VIM Journal

February 1, 2023 Hilton Head Island, SC Issue #34, 32 pages

All contributions in this issue are original articles written by clinicians or staff at Volunteers in Medicine Clinic of Hilton Head Island.
Edited by Medical Executive Committee Chair, Steven P. Siegelbaum, MD, FACG.

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A Letter from the VIM Clinic Executive Director

John B. Newman, MD, FACS

Welcome to the 2023 edition of the VIM Journal. The clinical team at Volunteers in Medicine Clinic of Hilton Head Island have a long tradition of accumulating practical advice for our partners at the Clinic and across the nation. We are pleased to present this year's collection for your reading enjoyment. We hope you might glean something of value and equally would love to hear back from you regarding your thoughts and experiences. These articles are meant to be pragmatic and thought-provoking. Many of us in the free and charitable clinic space come from a subspecialty background but spend our days trying to make small core improvements in the health and wellness of our patients. Perhaps the greatest message the VIM Journal sends is that *you are not alone*.

Thank you for all you do for our patients and we truly hope that you are finding purpose and joy in the medicine you are practicing. There is a reason we keep coming back to the Clinic. Perhaps some of the work we do will get us into heaven and perhaps some of the work we do might keep us out of hell. At the end of the day, we give all we can and leave with more than we showed up with. I guess that is the secret to *healing ourselves*.

Thank you for being part of the solution.

Gastroesophageal Reflux Disease (GERD)

James Murphy, MD, FACG

Gastroesophageal reflux disease (GERD) is one of the most commonly diagnosed disorders in the United States with a prevalence of 18%-28%, resulting in a significant economic burden in direct and indirect costs and adversely affecting quality of life in many patients. GERD is often classified into three different types: nonerosive reflux disease (60%-70%), erosive esophagitis (30%), and Barrett's esophagus (6%-12%).

Etiology:

The lower esophageal sphincter (LES) is a 3-4 cm contracted smooth muscle segment located at the esophagogastric junction. Normally, the LES maintains a higher pressure than the intragastric lumen. While it is tempting to say that the cause of reflux is simply a laxity of the (LES) - multiple factors may be involved. Additional forces such as esophageal dysmotility, transient relaxation of the LES, delay in gastric emptying, presence of a hiatal hernia, or an increase in intra-abdominal pressure, often related to obesity, may alternatively contribute to the refluxing of acid into the esophagus. There are multiple risk factors associated with the development of GERD symptoms including age greater than 5O years, low socioeconomic status, tobacco use, and alcohol. Medications such as anticholinergics drugs, benzodiazepines, nonsteroidal anti-inflammatory drugs, aspirin, nitroglycerin, and calcium channel blockers may also contribute.

History and physical:

The typical presentation of GERD is heartburn and regurgitation. However, GERD can also present with various other symptoms that include dysphagia (difficulty swallowing), odynophagia (painful swallowing), belching, epigastric pain and nausea. GERD may also present with atypical extra-esophageal symptoms such as chest pain, cough, asthma, laryngitis, dental caries or a globus sensation.

Evaluation:

Commonly the diagnosis of GERD is made presumptively, and an empiric trial of a proton pump inhibitor (PPI) with a positive response to therapy can confirm the diagnosis. Endoscopic evaluation, esophagogastroduodenoscopy (EGD), as an initial diagnostic tool is not recommended and should be

reserved for patients with alarm symptoms such as dysphagia, weight loss, and gastrointestinal (GI) bleeding.

Treatment and management:

The goals of managing GERD are to address the resolution of symptoms and to prevent complications such as strictures, Barrett's esophagus and most certainly, the development of adenocarcinoma of the esophagus. Treatment and management include:

1. **Medical Therapy:**
   Gastric acid reduction is considered the front-line therapy, and PPI treatment is considered to be the most effective. Currently omeprazole, lansoprazole, and esomeprazole are available over-the-counter. The American College of Gastroenterology recommends a PPI once daily before first meal of the day for a full 4 to 8 weeks with an inadequate response dosing can be increased to twice daily with the addition of a night time dose. Guidelines recommend against screening for helicobacter pylori (H. Pylori) in patients with GERD symptoms.

2. **Endoscopy:**
   The indications for diagnostic EGD in patients with suspected GERD symptoms should be reserved for patients with alarm symptoms which include abnormal upper GI, increase risk for Barrett's esophagus, non-responders to adequate PPI therapy, dysphagia, odynophagia, weight loss and GI bleeding.

3. **Lifestyle modification**
   The long-held strategy of weight loss, avoiding late night dining and snacks, elevation of head of bed and acid suppression are still the cornerstones of effective therapy. Diet modification with the elimination of chocolate, coffee, spicy foods, citrus and carbonated beverages in GERD is currently not recommended.

4. **Surgical therapy:**
   Surgical therapy for GERD is reserved for medically refractory situations, anatomic conditions such as a large hiatal hernia, or for patients who desire discontinuance of long term medical therapy. Laparascopic Nissen fundoplication has been the gold standard for the surgical management of GERD. However, given the rapid rise in obesity in the U.S., gastric bypass

surgery is becoming the most common surgical treatment of GERD. The techniques, indications, and patient selection for these procedures can be found in the surgical literature.

5. **Endoluminal therapy:**
   A number of endoscopic surgical techniques have been developed for the treatment of GERD, but most of them have failed to demonstrate long-term efficacy. The most successful current techniques include magnetic sphincter augmentation (MSA) and transoral incisionless fundoplication (TIF). Both of these approaches have been shown to be effective therapeutic options in the treatment of GERD.

For a comprehensive review of this subject, please review ACG clinical guideline for the diagnosis and management of gastroesophageal reflux disease in American Journal of Gastroenterology (Katz et al., 2022).

1. Katz, P. O., Dunbar, K. B., Schnoll-Sussman, F. H., Greer, K. B., Yadlapati, R., & Spechler, S. J. (2022). ACG clinical guideline for the diagnosis and management of gastroesophageal reflux disease. *American Journal of Gastroenterology*, *117*(1), 27–56. https://doi.org/10.14309/ajg.0000000000001538

Obstructive Sleep Apnea: A short discussion of presentation, diagnosis and treatment

Robert Albertini, MD

Obstructive sleep apnea is being recognized as a relatively common affliction particularly in the increasingly overweight middle to elderly age groups. At Volunteers in Medicine Clinic, we have a few tools to help diagnose and determine severity as well as plan appropriate interventions. To better diagnose and treat, we need to understand the underlying pathophysiology. In this paper, I will attempt to describe presenting symptoms, physical findings, screening tools, diagnostic testing, and treatment recommendations.

The pathophysiology consists of obstruction of airflow in the nose and/or throat during sleep leading to a choking sensation, hypoxemia, and/or multiple wakening. The lack of adequate deep-level sleep leads to daytime somnolence and probably contributes to the prevalence of hypertension. If severe hypoxemia (saturation below 87%) is present for a significant amount of time the pulmonary vasculature responds with contraction leading to pulmonary hypertension and to right heart failure in extreme cases. The result of daytime sleepiness can lead to motor vehicle or work-related accidents and disrupted personal home life; nighttime snoring and restlessness are often disturbing to the patient's bed partner.

The physical causes of upper airway obstruction are varied. The most common are related to obesity and neck circumference leading to the collapse of neck soft tissue on inspiration. Several oral-pharyngeal abnormalities can contribute to or be the only cause. Including macroglossia, tonsillar hypertrophy, enlarged or elongated uvula, a high or arched palate, nasal obstruction and retrognathia (lower jaw set further back that the upper jaw).

Common presentations include nocturnal awakening and daytime sleepiness. Often bed partners bring patients in because of disrupted sleep caused by loud snoring and erratic movements of the patient during the night. The possibility of obstructive sleep apnea must be considered in patients presenting with hypertension, particularly those with significant obesity and often with type 2 diabetes as well. Such patients should be questioned as to daytime somnolence and other evidence of disturbed sleep. In extreme cases, patients may present with frank heart failure which can be either bi-ventricular or right-ventricular.

Common symptoms resulting from obstructive sleep apnea are:

- Loud, frequent snoring
- Witnessed episodes of apnea
- Excessive daytime sleepiness
- Recent motor vehicle accidents or near misses
- Frequent nocturnal wakening
- Nocturia
- Morning headaches
- Decreased concentration
- Depression
- Irritability
- Decreased libido

Evaluation of such patients should include measurement of body mass index, neck circumference and thorough head, neck, and oral cavity evaluation. Screening tools such as the Epworth sleepiness scale and STOP-Bang questionnaire (Figure 3) can be helpful in determining which patients should undergo a sleep study.

Findings to look for in a suspected sleep apnea patient include:

- Obesity: BMI greater than 35 kg/m^2
- Neck circumference: Male greater than 17 in.; female greater than 16 in.
- Oropharyngeal narrowing: Class III or IV on Mallampati classification (*See Figure 1*)
- Findings of right heart failure such as edema, hepatomegaly and/or increased pulmonic valve sound
- 9 points or greater on Epworth sleepiness scale (*See Figure 2*)
- A score 5 or greater on STOP-Bang questionnaire (*See Figure 3*)

If after the above evaluation, obstructive sleep apnea is suspected, a home sleep study and/or referral to pulmonology is indicated. At Volunteers in Medicine Clinic, we use the Watermark Medical Sleep Study System. This study is limited by the lack of a trained observer and no electroencephalogram (EEG) or accurate measure of airflow. However, oxygen saturation, pulse rate variation, number of and body position during apnea and hypopnea episodes and snoring level all contribute to the interpretation of the study.

Treatment depends on the type and severity of the findings. Sleep position alteration and possible surgical correction may be indicated. Most with significant obstructive sleep apnea will be tried on a

home continuous positive airway pressure (CPAP) device. CPAP (7-15 mm. Hg) stabilizes and prevents collapse of the upper airway during inspiration, preventing unwanted wakening due to a choking sensation. Patient acceptance and feedback after wearing the device is the best confirmation of the diagnosis.

For further information on this subject, please review:

- Patel, S. R. (2019). Obstructive sleep apnea. Annals of Internal Medicine, 171(11). https://doi.org/10.7326/aitc201912030
- Kline, L. R. (2022, December). *Clinical presentation and diagnosis of obstructive sleep apnea in adults*. UpToDate. Retrieved from https://www.uptodate.com/contents/clinical-presentation-and-diagnosis-of-obstructive-sleep-apnea-in-adults

Figure 1: Mallampati classification[1]

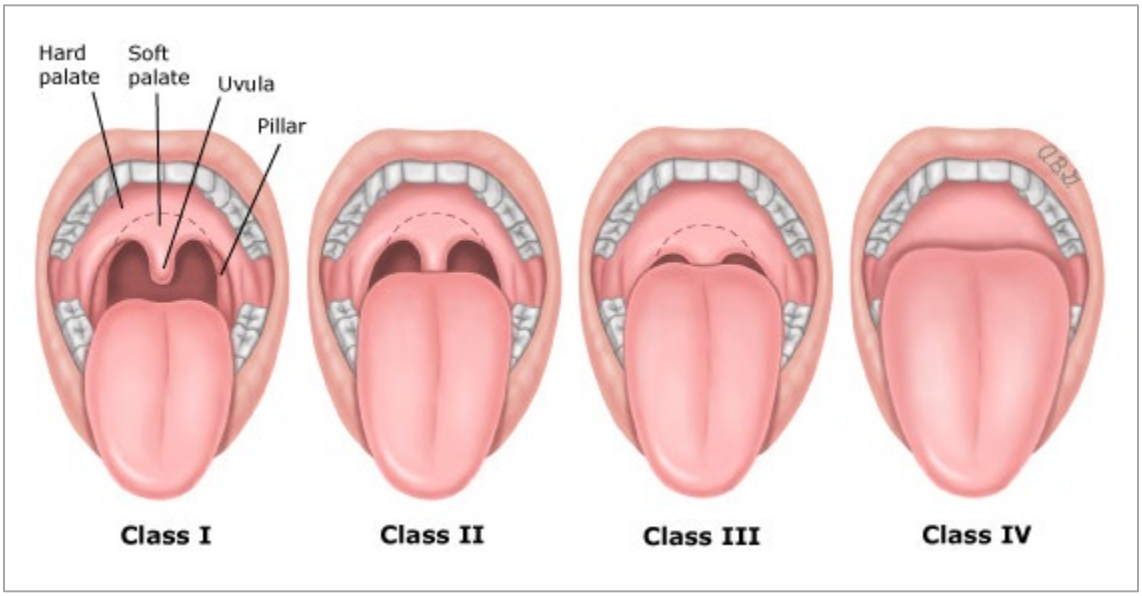


Figure 2: Epworth Sleepiness Scale[2]

Instructions: In your current, usual way of life, how likely are you to nod off or fall asleep in the following situations, in contrast to feeling just tired? Even if you haven't done some of these things recently, try to work out how they would affect you. It is important that you answer each question as best you can.

Using the following scale, choose the most appropriate number for each situation.

Situation	**0** Would never nod off	**1** Slight chance of nodding off	**2** Moderate chance of nodding off	**3** High chance of nodding off
Sitting and reading	O	O	O	O
Watching TV	O	O	O	O
Sitting, inactive, in a public place (e.g., in a meeting, theater, or dinner event)	O	O	O	O
As a passenger in a car for an hour or more without stopping for a break	O	O	O	O
Lying down to rest when circumstances permit	O	O	O	O
Sitting and talking to someone	O	O	O	O
Sitting quietly after a meal without alcohol	O	O	O	O
In a car, while stopped for a few minutes in traffic or at a light	O	O	O	O

Add up the numbers you selected for the eight situations to get your total score. A score of 10 or greater raises concern: you may need to get more sleep, improve your sleep practices, or seek medical attention to determine why you are sleepy.

Figure 3: STOP-Bang questionnaire[3]

Yes ○	No ○	**Snoring?** Do you **Snore Loudly** (loud enough to be heard through closed doors or your bed-partner elbows you for snoring at night)?
Yes ○	No ○	**Tired?** Do you often feel **Tired, Fatigued, or Sleepy** during the daytime (such as falling asleep during driving or talking to someone)?
Yes ○	No ○	**Observed?** Has anyone **Observed** you **Stop Breathing** or **Choking/Gasping** during your sleep?
Yes ○	No ○	**Pressure?** Do you have or are being treated for **High Blood Pressure**?
Yes ○	No ○	**Body Mass Index more than 35 kg/m^2?**
Yes ○	No ○	**Age older than 50 years old?**
Yes ○	No ○	**Neck size large? (measured around Adam's apple)** For male, is your shirt collar 17 inches/43 cm or larger? For female, is your shirt collar 16 inches/41 cm or larger?
Yes ○	No ○	**Gender = Male?**
Scoring criteria:		
Low risk of OSA: Yes to 0 to 2 questions		
Intermediate risk of OSA: Yes to 3 to 4 questions		
High risk of OSA: Yes to 5 to 8 questions		

OSA: obstructive sleep apnea

1. *The modified Mallampati classification for difficult laryngoscopy and intubation*. UpToDate. (n.d.). Retrieved January 20, 2023, from https://www.uptodate.com/contents/image?imageKey=EM%2F75229

2. Centers for Disease Control and Prevention. (2020, April 1). *Epworth Sleepiness Scale*. Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/niosh/emres/longhourstraining/scale.html

3. *STOP-Bang questionnaire*. UpToDate. (n.d.). Retrieved January 24, 2023, from https://www.uptodate.com/contents/image?imageKey=NEURO%2F87572

The Coronavirus Years from the Board's Perspective

Lynn Jennings Taylor, RN, JD

I have had the distinct honor as well as the dubious distinction of being the Chair of the Board of Directors of Volunteers in Medicine Clinic (VIM Clinic) of Hilton Head Island during the coronavirus years, 2020-2022. In our lifetime, there has never been such a tumultuous or more frightening period of time in healthcare.

We have all experienced a blurring of time during this period, so I am most grateful to members of the VIM Clinic management team for their help with the timeline found herein. Thank you, Nena Balzola, Dottie Byers, Susan Jones and Dr. Ray Cox, who also had the impeccable timing to tender his one-year retirement notice on July 1, 2020. What a year it was!

On March 4, 2020, I had the pleasure of attending the annual meeting of clinicians as we were just learning of the spread of the novel coronavirus, later COVID-19. Sitting in that conference room, no one could imagine how the world would change forever. Nine days later, a state of emergency was declared in our country and state. All essential services were shuttered, and people were advised to stay home except to obtain groceries or medical care.

The difficult decision was made on March 20, 2020 to close VIM Clinic. Little did we know then, but that closure would continue until June 1, 2020. However, just because we were closed for regular visits, did not mean all was quiet.

During our first of many Zoom board meetings in April, we approved the 2021 operating and capital budgets, now greatly impacted by the pandemic. To take advantage of this downtime, we approved a major capital improvement project. This included a new roof, parking lot regrading and paving, clinic triage reconfiguration, new flooring, lighting, painting, relocation of medical records and pharmacy and a conversion to a new electronic medical record system from Athena. Board members Dave Ekdahl and Mary Ellen McConnell generously donated funds for half of the cost of these improvements.

Our dedicated staff quickly realized that our patients needed a way to continue to receive their medications and developed processes to allow this to happen. A small group including Julie Copp,

then Chief Nursing Officer, her staff, and volunteers Brian Fatzinger, Dr. Sunderlin, Dr. Nagel, Dr. Oley, and Dr. Siegelbaum bagged prescriptions and delivered them outside to anxious patients.

Emergency dental work was coordinated through Lisa Beddie, then Dental Clinic Coordinator, and volunteer Dr. Lindsey.

We applied for and received Paycheck Protection Program of $255,000, so VIM Clinic staff remained on payroll. Kudos to Susan Jones for making that happen.

Supply chain issues were becoming apparent, but our architect/GM, Angela O'Dowd was tenacious and kept us marching forward.

Via Zoom, we interviewed potential replacements for Julie Copp, who retired after dedicating 17 years of her life to VIM Clinic. We were most fortunate to engage Jennifer Gatlin, who made a potentially difficult transition, under the most trying circumstances seamless joining VIM Clinic in July 2020.

Reopening was gradual as many clinical and lay volunteers were understandably reluctant to return in the absence of vaccines or even standard treatment protocols. Tents were set up to take temperatures and conduct COVID-19 assessments.

In spite of the odds, Demetra Ladson launched our new EMR as scheduled on July 1, 2020 and led what became a textbook transition to the new platform.

Thanks to great work by Ginger Moran in Development. We sought and obtained numerous grants for personal protective equipment and deep cleaning. Eight of these grants were guided to us through the Community Foundation of the Lowcountry, which helped our efforts to treat our patients.

As soon as Dr. Cox notified the Board of his intention to retire, we immediately began the difficult work of trying to find a worthy successor under challenging conditions. All search firm and candidate interviews were conducted via Zoom. Sadly, we were becoming adept at not being in the same room and reading expressions behind the ubiquitous face masks.

Tragically, our beloved Director of Volunteers, Stan Stolarcyk took ill on November 10, 2020 due to

COVID-19. In order to limit any exposure within the clinic, we decided to close through Thanksgiving and cleaned and fogged the entire area. While hospitalized, Stan succumbed to the dreaded virus on December 9 2020, just weeks before news that Pfizer had developed and was prepared to release a vaccine by the end of the year. We miss his energy at the Clinic enormously.

Hope sprung eternal as we waited for the arrival of the vaccine. Hilton Head Hospital was enormously helpful in providing early vaccine administration to our clinicians and volunteers in January. We are eternally grateful for this collegiality. Thanks to them and to the Medical University of South Carolina, we were able to commence patient vaccinations in March 2021. Huge thanks to Jennifer Gatlin, Cherie Hellman and Lu Pa in Nursing for their well-orchestrated inoculation program.

Dr. John Newman was the clear choice to take the helm, by both the Board and senior management with a start date of July 1, 2021. The Board was proud, in spite of all of the challenges, to meet Dr. Cox's request for this retirement date. During a lull in the pandemic, we were able to fete Dr. Cox as he so richly deserved.

We soon learned the virus's ability to mutate meant most clinical precautions remained in place.

The work of the Board continued throughout, with generous support going to our virtual galas in both 2020 and 2021. We all learned to pivot and find new ways to connect. We added new board members and bid adieu to retiring ones. We rejoiced in Dr. Newman's arrival and eventually provided "seed" money for his hydroponic "Farm-acy" to help meet the nutritional needs of our patients. We fully supported the clinical decision to require vaccines for all of our staff and volunteers.

Throughout this trying journey, we have observed incredible devotion on the part of our management, clinical and lay volunteer staffs. Steadfastly following the most up-to-the-minute scientific evidence, we have weathered this terrible and seemingly endless storm together. Our little all-volunteer clinic has bent but never broken. I know our founder, Dr. Jack McConnell would be ever so proud of the teamwork and dedication that has allowed us not only to survive but to improve and thrive during these unprecedented times. May we never see a repeat in our lifetime.

VIM Clinic Nursing Update

Jennifer Gatlin, RN, BSN, MHA

To quote our friend Stan Stolarcyk, it has been another “fun filled, action packed” year in the Nursing Department! During 2022, we were thankful to see a return to “almost” normal clinic operations and experienced patient volumes higher than pre-pandemic levels. We were very fortunate during the year to introduce many new pieces of technology into the workflow including the automation of vital signs, blood sugar, A1C results and EKG readings directly into our Athena EMR. New vital sign machines, blood sugar monitors and EKG and Holter monitoring systems were implemented throughout the clinic. This has produced more consistent results and improved the patient flow.

To further improve the efficiency of our patient flow, we implemented a “fast track” system for most specialty care visits such as podiatry, orthopedics, dermatology, ophthalmology, GI and urology. This allows our patients to have faster access to the physicians by bypassing the patient intake and waiting rooms. This has allowed our physicians easier access to follow up appointments and improved our waiting times for patient visits.

Our diabetes program implemented a new continuous blood sugar monitoring program by Abbott. The Libreview 2 system involves applying a sensor to the patient which continuously reads blood sugar levels every 6 minutes for a period of 14 days. The patient can use either their cell phone or a special reading device provided with the system to measure their blood sugar at any time. In addition, the sensor provides alerts and alarms 24 hours a day to notify patients of any dangerously low or high blood sugar levels. The data from the sensors is downloaded into Athena providing the physician access to very detailed information on every blood sugar reading as well as daily summaries of their average daily sugar and A1C levels. It has provided our doctors with more tools to effectively manage medications and adjust treatments for better glycemic control. It also provides our patients with the safety of continuous blood sugar monitoring and immediate feedback on their blood sugar levels at any time.

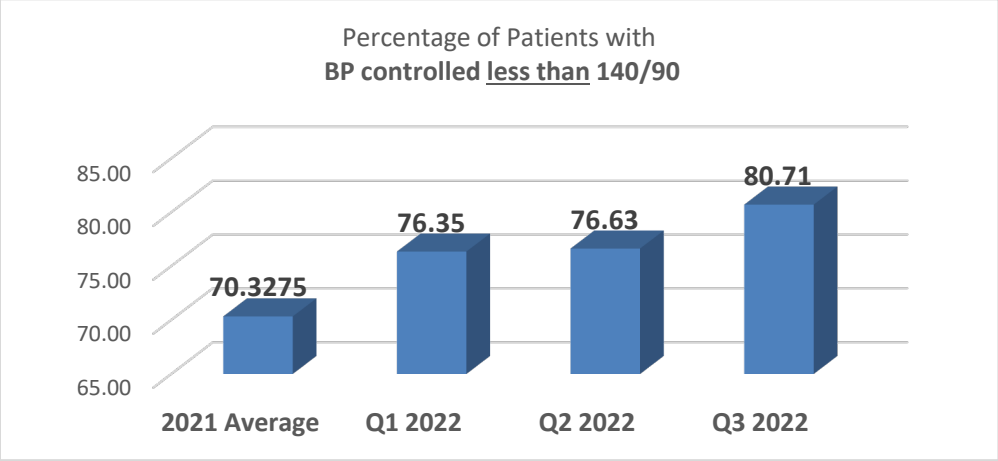
Unfortunately during the year, we continued to see several surges in our community of COVID-19 and now influenza. The clinic eagerly participated in the CDC’s vaccine program for all phases of the COVID-19 vaccine rollout. We continue to provide daily COVID-19 vaccinations for our patients for the primary COVID-19 vaccine series as well as the newest bivalent COVID-19 booster. Our patients

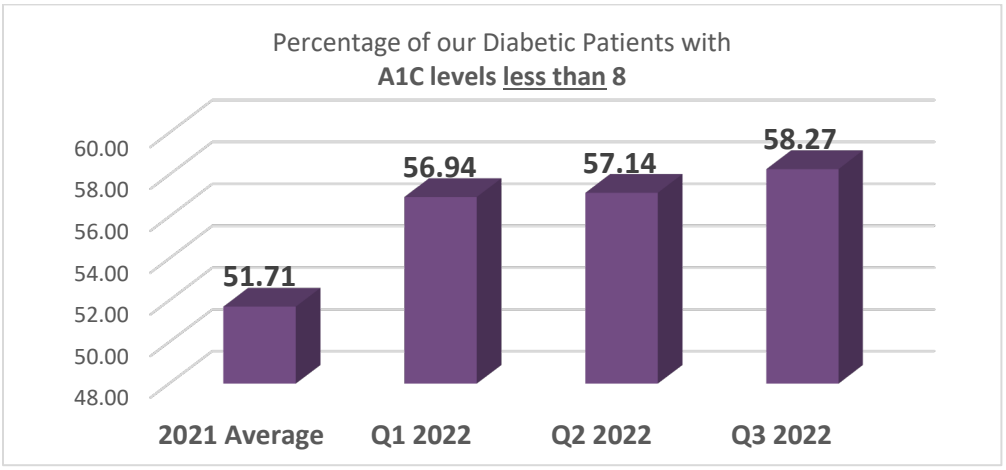
also have access to free flu vaccines at VIM Clinic made possible by several community grant awards as well as our partnership with DHEC.

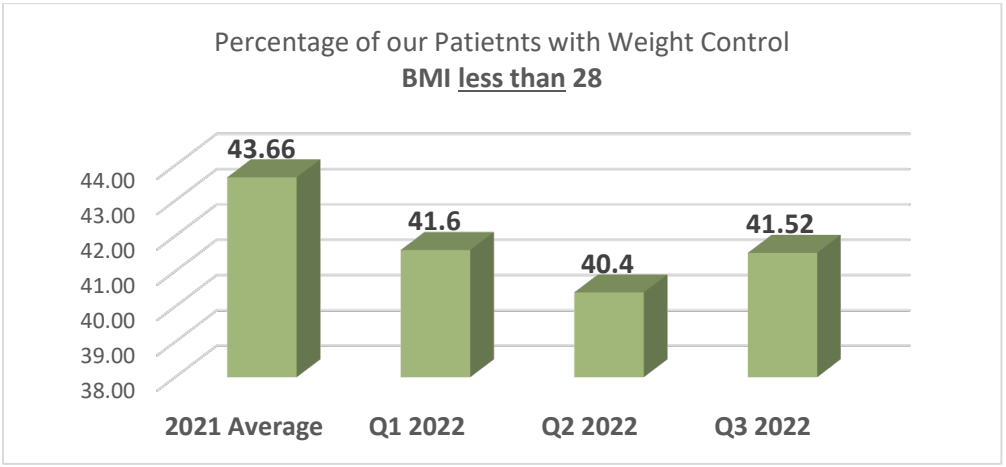
One of the benefits to our July 2020 conversion into the Athena EMR has been the collection of quality data metrics from our daily patient visits. The metrics highlighted here relate to those measures outlined by our Board of Directors in the VIM Clinic Strategic Plan. Those measures include:

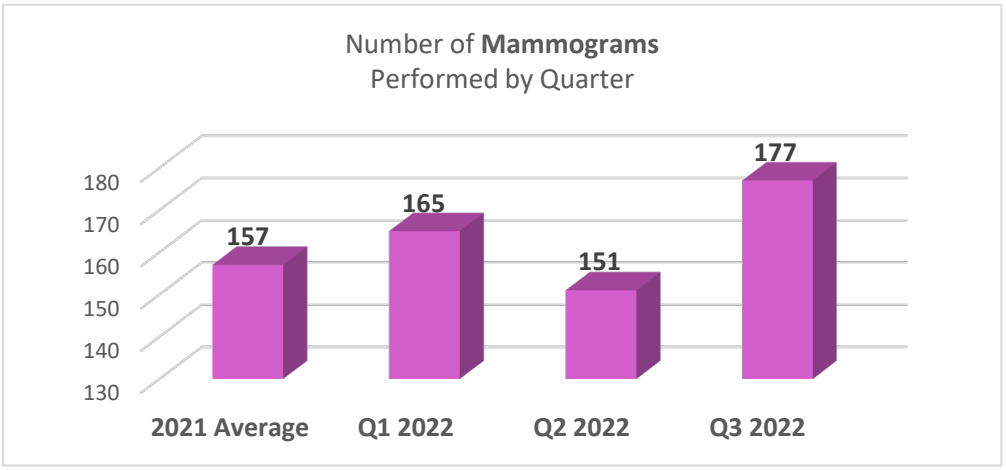
- Blood Pressure Controlled below 140/90
- Diabetic A1C levels controlled below 8
- BMI scores below 28
- Colon Cancer Screenings (FIT Tests Performed)
- Breast Cancer Screenings (Mammograms Performed)

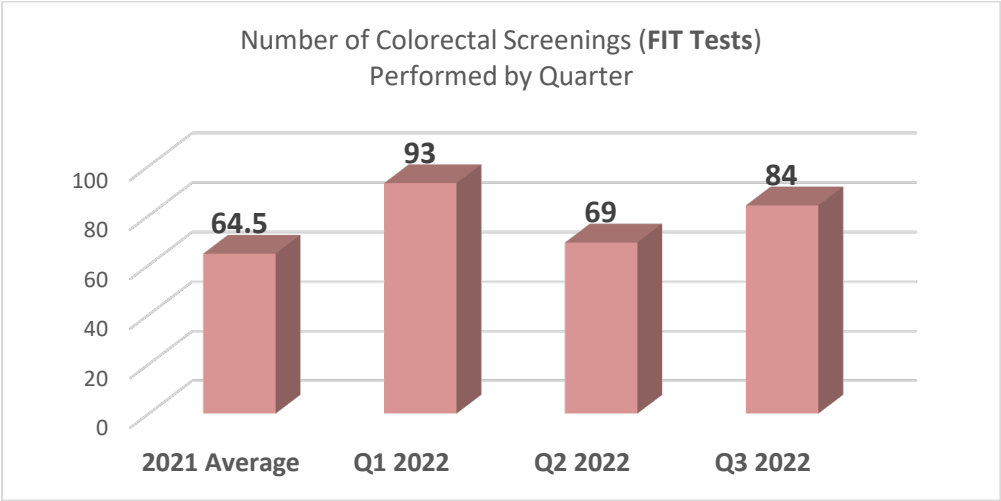
Of particular note are the outstanding results in our blood pressure control below 140/90 (80.71% in the 3rd quarter of 2022) as well as steady improvement in our A1C control below eight (58.27%). We are thankful to all of our amazing physicians and volunteers who continue to provide such amazing compassionate care to our patients. We look forward to 2023 and continuing the work and mission of VIM Clinic.




Percentage of our Diabetic Patients with
A1C levels less than 8
60.00
58.00
56.00
54.00
52.00
50.00
48.00
51.71
56.94
57.14
58.27
2021 Average
Q1 2022
Q2 2022
Q3 2022


Percentage of our Patietnts with Weight Control
BMI less than 28
44.00
43.00
42.00
41.00
40.00
39.00
38.00
43.66
41.6
40.4
41.52
2021 Average
Q1 2022
Q2 2022
Q3 2022


Number of Mammograms
Performed by Quarter
180
170
160
150
140
130
157
165
151
177
2021 Average
Q1 2022
Q2 2022
Q3 2022


Number of Colorectal Screenings (FIT Tests) Performed by Quarter
100
80
60
40
20
0
64.5
93
69
84
2021 Average
Q1 2022
Q2 2022
Q3 2022

VIM Clinic Pharmacy Update

R. Keith Goss, RPh

It has been my pleasure to serve as the Director of Pharmacy for about 18 months, since July 2021. The opportunity to work with such an excellent group of staff and volunteers, both lay and clinical, has been inspiring. Working with medical, nursing and pharmacy school students reassures my faith in the future of healthcare.

One of the primary tasks assigned to me was the implementation of a computerized pharmacy management program. I am proud to report the QS/1 pharmacy system has been fully implemented with much success. The system as of October 2022 is capturing almost 100% of prescriptions dispensed by the clinic prescribers. The vast majority of those prescriptions are being prescribed electronically from the electronic medical record, Athena to QS/1 using a variety of processes. Some prescribers are fully utilizing the capabilities of the pharmacy system, some prescribers are using a hybrid system, while others are relying on clinic staff to assist with the documentation process. Several of the prescribers fully utilizing the pharmacy system are especially happy with the ability to provide Spanish language labels, warnings and drug information sheets. Another major advantage of utilizing the pharmacy system is the ability to allow for patient refills for maintenance medications which drastically expedites the refill process of medications for your patients between appointments.

Another major task under my responsibilities was the management of the Direct Relief Bulk Replenishment Program. This program gives our patients access to high quality, brand name medications that for the some had never been available before. Implementation of this program began in December 2021 with some medications and others added throughout 2022. As of the end of November 2022 the program has provided over $1.8 million of medications at no direct cost to the clinic or the patients! A few of the highest utilized medications under this program that were previously unavailable are Invokana, Invokamet and Trulicity. These medications for our diabetic patients are the latest cutting edge and have much improved the treatment of diabetes with an expected improvement in A1C results. The program requires extensive record keeping, none of which would be available without the use of a pharmacy management system.

I look forward to continuing to assist with the role the pharmacy plays in the mission to serve the healthcare needs of the underserved of Hilton Head and Daufuskie Islands.

Dentures

Ed Atkins, DDS

Since March 2021, I have been working exclusively with our denture patients. We make full and partial removable prosthetics. The process generally takes four appointments, and since I am only at the clinic one day per week, it takes us about two months to complete a case.

The first visit is for a preliminary alginate impression, and the stone model is sent to the lab in order to construct a custom tray and wax bite rims. The second appointment is for the final impression and to establish proper vertical dimension and smile line with the wax bite rims. The third visit is in order to have a try in so we can check the vertical dimension and bite relationship. The prosthetic teeth are set in wax, so we can change anything we need so we have good occlusion, good freeway space and a pleasing smile. When the patient is satisfied the try in is sent back to the lab for final processing. The fourth visit is for delivery of the appliance. The occlusion, freeway space and appearance is checked.

The most rewarding aspect of making a denture is the wonderful expressions that the patients have when first seeing there smile. Just recently, one of our patients told us that it was the best birthday present she had ever received.

I am sure that these prosthetics help to improve the patient's self-esteem and hopefully can be an asset for achieving all their goals.

I have been at VIM Clinic since 2010 and have seen us move from 3 small operatories in the main building to a much larger and very nice clinic in the dental building. This has enabled us to better serve our patients. I know through my experiences that we have not only given these patients better oral health, but, also kept many of these patients out of the emergency rooms of our community. We see many patients who have never received basic denial care but, we also see many elderly patients who can no longer afford these basic dental services. We try to treat as many patients as possible, however, as I came to realize on my first trip to Central America, we can't treat everyone. Our goal is one drop at a time. It ls a true joy to work with all the caring people at VIM Clinic and a blessing to see the smiles on our most appreciative patients.

VIM Clinic Dental Update

Rob Lindsey, DDS

Shortly after Volunteers in Medicine Clinic opened as a free medical clinic, two dental treatment rooms were made available to provide dental services. Over the next 10+ years with the growing patient base, additional space was added for dentistry, still in the medical building.

With space growing to 5 treatment rooms, a quickly growing number of patients, additional volunteer dentists, the addition of dental hygienists, and the medical side needing more exam rooms, the dental clinic moved to its present location in 2009. There are now eight treatment rooms, a state-of-the-art sterilization room, comfortable reception area, laboratory space and an office for the coordinator. Digital x-ray equipment and digital record keeping were also added when the new clinic opened.

The VIM Clinic dental patient base has continued to grow quickly as there are no other local treatment options for our patient population. There are local dental providers who treat patients covered under Medicaid, but Medicare does not provide any dental coverage leaving that group without treatment options.

We provide emergency services for 40-50 patients each month. Most of those have not had regular dental care available and we encourage them to return for a complete examination, including oral cancer exam, thorough dental exam including dental x-rays. A dental cleaning is also provided, including education in personal dental care. Additional appointments are scheduled at this for indicated treatment.

All of the VIM Clinic dentists are volunteers licensed to practice in South Carolina. We also have a small paid staff of part time Dental Hygienists, Dental Assistants and a clinic coordinator plus some volunteers at the front desk.

Dental services provided include extractions, dental restorations to remove decay and restore function, endodontic therapy (root canals), plus full and partial removable dentures.
Many of our patients work with the public where having a pleasant smile is an important trait. In some cases, simply repairing a chipped tooth is the only need while others may require the replacement of multiple front teeth. Restoring self-confidence is always a desirable outcome.

Our goal is to address dental discomfort and infection, remove dental caries, restore appropriate dental function, and replace missing teeth where indicated.

Quality Improvement Committee

David Nagel, MD

Members of this committee are Jennifer Gatlin, Barbara Conway, Ingrid Boatright, Marissa Wadsworth, Kelly Bouthillet, Lynn Jennings Taylor, Keith Goss, Drs. Newman, Gretchen Oley, Kloesz, Kolb, Flannery and Nagel. We have been meeting monthly since October of 2021, working to define what constitutes quality of care at Volunteers in Medicine Clinic, how to measure it, and how it can be improved upon.

The adoption of the Athena EMR a little over two years ago, has enabled us to more easily study a variety of "Key Performance Indicators" which can be compared to those of other outpatient clinics. A1C less than 8, BP less than 140/90, BMI less than 30, and number of eligible patients receiving mammography and FIT testing, constitute our current study KPIs. VIM Clinic compares favorably with national averages in all of these areas.

One early project was to develop guidelines for the use of methotrexate, a medication that can have significant toxicity and requires lab testing before prescribing and periodic testing while receiving it. In addition, because of the risk of birth defects, pregnancy must be avoided. Dr. Gretchen Oley in consultation with Dr. Duane Davis crafted guidelines for patients receiving methotrexate as well as a consent form for patients starting this medication. These will be used for all patients prescribed methotrexate in the future.

The committee has adopted a list of parameters to be monitored for "chart checks." Jennifer Gatlin has been performing this on twenty charts pulled at random on a monthly basis. These done for nursing intake chart audits include: vital signs, allergies, reason for visit, and medicine reconciliation, and VIM Clinic social history. All parameters but medicine reconciliation routinely score over 90%. The latter started out in the 70-80% range, now improved to 85% after users have gained familiarity with the EMR. In order to audit provider input, the plan of care and the reason for visit expressed in the HPI have been added to the other parameters. More will be added for future audits.

Keith Goss has been a valued addition both to VIM Clinic and the QI Committee. He has brought a variety of changes to our pharmacy, but one that stands out from a quality perspective, is how patients can now receive medication instructions and information in their native language when the provider

enters the prescription through the EMR. It also allows for refills to be entered thus reducing appointments solely for refills.

Patient satisfaction is another measure of quality, and in that vein, we have examined the results of several patient surveys administered under the direction of Dottie Byers. These surveys asked the question, “What can we do better?” The majority of patients offered only praise, but there were two requests that appeared most commonly: appointments could be closer to the scheduled time; and communication with VIM Clinic could be made easier. Improvements in the telephone message have been made to improve communication, which was a particular burden for Spanish-speaking patients. We are working on ways to increase use of the patient portal.

Making appointment times more accurate is a shared goal of the providers and the patients, and has defied easy solutions, but efforts continue. “Fast tracking” patients to certain providers has helped during certain days. Marissa Wadsworth’s job has expanded to include “patient flow” so she is now located in the patient waiting area during clinic hours. The EMR will enable us to track patients from front door to provider, so this offers an opportunity to discover where there are problems that can be addressed.

Recent meetings have been devoted to improving use of the EMR in preparation of retiring use of the paper charts in early 2023. Those providers who have preferred to use paper charts will still be able to do so. Ingrid Boatright and Dr. Gretchen Oley have led the effort helping us to find ways to better utilize the available functions of Athena net. Education sessions will be offered to all users of the EMR before retiring use of paper charts, and dry runs will take place before implementation.

The QI committee welcomes anyone working or volunteering at VIM Clinic who may want to join us. Contact Marissa Wadsworth, physician scheduler if interested.

Thank Heavens for our "Non-Compliant" Patients!

John Newman, MD, FACS

On the occasion when clinicians chat, they discuss amazing stories of their Patients, challenging diagnostic and therapeutic dilemmas and yes, they occasionally discuss their Non-Compliant patients. We have all at some time wished we could relieve ourselves of the obligation to these patients. Recently, I have been thinking about how much they have taught me over the years. I would like to regale you of a few stories that I hope to inspire you of the absolute importance these patient have in our Medical practice. I hope these stories trigger your own memories that you might forward to me at jnewman@vimclinic.org to share with next year's VIM Journal.

Last week I read the news of a successful collaboration between Merck and Moderna and it caused me to remember Robert (1990's) who some might think of as a Non-Compliant patient.

Robert was sent to me to evaluate a mole he had developed over the previous year, which had changed colors and was not only increasing in size it was constantly irritated. We performed a small punch biopsy on a corner of the mole and sent it off to pathology. The following week I had the conversation with Robert that it proved to be a Malignant Melanoma and we discussed his surgical options. During this discussion, I presented a sense of urgency in the timing. He was all in for surgically removing the mole and sampling the lymph nodes, but he could not agree on the timing. He and his wife had planned a rather elaborate trip that he was determined to go on. I sincerely tried to convince him that waiting 6-8 weeks to remove this malignancy was a potentially bad idea. He was not changing his trip.

When he returned 8 weeks later, the punch biopsy site had healed nicely but the rest of the mole gradually disappeared as well. There had been a few descriptions of this happening in the literature. It was being postulated, that the injury of the biopsy might trigger the T cell component of our immune system to also recognize and perhaps address the malignancy. These events began a several decade journey into how we might be able ask the immune system to help in our battle with many malignancies (and respectfully ask it not to attack our normal cells).

Flash forward to today when the use of immune modulators are common in our oncologic treatment

plans. For Example, Merck has a drug "Keytruda" which inhibits PD 1, which cancer cells can use to evade our T cells. This essentially brings these cancer cells out of the darkness but it does not quite put the spotlight on them. What if we could tag these cancer cells with an antibody as well?

Next steps in Moderna who for the past 3 years has spent 24 hours a day, 7 days a week trying to generate a mRNA vaccine to a rapidly changing COVID-19 virus. Moderna is now applying this same technology to individual cancer cells and creating a vaccine for the isolated "Cancer" proteins expressed on a unique patient's recently biopsied cancer. Now those cancer cells have not only been pulled out of hiding, they have been labelled with antibodies that our immune T cells can more easily target.

I was thinking about Robert last week when we learned that when you combine the immunotherapy of Keytruda with mRNA vaccine technology it appears they can reduce the chance of dying from melanoma by 44% and are proceeding with a definitive phase 3 trial.

All of this science began as we observed our non-compliant patients delaying surgical resection and allowed their immune systems to suggest to us what might be possible.

Rose is another "Non –Compliant" patient of mine who at the age of 32 was diagnosed with a triple negative breast cancer that had already spread to her lymph nodes. She was a tough cookie and I had to plead with her to take chemotherapy. (Adriamycin / Cytoxan) I truly believe she started it as a favor to me, but after one dose, she said "No Way" "No More." No matter how much I genuinely pleaded with her, she was done. Like take the mediport out in the office – Done. No doubt, that first dose was a big kick and while the treatment regimens of the time had just decreased the duration of chemo to 6 months, I did not feel as if one round was going to do what we needed.

Her axillary lymph nodes shrunk to normal pretty quickly. She still seemed to enjoy my company and came back in for frequent checkups. At first it was monthly and then quarterly and then yearly. Every time she would come in, she would have this wry grin of "I told you so" as we never demonstrated any persistent cancer and at 7 years she was still cancer free when she moved out of state. From then on, all I got were Christmas cards but I knew she was still grinning.

It is through the non-compliance of patients like Rose that we learn to think about how little we need

to give as opposed to how much we can give.

TJ was a patient who we were struggling mightily to control his BP. After at least 6 months of frequent visits to primary care and cardiology, he had just gotten placed on his 5th medication. We had performed all of the renal scans, functional adrenal workups, everything, but his BP was still 170/100. One day we were talking and he could see that I was visibly upset and I confided in him that I had real concerns that one day soon he could have a real problem that might have been preventable if only I could figure out a regimen to control his BP.

Perhaps it was his empathy for me at that minute when he commented, "Doc, I feel fine, and you shouldn't feel bad about the medicines because to be honest, I only take maybe 1 pill a month." I sat quietly in disbelief controlling my frustration. We actually sat there in silence for several minutes. In those minutes, I realized the solution was not medication. The solution was only going to be found when we figured out how to make the simple act of taking his medication important to him. The threat of heart disease, stroke, and kidney failure just did not seem to be making an impact. What did bother him was the dementia he saw in his grandmother and dad.

I showed him all the evidence regarding decreasing dementia with good BP control, and threw the final cherry on top regarding reducing the incidence of erectile dysfunction. OK, I might have exaggerated those benefits but remember I was still a little ticked off. We left that meeting back down to one medicine instead of five and a 3-week follow up.

I still have concerns that he will not be compliant but failure will not be a medication failure – it will be a motivation failure. This Non-compliant patient has taught me the importance of asking the obvious question of "Are you actually taking…" Perhaps more importantly he taught me the need to keep asking if treating this problem is important to them and assessing if that importance is enough to maintain the behavior of taking a medication on a regular basis. Sometimes, I am realizing our patients take their meds just to keep us as friends. And you know what – That is OK!!!

Lucas is a patient I met when I took over the Thoracic Surgery service as a resident. He had been in a bad motor vehicle accident and had a hemo-pneumothorax, multiple broken ribs and eventually got an empyema and a persistent Broncho pleural fistula which leaked air (in and out) from his lung out the chest wall. We used to see these a lot during the days of TB and Dr. Eloesser created a surgery

where you take a piece of skin, rib, thoracic muscle and flap it over to fill the void and patch the leak. I was excited to get the opportunity to do this surgery.

We booked it, but TJ who seemed excited to have this fixed was a No- Show. He had a rather lame excuse and I pushed to get it booked again. Again, TJ was a No-Show. By now, my attending was going to write him off but I called TJ in for a Heart to Heart. I even offered to find him transportation. TJ was very apologetic and said he just could not afford to do this surgery at this time. Since he did not work and was getting free care, I made the case that it would not be a financial hardship and this was the best time to repair the fistula. He looked at me and explained the he could not afford to lose the revenue once this problem was fixed.

Apparently, TJ could actually breathe a little bit through this hole in his chest and would go into the local bars and wager the big betters that he could hold his head in a bucket of water for 5 minutes. He was able to extend his breath holding with this small hole in his chest and was clearing several grand a month with this gig. He asked me to keep his secret but having the surgery would make this particular skill impossible to perform.

I am not sure if TJ ever got the fistula fixed but he reiterated what every MBA program teaches. Cash flow is paramount to survival.

My final patient is Elsie who was 85 and I met her urgently with a large bowel obstruction from a sigmoid cancer. We resected her cancer and she did amazingly well and went home on post op day #4. I was called to the ED two days later as she came in with what seemed like a pulmonary embolus in full arrest. They got her back only to lose her again. I joined the team with CPR and after almost 45 minutes of chest compressions, we called the code and everyone left the room. Since I knew the family, I went out tell the family what I thought had occurred and that she had died. They knew me well by then and felt I truly had Elsie's best interest in heart. What went from a great save turned out to be a great loss. I went back into her room and held her hand to say goodbye as they were going to get her ready for a family visit when her heart monitor picked up activity and low and behold a pulse. We turned the vent back on and embarrassingly I had to go tell her family that she was not dead but painted a gloomy picture of neurologic recovery. Again, she proved me wrong and was extubated the next day with no neuro deficits. She had a sore chest but no neuro deficits and her colon worked great.

While I can't say that Elsie was Non-compliant by refusing to stay dead, she did teach me that there are things I will never be able to explain with scientific rational thought and that is a perfect place to stay uncomfortable and be thankful for God.

Thank Heavens for these Non-compliant patients to teach us that

1) there are so many more mysteries to uncover with our human body,
2) Sometimes less is more
3) Cash flow is King
4) When we reach the limits of rational thought, it is OK to have something else to have faith in.

I hope you will agree how much our Non-compliant patients can teach us and please send me stories of your patients that have personally contributed to your grey hair and awesome wisdom.

The Electronic Medical Record: First, Do No Harm

Ingrid Boatright, LETTERS

First, Do No Harm. This phrase is not actually from the Hippocratic Oath, although its spirit runs throughout. It comes from a different writing of Hippocrates, Of the Epidemics, where he says a core principle of medical ethics is "Practice two things in your dealings with disease: either help or do not harm the patient". Too bad computer programs don't follow these same principles.

In his article, "Why Doctors Hate Their Computers" (The New Yorker, November 2018), thoracic surgeon Atul Gawande, documented his own experiences when his hospital upgraded to the Epic EMR. Over a billion dollars and 27,000 technology help desk tickets later, he comes to the conclusion that computers aren't great with human interaction; but also… that we can't manage without them. He wrote, "The volume of knowledge and capability increases faster than any individual can manage—and faster than our technologies can make manageable for us. We ultimately need systems that make the right care simpler for both patients and professionals, not more complicated. And they must do so in ways that strengthen our human connections, instead of weakening them." Sounds a lot like Hippocrates.

So how can Volunteers in Medicine make this transition to a chartless clinic without harming the patient or impacting VIM Clinic's successful delivery-of-care model? And more importantly, why are we doing it?

As for the how, the first thing everyone should know is that no one will be forced to use the computer. There are workarounds and options for any provider who hates the computer. The donation of your time is a gift and VIM Clinic will gratefully receive it however you choose to give it. For those who are already comfortable with the computer, or at least willing to try, the how has been thoughtfully planned out; we are taking it slow and there will be lots of support and training available.

The why is more critical. The move away from paper charts should help us be more efficient, with better follow up and improved communication. But what really makes this process important for VIM Clinic is the need to have one source of truth for the patient record where data can be collected. Data collection has a bad reputation because it has historically been used against patients and providers to deny services or create liability. Data collection's purpose, however, is to answer questions. This is the

true value of using an EMR.

We can use this data to tell VIM Clinic's story to the community, to supporters, and on grant applications. Questions such as who are our patients, where are they, what are their needs and how are we meeting them? What is the value of VIM Clinic to our community? Are we reaching those who need us the most? Being able to pose these questions and find compelling answers will help us expand our impact and generate increased community support.

In other words, if we achieve the goals of this transition, we will strengthen our human connections, not weaken them. We will help, not harm.

Coping with Hospital Medical Practice Today

Patrick Snowman, MD, FAAEM

This summer Dr. Siegelbaum asked me to write an article for the VIM Journal. He said, “I’m fascinated with what hospital medicine is like these days. What can you tell us about that?”

I am here to report that today, hospital based medical practice is as rewarding and challenging as ever but for different reasons. Here’s why:

In last year’s VIM journal, I told the story of how medical care on HHI was transformed in 1993 - 1994: VIM was created, Hilton Head Hospital was “saved” by Tenet healthcare’s acquisition, and two separate fire companies and an ambulance service merged to become what is now HHIFR, a state-of-the-art fire and EMS service that boasts one of the highest out of hospital cardiac arrest survival rates in the nation.

This a fascinating story that leads naturally to the following questions: Where does healthcare on HHI stand nearly 30 years after the evolution of these three entities? Moreover, where do we stand today, on the heels of an extraordinarily painful and taxing pandemic?

I can only speak from my own domain of emergency medicine (EM). As a medical specialty, EM began in Cincinnati in 1970 and was quickly followed by a residency program started by David Wagner, a pediatric surgeon, at the Medical College of Pennsylvania (MCP) in Philadelphia. MCP is my medical school alma mater and by many strokes of fate and good luck, MCP is where I did my EM residency, under the tutelage of Dr. Wagner and many other pioneers in EM. Despite its 50-year legacy, I feel that EM (as a medical specialty) truly came into the public consciousness when COVID-19 thrust itself into every emergency department (ED) in the world. EM physicians became part of the media news cycle. While heart attacks, strokes, car crashes and gun violence have become numbingly routine, COVID-19 was “novel”, and we were right on the bleeding edge.

I know how I feel practicing EM every day. I could talk for hours about where we came from and where we are going. In fact, I have so many conflicting thoughts and feelings about the topic that I was flummoxed about how to approach this article.

Then, as if by divine intervention, I read Dr. Edwin Leap's article in November 2022 Emergency Medicine News (EMN). EMN is the most widely read tabloid in emergency medicine. It is not a peer reviewed medical journal. It is a collection of editorials, news items and regular columns, published by Walter's Kluwer for over 20 years.

Dr. Edwin Leap is a friend of mine. He has ties to the HHI and we met a few years back when he worked in our emergency department doing locum tenens work. Locum's doctors are a unique bunch who travel around plugging holes in the 24/7 schedule required of emergency medicine. Dr. Leap is unique because in addition to practicing within this special mode of locums, he is well known in the emergency medicine community. You see, in addition to practicing emergency medicine, he is an author and truth teller. He is perhaps best known by rank-and-file EM physicians through his monthly column in EMN also available in a collection called "Life in Emergistan". Dr. Leap's observations and insights are always compassionate and truthful. I often bring dog-eared copies of his column to my wife to read. Edwin has a way of communicating what we EM docs privately think and feel in a way that is hard to express out loud. He manages to curate these experiences in a way that is accessible to both clinicians and outsiders. It has been a privilege to know him, work beside him, and tell him face to face what an impact he has had on my psyche over the past 20 years.

When I asked him for permission to reprint his November article in the VIM Journal, he replied with a resounding yes and reported that he is continuing his "nomadic, migratory career of observation and reportage". May I present to you, Dr. Edwin Leap.

For EM Can Be Soul-Sucking, but What Eps Do Matters by Edwin Leap, MD –https://journals.lww.com/em-news/Fulltext/2022/11000/Life_in_Emergistan__EM_Can_Be_Soul_Sucking,_but.12.aspx