for the preparation, conduct, and administration of a research grant, cooperative agreement, training or public service project, contract, or other sponsored project in compliance with applicable laws and regulations and institutional policy governing the conduct of clinical research.[1]

Much of the research conducted at LG Health falls into the category of sponsored or industry research. You can find information about investigator-initiated research at LG Health in the *JLGH* Winter 2024 Spotlight on Research.[2]

In sponsored research, an external sponsor, such as Medtronic, Eli Lilly, or Novo Nordisk, develops a research study and reaches out to research sites to invite them to participate in the study. Sponsors provide approved sites with all study materials needed to conduct the study, including the protocol, informed consent form(s), pharmacy and laboratory manuals, and recruitment materials.

Before a sponsor will approve a site for participation in their research study, the site must identify a PI. To be eligible to serve as PI of a research study, you must:

- Complete Human Subjects Protection and Good Clinical Practice training.
- Have a valid medical license.
- Practice in the study's field of focus (e.g., interventional cardiology, neurology, oncology).
- Agree to be responsible for the overall conduct of all research activities at the study site.

During the start-up process and throughout the duration of the study, additional requirements and documentation may be needed, including:

- Complete a study-specific financial disclosure.
- Attend a site initiation visit (SIV), typically held virtually.
- Complete study-specific documents (e.g., protocol signature page, investigator agreement).
- Support the informed consent process. The process varies between studies and may require the PI to be the one to consent eligible patients or may allow for other study team members to conduct the informed consent process.
- Review adverse events in participants to determine relatedness to study and severity of the event.
- Complete study update trainings, as needed.

LG HEALTH RESEARCH SUPPORT

The team at the Research Institute is composed of clinical research coordinators, research assistants, project managers, regulatory personnel, and more who are available to support researchers in their research journey. This support includes:

- Communicating with the study sponsor and any other study-related companies.
- Negotiating the study budget and contract.
- Coordinating site initiation visit, monitoring visits, and other study visits/meetings.
- Coordinating and maintaining required training and documentation.
- Submitting the study to the Penn IRB and to the central IRB, if appropriate. This includes initial

submission, study modifications, annual reviews, and all other types of submissions throughout the duration of the study.
- Providing study updates and associated trainings, as needed.

ADDITIONAL INFORMATION

If you are interested in participating in a sponsored research study or have been contacted by an industry sponsor, the Research Institute is available to guide you through the process. Scan the QR code below for more information about the Research Institute and other research teams at LG Health.

REFERENCES

1. Principal Investigator (PI) Training. Penn Medicine. n.d. Accessed October 8, 2025. https://www.med.upenn.edu/clinicalresearch/principal-investigator-pi-training.html
2. Becker H, Madara H. Investigator-initiated research at LG Health. *JLGH*. 2024;19(4):124-125.

Heather Madara
Penn Medicine LG Health Research Institute
133 E. Frederick St.
Lancaster, PA 17602
Heather.Madara@pennmedicine.upenn.edu

Roy S. Small, MD
The Heart Group of LG Health
217 Harrisburg Ave.
Lancaster, PA 17603
Roy.Small@pennmedicine.upenn.edu

Correction: The Spotlight on Research in the Fall 2025 issue of JLGH *contained an error in the print version: Joette Hughes, CRNP, is the sub-investigator for the Lp(a) EZEF – ACCLAIM study. The authors and editors extend an apology to Joette for the error. This was corrected in the online version of the article on September 11, 2025.*

PRINCIPAL INVESTIGATOR TESTIMONIALS

"I could never have embarked on my PI journey without the comprehensive assistance provided to me by the team of research professionals at the Penn Medicine Lancaster General Health Research Institute. I was part of a sponsored study, which required a lot of coordination, but communication from the research team was always timely and appropriate. After guiding me through the required trainings, they paved the way through the whole process, negotiating budgets and contracts, IRB submissions, coordinating the site initiation visit, helping me sort through protocols, protocol amendments, and consent forms, and so much more.

The clinical research coordinators, [many of whom are] experienced RNs, were there with me for consent visits, making sure both I and the participants were supported, and coordinating the next steps. They worked with my busy schedule to make research possible for me, coming to my office whenever needed and making it easy for me to sign off on necessary documents. I felt completely supported throughout the entire process and was never overwhelmed because I always knew what the next step was.

If you are a clinician interested in research, you are very fortunate to have such a knowledgeable and experienced research team right here at LG Health to make your research goals a reality."

— Virginia M. Wray, DO, Bariatric Physician Specialist

* * * * *

"The research team at LG Health paved the way for the Foundation Wellness Programs to Combat Clinician Stress (FACCTS) study and laid a strong foundation from its very inception. This excellent team consisted of the research project manager, research regulatory and outreach supervisor, research director, and research coordinators. This team has been very helpful and supportive with formulating the IRB protocol submission, working on the grant-writing application process, developing the workflow and outreach, and managing the contract processes for this study.

I would also like to thank the Research Institute leadership and executive leadership team at LG Health for being supportive of this study. As a busy clinician balancing clinical responsibilities with research, I am fortunate to be part of this well-articulated team, dedicated to advancing clinical research."

— Mrinalini Meesala, MD, FACC, RPVI, Chief of Cardiology

TOP TIPS FROM FAMILY PRACTICE

Meningitis, Vaccinations, Radon and Gestational Diabetes, Diphenhydramine Use

Alan S. Peterson, MD
Emeritus Director, Environmental and Community Medicine
Walter L. Aument Family Health Center

WORLD HEALTH ORGANIZATION 2025 MENINGITIS GUIDELINES

The World Health Organization earlier this year released new guidelines on the diagnosis, treatment, and care of meningitis.[1] Of note:

- In individuals with expected acute meningitis, a lumbar puncture should be performed, ideally prior to initiating antimicrobial treatment, unless there are specific contraindications.
- For suspected acute meningitis, cerebrospinal fluid (CSF) investigation should include Gram stain, white blood cell count, protein concentration, glucose concentration, and the CSF-to-blood glucose ratio.
- Intravenous ceftriaxone or cefotaxime should be administered as empiric treatment in children and adults with suspected or probable acute bacterial meningitis. Ampicillin or amoxicillin should be added if there are risk factors for *Listeria monocytogenes* infection.
- For suspected or probable pneumococcal meningitis, intravenous corticosteroids (e.g., dexamethasone) should be initiated with the first dose of antibiotics.
- Osmotic agents other than glycerol, such as mannitol or hypertonic saline, can be used for managing increased intracranial pressure in bacterial meningitis.
- Close contacts of patients with laboratory-confirmed meningococcal disease should receive antibiotic prophylaxis with single-dose parenteral ceftriaxone or oral ciprofloxacin.
- Rehabilitation should be provided as soon as possible for children and adults with sequelae due to acute meningitis from any cause.
- Formal audiological screening should be conducted before discharge for children and adults with acute meningitis. If this is not possible, it should occur within four weeks of discharge.
- Children and adults with acute meningitis should be reviewed for sequelae by a clinician prior to discharge and at follow-up.
- Strengthening community awareness about the potential sequelae of meningitis is crucial for improving follow-up care and reducing stigma.

EMERGENCY ROOM PATIENTS WOULD ACCEPT IMMUNIZATIONS, IF OFFERED

Many individuals who are not up to date with recommended vaccinations would accept vaccines if offered during an emergency department visit, according to a new study from the University of California Riverside School of Medicine.[2]

Researchers surveyed non-critically ill adult patients evaluated in 10 emergency departments in eight U.S. cities across five states to ascertain patients' vaccination knowledge, self-reported vaccination coverage, and willingness to receive vaccines in an emergency department. A total of 3,285 patients agreed to participate.

The researchers found that 49.4% of participants had not heard of one or more vaccines recommended for their age group by the Centers for Disease Control and Prevention. Additionally, 85.9% had not received one or more recommended vaccines. Non-Hispanic, Black race and ethnicity, lack of primary health care, and lack of health insurance were factors associated with not being up to date with the recommended vaccinations (adjusted odds ratios, 1.93, 2.91, and 3.01, respectively).

Overall, 46.4% of 2,821 participants who were not up to date with recommended vaccinations said they would accept one or more missing vaccines if they could be provided during the emergency department visit; 86.7% of those would accept all missing vaccines. The participant being unaware of or not having been offered the vaccines was the primary reason for missed vaccine doses.

The researchers concluded: "Emergency departments could be explored as additional sites to offer vaccination screening, recommendations, counseling, and referrals to increase vaccine coverage among underserved populations."

HIGH RADON LEVELS LINKED TO GESTATIONAL DIABETES

New data linking higher county-level radon exposure to gestational diabetes in women who haven't previously given birth emphasize the need to consider environmental risks in maternal and fetal health care.[3]

New York researchers found in a study of 9,107 nulliparous pregnant women that those living in U.S. counties with higher (2 picocuries [pCi]/L) radon levels had higher odds of developing gestational diabetes than those in counties with lower (<1 pCi/L) radon levels (odds radio [OR], 1.37; 95% CI, 1.02-1.84). The researchers used three radon categories; the middle level was 1 to <2 pCi/L.

They also found higher odds of gestational diabetes in women who had ever smoked, women who lived in counties with a higher (2 pCi/L) radon level (OR, 2.09; 95% CI, 1.41-3.11) and women living in counties with both higher radon and fine particulate matter air pollutant (PM2.5) levels (OR, 1.93; 95% CI, 1.31-2.83), though no statistically significant interactions were observed.

Gestational diabetes affects about 10% of pregnancies every year in the United States, according to the Centers for Disease Control and Prevention, and can affect women and offspring long term as it raises mothers' risk of type 2 diabetes and cardiovascular disease, along with the risk for childhood obesity. Radon exposure's link with lung cancer risk has been well established, but its link to other health risks is uncertain. As readers are likely aware, many areas in Lancaster County have elevated levels of radon.

The researchers urged that individual-level studies be conducted to further investigate radon's link to health risks, noting that "radon is possibly the most prevalent indoor carcinogen to which human beings are exposed."

LONG OVERDUE FAIRWELL TO THIS "DIRTY DRUG"

Diphenhydramine (Benadryl®) crosses the blood-brain barrier and can cause sedation, weight gain, and cognitive impairment — especially in children.

The World Health Organization in early 2025 released a formal advisory against using first-generation antihistamines like diphenhydramine, citing their outdated pharmacology and unfavorable safety profile.[4] It is hoped that North America can follow in the footsteps of Sweden and Germany, where diphenhydramine is reportedly being pulled off the shelves.

For physicians in the United States, this raises several questions:

- Is it time to de-emphasize diphenhydramine in clinical recommendations?
- Are we doing enough to educate patients on their risks when using first-generation antihistamines?
- Should pediatric and allergy societies in the United States push for similar labeling or policy changes?

Diphenhydramine remains widely used — often over second-generation antihistamines like cetirizine, loratadine, or fexofenadine, which are non-sedating and have fewer effects on the central nervous system.

The organization's recommendation is clear: clinicians should no longer recommend first-generation antihistamines due to their high-risk profile, especially when safer and equally effective options exist.

Many allergists say that the health care community needs to wait for the Food and Drug Administration to act. Many already avoid recommending diphenhydramine when possible, but this new push offers opportunities to reinforce the message by:

- Updating patient handouts, especially for parents and caregivers.
- Discussing second-generation alternatives first, and emphasizing non-sedating benefits.
- Reinforcing these points in pharmacy and urgent care settings where diphenhydramine is often reflexively given.

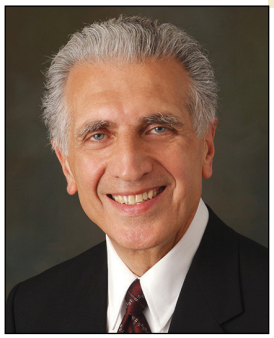
REFERENCES

1. World Health Organization. WHO guidelines on meningitis diagnosis, treatment and care. World Health Organization; 2025. Accessed September 22, 2025. https://iris.who.int/bitstream/handle/10665/381006/9789240108042-eng.pdf
2. Rodriguez RM, Torres JR, Chinnock B, et al. Emergency department survey of vaccination knowledge, vaccination coverage, and willingness to receive vaccines in an emergency department among underserved populations — eight U.S. cities, April-December, 2024. *MMWR Morb Mortal Wkly Rep.* 2025;74(29):456-462.
3. Radon Exposure and Gestational Diabetes. JAMA Network Open. News release. Published January 10, 2025. Accessed February 27, 2025. https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2828917
4. Clark, JH, Meltzer, EO, Nacilerio RM. Diphenhydramine: it is time to say a final goodbye. *World Allergy Organ J.* 2025;18(2):101027.

Alan S. Peterson, MD
Walter L. Aument Family Health Center
317 Chestnut St.
Quarryville, PA 17566
717-786-7383
Alan.Peterson@pennmedicine.upenn.edu

MEDICAL HISTORY

The Hospitals of Lancaster County



Nikitas J. Zervanos, MD
Director Emeritus, Department of Family and Community Medicine
Director Emeritus, Family Medicine Residency Program, 1969-2002
Lancaster General Hospital

Editor's note: This series of articles by Dr. Zervanos focuses on the circumstances, institutions, and people who built the medical community now recognized as Penn Medicine Lancaster General Health. Much of the information comes from manuscripts he authored and donated to the American Academy of Family Physicians Foundation. This installment discusses the hospitals of Lancaster County.

Before community hospitals existed in Lancaster County, there were military hospitals, dating back to the American Revolutionary War era. These included Ephrata Hospital, established in the Cloisters; Lititz Hospital, located in the Moravian Brothers' House, which is still standing as a Revolutionary Memorial next to the Lititz Moravian Church; and a hospital in Manheim housed in Saint Paul's Reformed Church.[1] While there is no longer a military hospital here in Lancaster County, the Lebanon County Veterans Administration hospital serves this area and has an outreach clinic in Willow Street to meet the needs of veteran patients.

THE MUSSER HOMESTEAD AND HOSPITAL

The Musser Hospital was located in the same building as the medical practice and homestead of Dr. Benjamin Musser (1749-1820); it may have been the first private hospital in Lancaster County. Other practitioners maintained infirmaries for seriously ill patients within the confines of their medical practice buildings. The Musser homestead still stands in Manor Township.

The homestead of the Musser family served as what may have been Lancaster County's first private hospital. The building – now a private home – still stands in Manor Township. *Photo courtesy of the author.*

THE LANCASTER COUNTY ALMSHOUSE AND HOSPITAL

Construction of the first community hospital in Lancaster County began in 1797 and was completed in 1800. The intent of the Lancaster County Almshouse, as the name implies, was to accommodate poor people who could not take care of themselves and/or who did not have sufficient family support. Ideally, the goal of those staying at the Almshouse was to learn to care for themselves; however, patient challenges were both physical and mental, so long-term health care became a major concern. Thus, in 1807, a second building was erected and designated as a "commodious house" to be used as a hospital.[2]

Postcard of the Lancaster County Almshouse and Hospital as it once stood in downtown Lancaster.

When the facility opened on December 2, 1800, Dr. John Perkins was appointed to serve as the attending physician, at a salary of $90 per year. In one day in November 1809, there were 28 patients. Although the rest of the buildings are now gone, the original building still stands and is considered the second-oldest standing hospital in the United States. It is located at 900 E. King Street in Lancaster, behind what was a long-term care facility known as Conestoga View, now named the Lancaster Nursing and Rehabilitation Center.[1]

ST. JOSEPH'S HOSPITAL

By the early 1870s, with advancements in both medicine and surgery and as Lancaster grew and prospered, there was demand for another hospital, where

more could be done for patients with catastrophic illnesses and especially life-threatening injuries.

In 1877, leading members of Lancaster's Catholic community, led by the Rev. Father Ignatius Sagerer and the Society of St. John of God, built a hospital on the corner of W. Chestnut Street and College Avenue for $650. Its first medical director was Dr. John Light Atlee (1799-1885).[3] The new hospital remained in operation until June 1882, when it was forced to close due to severe financial difficulties. Thanks to Mother M. Agnes, superior general of the Third Order of St. Francis, and the Philadelphia Foundation, it reopened in 1883 as St. Joseph's Hospital.

Postcard of St. Joseph's Hospital, Lancaster, circa 1920-1929. Distributed by I. Steinfeldt, Lancaster, PA.

The third John L. Atlee, MD (1875-1950) greatly influenced the growth and development of St. Joseph's Hospital and helped it become a well-regarded surgery center in Lancaster County.[4] Dr. Atlee was credited with the hospital's reorganization and expansion and, along with his sons, John L. Atlee, MD, and William A. Atlee, MD, developed and expanded the surgical service, including the establishment of a residency program in surgery.[5]

LANCASTER GENERAL HOSPITAL

In the early 1890s, the Lancaster County Almshouse and Hospital was devoted entirely to the care and needs of the poor, and St. Joseph's Hospital was operating at capacity. With a growing population of over 150,000 people in the county and 30,000 residents in the city, the need for a third hospital had become a topic of considerable public interest and concern.

Lancaster General Hospital was founded in 1893, under the leadership of the charismatic Rev. D. Wesley Bicksler and with financial support from tobacco merchant Reuben Bertzfield and shoe merchant H. M. Ilyus. The original building still stands at 322 N. Queen Street.[6]

According to hospital board meeting minutes from the late 1800s, hospital admissions totaled 541 patients during the first four years. Of these, 308 were classified as surgical patients. Among the medical admissions, 105 patients were diagnosed with gastrointestinal, heart, cerebrovascular, and infectious diseases. Twenty-four died from typhoid fever, tuberculosis, endocarditis, cholelithiasis, hepatic congestion, and cerebral hemorrhage; and 16 who underwent surgery died. There were no reported cases of death from myocardial infarction or pneumonia, presumably because those so afflicted would never have made it to the hospital. The first infant was delivered at LGH on January 9, 1896.[6]

Although the third Dr. John Atlee (1875-1950) was particularly active at St. Joseph's Hospital, he also operated at LGH. Until 1915, he also reportedly continued doing a fair amount of "kitchen-table surgery" in patient homes. Many people continued to view any hospital as a place where one went only when ready to die. Despite the introduction of antisepsis and sterile techniques, most operative procedures performed in the hospital — such as incision and drainage of abscesses, repair of simple fractures, tonsillectomies, and even appendectomies — were performed by general practitioners with little or no specialized surgical training.[6]

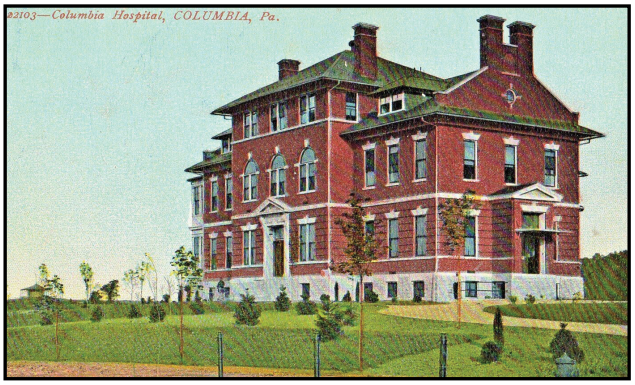
In 1912, when internship became a requirement for licensure in Pennsylvania, Lancaster General Hospital established a formal certified internship program.[6] Over the years, LGH also hosted residency programs in pathology and surgery, yet these programs were ultimately short-lived. When family medicine became a specialty in 1969, LGH replaced its general practice residency with a three-year residency in family medicine, among the first such programs in the country; to this day, this residency program continues to be well regarded.

COLUMBIA HOSPITAL

At the end of the 19th century, a group of public-spirited citizens met in the Bible School room of the Reformed Church, located at Third and Cherry Streets in Columbia. They discussed plans for the organization and opening of a hospital, established a Board of Managers, and chose to rent a mansion, once the family home of Mrs. Eleanor Righter Craig, at 115 S. Second Street. A charter was granted on March 14, 1895, and Columbia Hospital opened two months later.

Although once a prosperous and booming community during the late 19th and early 20th centuries, the city of Columbia witnessed an economic decline due to the loss of its lumber, silk, coal, iron, boat-building, and grain industries, as well as its canal and

railroad facilities. Its population went from more than 12,000 people in 1900 to 10,500 by the year 2000, despite a tripling of the county's population during the same period. And 100 years after opening, Columbia Hospital was sold in May 1995 and renamed Lancaster General Hospital — Susquehanna Division.



Postcard of Columbia Hospital, circa 1910.
Distributed by Souvenir Postcard Co., New York, NY.

Yet the change in demographics continued to have profound consequences on the hospital's finances, and the facility finally closed its doors in 2003.[7] At that time, the 62-bed complex at 306 N. Seventh Street was converted into a modern outpatient medical center for the citizens of Columbia that incorporated emergency medical services, primary physicians' offices, onsite consultation services from LGH specialists, admission and business offices, medical records, and up-to-date diagnostic and imaging services.[8]

LANCASTER OSTEOPATHIC HOSPITAL

In 1921, a group of osteopathic physicians and their wives campaigned to raise funds to establish their own osteopathic clinic, to be known as the A.T. Still Clinic. It began in the Woolworth Building in downtown Lancaster and later moved to 17 S. Lime Street. There, operations such as tonsillectomies and adenoidectomies were performed.

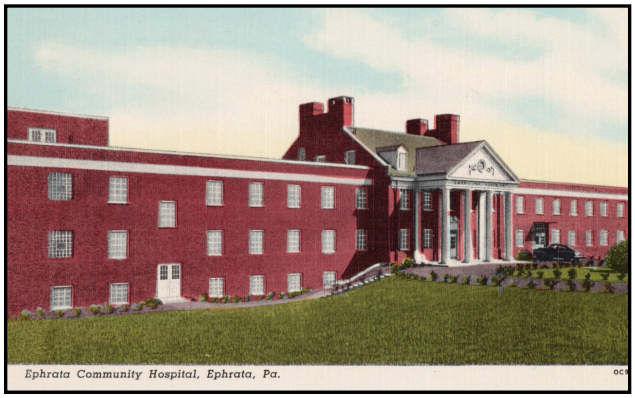
By 1929, plans had been approved to build a new three-story hospital, but its construction came to a standstill due to the Great Depression. In the meantime, Ralph P. Baker, DO, opened his own six-bed minor surgical hospital at 327 N. Duke Street. Ultimately, sufficient funds were raised to construct the Lancaster Osteopathic Hospital, which commenced operations in 1942. It was later renamed Lancaster Community Hospital.[9]

EPHRATA COMMUNITY HOSPITAL

In the 1930s, a group of spiritualists calling themselves the Temple of Truth were led by Ethel Riley Post Parrish, a clairvoyant and an American spiritualist who claimed intuitive abilities to see a person's past, present, and future. Parrish called herself a "physical medium" and desired to bring happiness to others, so she formed a church and school in Miami, Florida, to educate spiritual ministers. During one of her seances, she communicated with a Cherokee Indian guide known as Silver Belle.

In 1932, Parrish was joined by an Ephrata couple, Mr. and Mrs. John Stephan. Wanting to escape the heat of Florida summers, they chose to relocate their institute to Ephrata. In 1935, they purchased the former Mountain Springs Hotel in Ephrata and renamed it Camp Silver Belle, after Ethel's spiritual guide. The site of the former resort was intended to host meetings, conferences, services, and vacations, and serve as a destination for spiritualists. Its mineral springs were reputed to have healing powers, attracting people from afar to manage, if not cure, their various ailments.

In 1937, the American Legion bought the property. It converted a part of the hotel into the 16-bed Stephan Memorial Hospital, which was manned by spiritualists and operated as a nonprofit institution. Two years later, it was chartered as the Ephrata Community Hospital, and the board hired a medical director and surgeon, Harold A. Mengle, MD.[10]



Postcard of Ephrata Community Hospital, circa 1930-1945.
Distributed by Weit News Co., Ephrata, PA.

When World War II broke out, the greater Ephrata community had relatively few physicians, and some were called upon to join the U.S. military. Besides Mengle, the burden of care fell on others, most notably, Paul M. Riffert, MD, a dedicated surgeon, whose services were desperately needed and greatly appreciated. Ephrata's growing population, coupled with concerns regarding the challenges the medical community had experienced during the war, led to a groundswell of support for a new hospital, which was

finally built in 1949.[11] By 1961, it had achieved a 100-bed status, and in 2013, what had been the Ephrata Community Hospital became part of the WellSpan Health hospital system.

TODAY'S COMPETITIVE LANDSCAPE

With the changing times, and as a result of competing forces, St. Joseph's Hospital closed in the year 2000. Lancaster Community Hospital, which was slated for closure, was also sold to a for-profit company and came to be known as Regional Medical Center of Lancaster. In 2004, the hospital relocated to its present location in Lititz and was renamed Heart of Lancaster Regional Medical Center. In 2017, it became part of PinnacleHealth, which ultimately became part of the University of Pittsburgh Medical Center Health System. The hospital is now known as UPMC Lititz. It offers an active graduate medical education program, with residencies in internal medicine and anesthesiology.

WellSpan Ephrata Community Hospital currently offers 141 licensed beds and serves as a clinical site for WellSpan York's residency programs in general surgery and internal medicine.

Penn State Health Lancaster Medical Center is a 142-bed hospital that opened in October 2022. It offers advanced primary stroke care and accommodates local, independent doctors and emergency medical services. Penn State Health Lancaster also offers a residency in pharmacy and serves as a graduate medical education training site for residents and fellows.

PENN MEDICINE LANCASTER GENERAL HEALTH

In 2015, Lancaster General Hospital became part of the University of Pennsylvania Health System. Penn Medicine Lancaster General Health is the largest health system in the county, with more than 800 licensed beds in a comprehensive network of care. Including LGH with 525 beds in downtown Lancaster, the nearby Lancaster Behavioral Health Hospital with 126 beds, as well as Women & Babies Hospital with 95 beds and Lancaster Rehabilitation Hospital with 59 beds at its suburban campus just west of downtown Lancaster, LG Health serves more than 200,000 patients in Lancaster and from surrounding counties.

Penn Medicine brings to Lancaster the strength of a world-renowned, not-for-profit academic medical center. The Lancaster General Health system continues to support research and teaching, serving as an educational site for St. Joseph's University health sciences students, as well as medical students, residents, and fellows from the Penn State College of Medicine, Philadelphia College of Osteopathic Medicine, Temple University Lewis Katz School of Medicine, and University of Pennsylvania School of Medicine, among others. With its own graduate medical education department, it continues to support its own residents and fellows training in pharmacy, family medicine, geriatrics, and sports medicine.

REFERENCES

1. Tindall HL. Colonial military hospitals. In: *A History of Medicine in Lancaster County.* Lancaster City and County Medical Society; 1976:28-29,48-49.
2. Talbott P. The two hundred year history of the Lancaster County Almshouse and Hospital. *J Lanc Co Hist Soc.* 2000;102(2/3):82-113.
3. Ellis F, Evans S. *History of Lancaster Pennsylvania.* Everts & Peck; 1883:464.
4. *Souvenir of the Golden Jubilee of St. Joseph's Hospital, 1883-1933.* St. Joseph's Hospital; 1933:6,20.
5. Tindall HL. The Atlees: giants of Lancaster medicine. In: *A History of Medicine in Lancaster County.* Lancaster City and County Medical Society; 1976:113.
6. Zervanos NJ. Lancaster General Hospital, 1893-1912. *J Lanc Co Hist Soc.* 2018;119(1):3-18.
7. Stauffer C, Poist P. LGH closing hospital in Columbia June 30. LNP | Lancaster Online. Updated September 11, 2013. Accessed September 10, 2025. https://lancasteronline.com/news/lgh-closing-hospital-in-columbia-june-30/article_2fc2b354-5140-5aba-9521-47cdb9f2df13.html
8. Lines J. History of Columbia Hospital, Lancaster General Hospital, Susquehanna Division. Dedication Service, September 15, 1996, Penn Medicine Lancaster General Health.
9. Wiley D. Chapter 11: Osteopathic medicine in Lancaster County. In: *Our Heritage.* Lancaster City and County Medical Society; 1995:77-78.
10. Spohn CE. The Ephrata Mountain Springs. In: Greene JA, ed. *Volume II: The Later Years, 1882-2004, The Von Nieda Years, Camp Silver Belle and the Temple of Truth, and Ephrata's First Hospitals.* Cocalico Valley Historic Society; 2010.
11. Wissler RU. The Ephrata Community Hospital, from its founding to 1961. *J Hist Soc Cocalico Valley.* 1987;12:10.

Nikitas J. Zervanos, MD
Lancaster, PA
njzervan@comcast.net

Readers are reminded that admission to the Lancaster Medical Heritage Museum is free to LG Health employees with a badge and children under age 3. Admission for all others is $8.00 per person. The museum's collection of 11,000+ medical artifacts is located at 410 N. Lime St., Lancaster. Visit lancastermedicalheritagemuseum.org for additional information and hours of operation.

THE JOURNAL OF
LANCASTER GENERAL HOSPITAL
Owned and published by
Penn Medicine Lancaster General Health

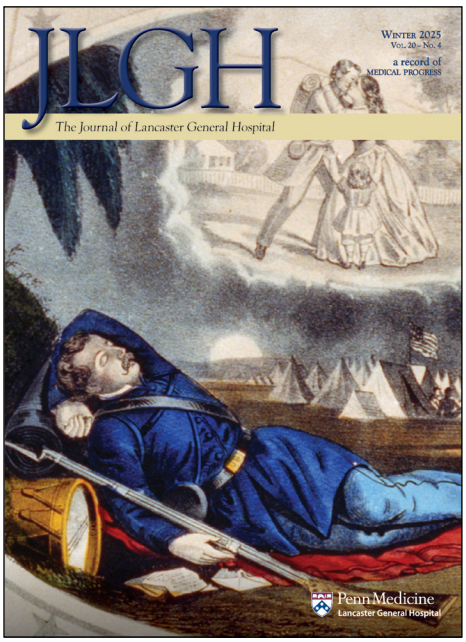
The Journal of Lancaster General Hospital is published quarterly by Lancaster General Hospital, a nonprofit, community hospital in Lancaster, PA. The hospital and its parent, Lancaster General Health, are members of the University of Pennsylvania Health System (Penn Medicine). The journal is sent to the medical staff of Lancaster General Hospital, to physicians and others involved in delivery of health care in our service area, and to the administrative and medical leadership of Penn Medicine.

Correspondence Email
Maria.Boyer@pennmedicine.upenn.edu

Mailing Address
540 N. Duke Street | P.O. Box 3555
Lancaster, PA 17604-3555

Website: JLGH.org

ISSN 1940-2813



This issue's cover — a section of "The Soldier's Dream of Home" painting, from the Currier & Ives Collection at the Library of Congress — depicts a Union soldier lying by a campfire, with a rifle, drum, and letter, dreaming of his welcome home by his wife and child. The painting is highlighted in a mental health exhibit at the National Museum of Civil War Medicine in Frederick, Maryland.

See page 108 of this issue for an article by Kenneth Lin, MD, on 19th-century mental disorders and the American Civil War.

INTERESTED IN WRITING FOR *JLGH*?

The following is a summary of the general guidelines for submitting an article to *The Journal of Lancaster General Hospital*. Details are located online at JLGH.org.

- Scientific manuscripts are typically between 2,500 to 4,500 words. Narrative medicine articles are usually shorter, and photo quizzes average about 725 words plus illustrations.
- Medical articles should report research, introduce new diagnostic or therapeutic modalities, describe innovations in health care delivery, or review complex or controversial clinical issues in patient care.
- Reports of research involving human subjects must include a statement that the subjects gave informed consent to participate in the study and that the study has been approved by the Institutional Review Board (IRB).
- Patient confidentiality must be protected according to the U.S. Health Insurance Portability and Accountability Act (HIPAA).
- The Journal of Lancaster General Hospital *does not allow chatbot tools such as ChatGPT to be listed as authors.* JLGH *editors warn authors that the use of these tools poses a risk for plagiarism with inappropriate use of citations, and we require that use of such tools be disclosed.*

Please contact the managing editor, Maria M. Boyer, via email at Maria.Boyer@pennmedicine.upenn.edu to discuss submitting an article or for further information.

Penn Medicine
Lancaster General Hospital

555 N. Duke St.
Lancaster, PA 17602

EARN CME CREDIT

American Medical Association Category 2 activities consist of self-directed learning or courses that have not been through a formal approval process. According to the Pennsylvania State Board of Medicine, this includes "learning experiences that have improved the care [physicians] provide their patients." Reading authoritative medical literature — like medical journals — is one such activity.

For Pennsylvania physicians, more information and the Pennsylvania Board of Medicine CME Reporting Form are available from the Pennsylvania Department of State. *For advanced practice providers,* information is available from credentialing organizations.

Physicians can also log credit and advanced practice providers can access transcripts through their eeds accounts online.

← Scan to access your eeds account.

← Scan for additional information and links to individual reporting instructions and forms.

Upcoming CME Offerings at LG Health in 2026

Research Grand Rounds
January 8, February 5, March 5
12:00 noon-1:00 p.m.

Pediatric Grand Rounds
January 13, February 10, March 10
7:00-8:00 a.m.

Geriatric Medicine Fellowship Conference Series
January 14, 21, 28, February 11, 18, 25, March 11, 18
8:00-9:00 a.m.

Interested in having a CME event? Connect with the CME Department to learn how!

Kristy Askey
CME and Physician Engagement Manager
Kristy.Askey@pennmedicine.upenn.edu

Olivia Reiver
CME Compliance Specialist
Olivia.Reiver@pennmedicine.upenn.edu

The CME website is currently under construction. To access CME On-Demand courses, contact the CME Department for a direct link.