FREE CME IN THIS ISSUE: PREVENTION OF MEDICAL ERRORS

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The Journal of the Dade County Medical Association

VOLUME 92, No. 2 SPRING 2021

INSIDE THIS EDITION

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Improving Patient Safety by Reducing Medical Errors

By Linda Edwards, M.D. and Francys Calle Martin, Esq., L.H.R.M.

Multiple studies benchmarking the incidence of medical errors have led to efforts to improve patient safety, resulting in regulatory agencies and healthcare providers across the nation making the prevention and reduction of medical errors a priority. Providers should understand how regulatory agencies have shaped the patient safety movement, provided a structure for identifying causes of medical errors, and developed effective preventive strategies. Based on state and national reports of patient safety events and malpractice data, regulatory agencies have established patient safety goals for the prevention of medical errors.

Additional Scientific Articles

Features:

LEADING SOUTH FLORIDA IN UROLOGIC CARE

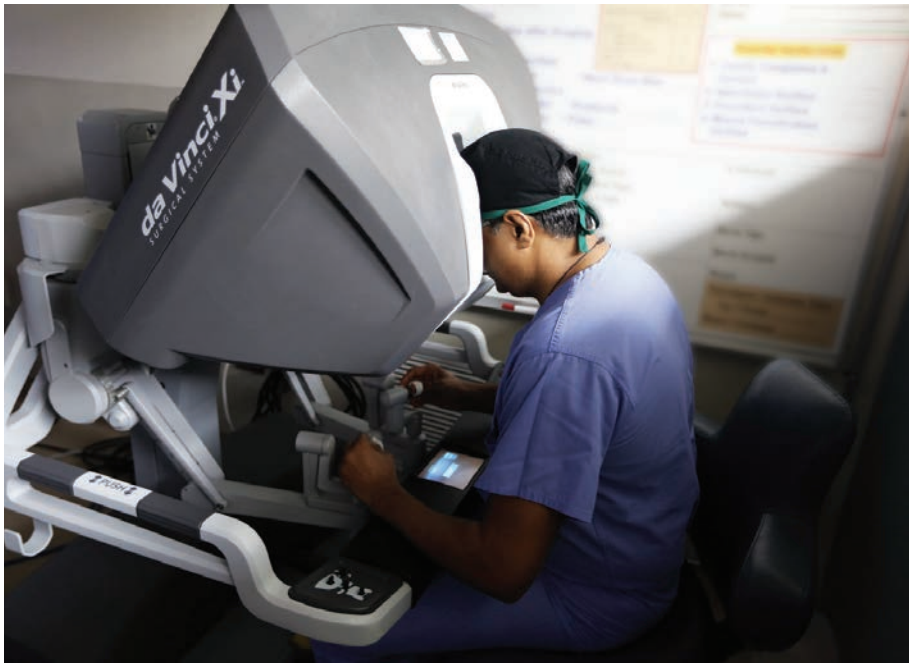
By: Diana Delgado

UHealth - University of Miami Health System urologists are setting a new standard in urologic services, using innovative technologies and advanced research to provide patients with outstanding care. A team of experts diagnoses, develops, and executes treatment options for a variety of urologic conditions for both women and men, including urologic disorders and incontinence, as well as pelvic health disorders in women; and prostate disease, infertility, and erectile dysfunction in men.

"Our diverse faculty of physicians, researchers, and scientists cover the entire breadth and depth of urology subspecialties," said Dipen J. Parekh, M.D., professor and chair of Urology, and chief operating officer at UHealth. "We are dedicated to exploring the latest discoveries in the laboratory and accelerate the most promising therapies into our clinics for the treatment of our patients."

As an academic medical system, UHealth experts perform groundbreaking research to develop new, effective procedures that improve the quality of life and improve the outcomes of those with urologic conditions. The physician-experts have the knowledge, experience, and resources to give patients comprehensive care and personalized attention — a level of care you cannot find anywhere else in the region.

UHealth's expert urology team has developed new minimally invasive and robotic surgical procedures to treat cancers, incontinence, as well as access to leading-edge treatments and clinical trials that are not widely available. Just this past year, UHealth launched the first U.S. clinical trial that looks at treating Peyronie's disease using platelet-rich plasma and is part of the only randomized clinical trial in the nation using platelet-rich plasma for men with erectile dysfunction. Added Dr. Parekh: "collaborative efforts with our NCI-designated Sylvester Comprehensive Cancer Center means our patients have access to the most advanced urological cancer care, cutting-edge clinical trials, and new investigational treatments."



Dipen J. Parekh, M.D., utilizing the da Vinci Xi® robotic surgery system.

Additionally, UHealth's urology team boasts some of the world's most experienced robotic surgeons for urologic procedures and has one of the highest volume robotic surgery programs among academic medical centers in the Southeast, ranking #1 in South Florida. UHealth was the first academic medical center in the world to obtain the da Vinci Xi® robotic surgery system and has completed more than 5,000 robotic surgeries — procedures that offer less pain and scarring and a faster recovery.

"We continue to examine the use of HIFU (high intensity focused ultrasound) in the treatment of prostate cancer and conducted the first U.S. study to show the safety and efficacy of focal HIFU that was published in the *Journal of Urology.* We are one of the first urology programs to gain experience with the newest innovations and technology such as the Xi robot, HIFU, blue light cysto, ORBEYE microsurgery robot, MRI fusion, and biomarker experience," said Dr. Parekh.

For more information, visit UMiamiHealth.org/Urology or call 305-243-6090 to refer a patient or schedule an appointment.

The Long Road to Recovery

Putting pen to paper on my final article for *Miami Medicine*, it is bittersweet as I reflect on a year of service as your President which has been disrupted by the COVID-19 pandemic. The past year has taught all of us important lessons about ourselves, our families, and our community. There are triumphant stories that each of us will hold dear in our hearts and proudly share with our kids and future generations. But there are also lessons learned and painful memories that will stick with us forever. Memories that will keep us second guessing about whether there was a better way or a different path that could have altered our fate.

Rudolph Moise, D.O., J.D., M.B.A.
DCMA President

As clinicians, that is the bond and duty we share: a responsibility to continue to ask and answer those questions that will advance medicine and improve quality of life. To find new cures, new techniques, and new technology that can change the course of disease and mankind. As your President, I am humbled to share that bond with so many physicians in our community who have persevered over the past year and shown resilience that many did not realize they had.

But amidst the progress and good news that continues to emerge on our recovery from the pandemic, steady hands and continuity in messaging is critically important if we are to avoid unraveling the significant strides we have made. The challenges to our recovery are many, and physicians will continue to play a critical role in the months ahead. Our voices are trusted throughout the community and therefore they must be loud and reassuring.

Our community is fully aware of the euphoria we should anticipate as an anxious public senses the opportunity to let down their guard and return to normalcy. Spring Break illustrated that message clearly. The past several weeks in Europe has also shown us that the disease is still virulent as they face a renewed period of lockdowns. It appears at this stage of the recovery we are attempting to thread the needle between restoring the freedom we all crave and a virus that refuses to go quietly.

While the current data is encouraging in Miami-Dade County, we are seeing some troubling signs ahead. Our County currently leads the state with the largest vaccinated population. But over the past few weeks, as availability of vaccine has significantly increased, the number of daily vaccinations administered has declined. We have heard stories from across the state that supply far outweighs demand. That is a stark contrast to just three months ago when our organization was scrambling to find vaccine for our physician members. This trend seems to indicate that the low-hanging fruit has been picked and the hard work of reassuring and encouraging hesitant populations is upon us.

Our DCMA leadership had the opportunity recently to meet with Dr. Peter Paige who was appointed Chief Medical Officer of Miami-Dade County by Mayor Daniella Levine Cava last November. During the call, Dr. Paige and our physician leaders discussed the need for physician and community leaders to collaborate on communications so the messaging is consistent and based in science. This is one of the first, if not the first, pandemics to be fought in the social media age which makes reassurance more challenging than ever before.

One common thread throughout all of the community conversations we have participated in related to vaccine hesitancy is that patients still overwhelmingly trust their physicians. It is with that charge in mind that I have been blessed to address countless organizations as DCMA President.

I was recently interviewed by Jesse Schecker from *Miami Today* on my background and the role of the DCMA in assisting our physicians and community during the pandemic. This opportunity highlighted the sense of pride I feel in leading the profession during these turbulent times.

I was also asked to present to the staff at Miami Children's Museum. The Museum opened the opportunity to their employees to speak with a local physician leader on the pandemic and vaccine development and safety. A total of 57 employees attended this interactive session asking a series of questions and sharing their concerns about the vaccine and our efforts to reach herd immunity. The Museum is just one of thousands of businesses in Miami-Dade whose leaders and employees are engaged in these same conversations.

As we continue to push all populations to get the vaccine, we remain focused on the needs of our members. The Dade County Medical Association and Duval County Medical Society Foundation recently received a joint $25,000 Community Impact Grant from New York Life that is allowing our organizations to continue providing essential protective equipment to those who care for the residents in our respective counties. The Community Impact Grant supports our Wear a Mask. Save Lives. Campaign and we're in the process of distributing approximately 7,500 KN95 masks to community physicians during a time when mask wearing remains vital.

It is my sincere hope that we will continue to see marked progress in the percentage of our local population receiving the vaccine. We certainly have a long road to travel to reach herd immunity and defeat this virus. While it was not a road I anticipated, nor one that I have particularly enjoyed, it is one that I am proud to have walked alongside my peers.

Your Dade County Medical Association is in great hands with the immediate incoming President, Dr. J.D. Suarez, and an army of enthusiastic young physician leaders behind him. It has been an honor to serve as your President and I am committed to continue the tough battle that still lies ahead.

Quality Designation – Spring 2021

By Antonio Mesa, D.O., Editor-in-Chief

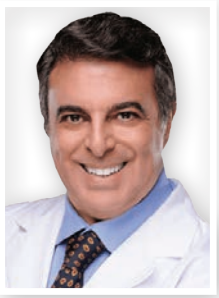
To help patients gain a better understanding of quality healthcare, the Quality Designation is awarded each quarter to local physicians who go above and beyond the call of duty. The honor is determined using criteria that other physicians who are directly involved in patient care consider useful. Physicians are reviewed on a variety of criteria including educational background, board certification or eligibility, leadership positions held, publications and lectures, honors and awards received, and community service. To see all physicians who have received the Quality Designation and/or to nominate a physician for consideration, visit miamimed.com/qualitydesignation.

For this issue, the DCMA is proud to announce two physicians who demonstrate a commitment to improving medicine and patient care in Miami-Dade County:

Beny Rub, M.D.

Beny Rub, M.D. is a board-certified pediatrician in South Florida for over 30 years at Rub Pediatrics MD PA, founded by his father, the late Dr. Moises Rub. He's a past president and current member of the DCMA and Political Action Committee. He also sits on the Board of Directors of the Health Professional Division at Nova Southeastern University and is a member of the Florida Medical Association. Dr. Rub is involved with many charity organizations in the Miami-Dade area, and is on the medical staff of Joe DiMaggio Children's Hospital, Aventura Hospital, Memorial West, North Shore Medical Center, Mount Sinai Medical Center, Mercy Hospital and Nicklaus Children's Hospital.

Jose David Suarez, M.D.



Jose David Suarez, M.D., is a Diplomate for the American Board of Family Medicine, currently serving as Chief Medical Officer and Designated Institutional Official of the Family Medicine Residency Program at Keralty Hospital Miami. Dr. Suarez has had a large focus on medical education over the past 20 years, beginning with Beth Israel Medical Center. He previously served as faculty at, Nova School of Medicine, Florida International University, and the University of Miami. He is a Delegate for the Florida Medical Association and DCMA president-elect. Dr. Suarez graduated from Universidad Central del Este and trained at Christiana Care in Delaware.

Joining the Miami Medicine Editorial Board:

Mariella Ortigosa-Goggins, M.D.

Mariella Ortigosa-Goggins, M.D. is an Associate Professor of Medicine at the University of Miami Miller School of Medicine and the Medical Director of the Kidney/Pancreas Transplant Program at the Miami Transplant Institute. She completed her medical education at Universidad Peruana Cayetano Heredia in Lima, Peru and her medical training at Henry Ford Hospital in Detroit, Michigan and Georgetown University in Washington, DC. She has been involved in medical education and has held many administrative positions since 1993. Her focus is clinical research with a special interest in the long-term follow-up of former kidney donors. Dr. Ortigosa-Goggins is the PI in the NIH study, APOL1 genotypes and long-term kidney transplant outcomes.

Too Big to Care?

Fraser Cobbe,
Executive Director

As the corporate takeover of medicine accelerates at pace, the health care debate in Florida is dominated by challenges to traditional patient safety measures and threats to physician-led personalized care for patients.

There was an interesting opinion piece in *The Guardian* in April 2018 by Adam Gaffney, a pulmonary and critical care physician and instructor at Harvard Medical School. At the time, Gaffney was reflecting on the recent flurry of potential merger activity involving CVS, Aetna, Humana, and Walmart. Clearly, a great deal has changed since 2018, but one thing that has remained consistent is the continued expansion of corporate America into health care delivery.

Gaffney quoted several studies that highlight performance concerns from corporate delivery of care as well as the expanded use of retail medicine. The studies he quoted include:

- A 2011 study in Health Services Research found that for-profit chains had 13% higher risk of mortality than not-for-profits.
- A 2014 study published on PLoS One by Herrera, et al., that found overall inferior outcomes at for-profit centers where there were gaps in the literature.
- A 2016 study in Health Affairs that showed retail clinics actually increased utilization and spending for patients on low-acuity conditions by 21%.

Gaffney went on to share a theory put forward by one of the authors of the Health Affairs story that corporate medicine is challenged with trying to achieve similar outcomes for patients with the same reimbursement for services, meanwhile dealing with the pressure to maintain profitability and higher executive salaries. The theory is that savings must be achieved somewhere which often translates to fewer resources available at the point of care.

As referenced earlier, the increased influence of corporate America is dominating health care debate in the Florida Legislature and translating into concern on the ground as physicians and patients deal with this reality. Over the past several years, corporate influence has been the driving force behind several legislative initiatives that were passed by the Legislature.

One example is the push to mandate electronic prescribing for all prescriptions with only a few exceptions where the tried and true written prescriptions are still allowed. Proponents of the bill championed the effort as a way to increase efficiency and safety. But underlying the effort was the ability of big box pharmacy chains to control that electronic prescription. The pharmacy chains knew that no cloud exists to capture electronic prescriptions for any pharmacy to access and dispense. Without that technology, once the patient tells the physician where to send the script, the pharmacy has total control of that prescription.

This is playing out in communities across the state as physicians express concern that patients are being negatively impacted. If pharmacies don't have the medication on the shelf, patients are turned away. Often pharmacists refuse to forward prescriptions to other pharmacies, even those within the same chain. There seems to be little enforcement or penalty on the pharmacist for not releasing that script. For some patients, like those needing post-surgical pain medications or anti-seizure medications, delays in access to medications can be painful if not dangerous. In the good old days, that patient would just take the written script to the next pharmacy and get the medication filled.

The drive for expanded scope of practice for non-physician practitioners is another example of where policy-makers are being influenced by the desire of corporate America to decrease care delivery costs to ensure profitability. While the proponents of these bills champion the need to lower health care costs, a need that everyone would agree is critical, there is seldom any guarantee of lowered premiums or data that actually illustrates decreased cost of care. Rather, there is often scientific literature that proves increased costs due to overutilization and worse outcomes for patients treated by lesser trained professionals. Those studies highlight a medical professional is more likely to order more tests or refer to a specialist unnecessarily when they have limited experience or gaps in training for ailments that diverge from the routine.

Autonomous practice for advanced practice registered nurses and decreased supervision for physician assistants is another debate driven by corporate medicine. The financial realities of private practice have crushed independent physician practices for years and led to consolidation and expanded physician employment. APRNs and PAs will face the same reality. The fear for patients therefore is not that these practitioners will hang a shingle and practice independently, but rather corporate owners will utilize their new-found privileges to replace physicians within institutions and facilities. Or they will force employed physicians to supervise armies of non-physician practitioners holding them accountable for care rendered under their watch with very limited opportunity to ensure quality.

An extreme example of this theory becoming reality was recently reported by Medscape as Watertown Regional Medical Center in Watertown, WI has apparently replaced all of their anesthesiologists with certified registered nurse anesthetists (CRNAs). It is uncertain how this decision will ultimately pan out but there is no doubt it has become the epicenter of this movement. I imagine the Watertown Bar Association is paying close attention.

Clearly these trends are troubling for physicians. There is concern for their patients and equal concern for the future of the profession. As an organization and community of physicians, we need to draw on our strengths. We need to organize and advocate for patient safety and transparency measures from our elected officials. We need to engage in dialogue with community organizations and local business groups to discuss the benefits of physician-led care. We need to demand accountability for those corporations and medical professionals that sacrifice quality for financial gain. And we need to take heart that your ability to connect and maintain relationships with your patients on a highly personal level is something that cannot be replicated in a corporate world.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Impact of Stimulants to Reduce Readmission for Aggressive Behavior in Children with Attention Deficit Hyperactivity Disorder and Autism Spectrum Disorder

By Angela Vittori, M.D.,[1, 2] Young Jo, M.D.,[1, 2] Jonathan Brown (OMS-4),[3] Clara Alvarez, M.D.,[1,2] and Samuel Neuhut, M.D.[1, 2]

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[3]Kansas City University of Medicine and Biosciences

Abstract

Background

Disruptive and aggressive behavior are some of the more common reasons for admission among pediatric patients with attention deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD). These patients require more physician visits than their peers. Stimulants are medications shown to be effective in both ADHD and ASD. The goal of the authors is to estimate the strength of association between the use of stimulants during hospitalization and reduction of 30- and 90-day readmission rates for aggressive behavior.

Methods

This is a retrospective study examining encounters made at 65 HCA hospitals within the United States (U.S.) from 2016 to 2019. Main exposure was the presence of stimulants at any dose during hospitalization. Main outcome was defined as 30- and 90-day readmissions and length of stay. Controlled variables include sex, age, and ethnicity.

Results

423 patients ages 4 to 17 were admitted for aggressive behavior and carried a diagnosis of ADHD and ASD. Only 97 patients (23%) received stimulants during hospitalization. Presence of stimulants was associated with decreased rates of 30-day and 90-day readmission with odds ratio of 0.224 and 0.238 respectively ($p<0.05$).

Conclusions

Stimulants given for patients with ADHD as well as ASD were found to be associated with a decrease in the likelihood of readmission to the hospital for aggressive behavior within 30- and 90-day intervals. Future studies should determine whether the reduction in hospitalization is linked with improved long-term care as well as decreased cost of hospitalization for these patients

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Introduction

Frequency of 30-day hospital readmission attributed to mental health is significantly higher than those caused by non-mental health issues among pediatric patients.[1] Chief complaints of agitation and aggressive behaviors are some of the most common presenting problems seen in pediatric behavioral health units.[2] Disruptive and aggressive behavior is especially common in patients with attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), oppositional defiant disorder, and conduct disorder.[3] Eleven percent of children with ASD were reported to be hospitalized in a psychiatric unit before the age of 21,[4] with aggressive behavior being the strongest risk factor associated with psychiatric hospitalizations in patients with ASD.[5]

Prevalence of ADHD as a comorbidity of ASD is 42% according to a study which looked at Survey of Pathways to Diagnosis and Services in the United States.[6] Stimulant medications are highly effective at treating ADHD and suppressing associated aggressive behavior, oppositional behavior, and conduct problems.[7,8] Patients with disruptive behavior disorders such as ADHD who are admitted for agitation have better therapeutic outcomes with stimulants such as methylphenidate compared to antipsychotics or mood stabilizers without a stimulant.[8] In 2006, Santosh et al. demonstrated that the use of stimulants in patients with ASD and ADHD reduced hyperactivity, impulsivity, inattention, oppositionality, aggression, and intermittent explosive rage without statistically significant changes in tics or repetitive behaviors.[9]

Youth aggression continues to be a challenge for patients, their families, and medical providers. For this population and their families, prevention strategies and limiting episodes of aggression are essential.[10] Conduct problems are associated with a negative impact on parent-child relationships which can ultimately attenuate psychosocial treatment responses.[11] Additionally, a large component of the total health care costs for patients with ASD comes from psychiatric hospitalization. Children with ASD incurred 12.4 times the cost for psychiatric

hospitalization than children without ASD.[4] There are several studies in the literature which show the efficacy of stimulants to reduce aggressive symptoms associated with disorders described above; however, none have established a link to reduce readmissions and frequent hospitalizations. The authors' goal is to estimate the strength of association between the use of stimulants during hospitalization and the subsequent reduction of 30- and 90-day readmission rates for aggressive behavior in pediatric patients with ADHD and ASD.

Methods

Institutional Review Board (IRB) exemption was granted from HCA IRB manager system due to this analysis working exclusively on pre-existing, de-identified data. All patients and their data points were declassified prior to analysis.

Study design and setting

This is a retrospective study analyzing existing inpatient encounters from HCA Healthcare hospitals. HCA Healthcare system is an American for-profit operator of facilities which include 185 hospitals and other sites of care including surgery centers, emergency rooms, and physician clinics across 21 states within the United States. This study examined records across a 48-month period, from January 1, 2016 through December 31, 2019.

Data Collection

The HCA electronic admission, discharge, inpatient medication, and billing records were queried for all patients ages 4 to 17. Data collection was conducted from November 2018 through April 2020. Patients included in the cohort required diagnosis of both ADHD and ASD per ICD-10 codes, F84 and F90 respectively. The diagnosis fields were searched for presence of aggressive behavior as per ICD-10 codes. ICD-10 codes used for identifying hospitalization secondary to aggressive behavior were: Conduct disorder: F91, Oppositional disorder: F91.3 and Disruptive disorder: F34.81. The corresponding medical records were then used to extract demographic information, length of stay, inpatient medication list, home medication list, and readmission within 30 and 90 days.

Measures

The main exposure was the use of stimulant medication during hospitalization. Stimulants included are listed in the appendix. Main outcome was readmissions within 30 and 90 days of discharge. The length of stay for that hospitalization was also reviewed. For the purpose of this study, only the patient's initial admission to an HCA facility was used. A total of 65 hospitals were included in this study, with an average of 6.6 patients treated at each hospital. Thus, this analysis ignores the potentially confounding effect from hospital clustering.

Analysis

Multivariable logic regression was performed to evaluate the association of stimulants and rates of readmission within 30 and 90 days. Odds ratio was calculated from the logistic regression model. Linear regression was performed to model the association of stimulants on length of stay. Controlled variables for calculated regressions included age, gender, and ethnicity. All data was analyzed by SAS 9.4 and IBM SPSS Statistics version 24.

Results

Demographics information and readmission findings

Descriptive statistics of demographic information are generated and listed on **Table 1.** 423 patients ages 4 to 17 were admitted for aggressive behavior and carried a diagnosis of ADHD and ASD. The average age of patients sampled was 11.8. Of the 423 patients, 351 (83%) of them were male. 310 (73.3%) patients were white. 97 patients (23%) received stimulant medications. 102 (24%) patients were readmitted within 30 days while 117 (27%) patients were readmitted within 90 days. Patients who received stimulants had a longer length of stay by 4.399 days. Results are listed on **Table 2**.

30-day readmission

Presence of stimulant medications during hospitalization was associated with decreased rates of 30-day readmission. Odds ratios are visualized on **Figure 1**. Patients who received stimulants had a statistically significant ($p < 0.05$) odds ratio for 30-day readmission of 0.224. Looking at the inverse, patients who did not receive stimulants were 4.464 times as likely to be readmitted within 30 days for a diagnosis of aggressive behavior compared to those who received stimulants. Age was the only controlled variable associated with a decreased rate of 30-day readmission. For every increase of one year in age, the odds were 0.874 times as likely to have a readmission within 30 days.

Table 1: Patient Characteristics

	Total (N= 423)		Received Stimulants		Did NOT Receive Stimulants	
Age	Mean 11.8	Range 4-17	Mean 12.0	Range 5-17	Mean 11.8	Range 4-17
	N	%	N	%	N	%
Sex						
Male	351	83.0	84	86.6	267	81.9
Female	72	17.0	13	13.4	59	18.1
Race/ethnicity						
White	310	73.3	77	79.4	233	71.5
Black	74	17.5	14	14.4	60	18.4
Asian	1	0.2	0	0.0	1	0.3
Other	38	9.0	6	6.2	32	9.8
Insurance type						
Uninsured	12	2.8	2	2.1	10	3.1
Insured	411	97.2	95	97.9	316	96.9

Table 2: Discharge Outcomes

	Total (N= 423)		Received Stimulants		Did NOT Receive Stimulants	
	N	%	N	%	N	%
Prescribed stimulant medication						
Yes	97	22.9	n/a		n/a	
No	326	77.1				
Readmitted within 30 days						
Yes	102	24.1	8	8.2	94	28.8
No	321	75.9	89	91.8	232	71.2
Readmitted within 90 days						
Yes	117	27.7	10	10.3	107	32.8
No	306	72.3	87	89.7	219	67.2

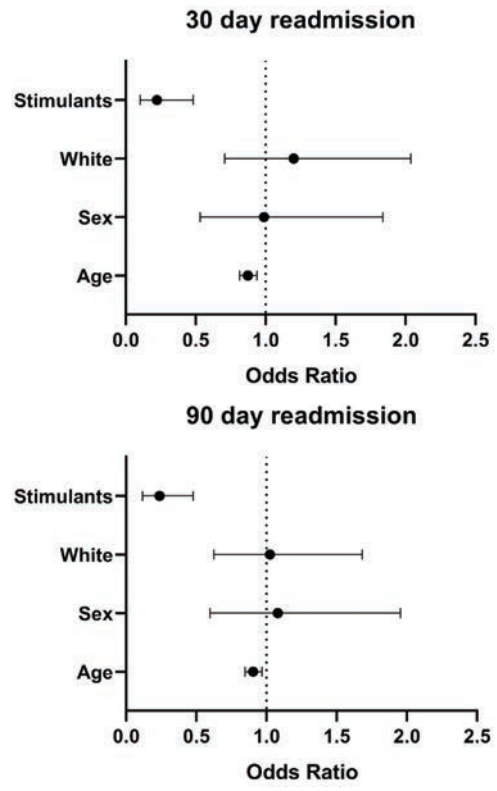
90-day readmission

Presence of stimulant medications during hospitalization was also associated with decreased rates of 90-day readmission. Patients who received stimulants had a statistically significant odds ratio for 90-day readmission of 0.238. Looking at the inverse, patients who did not receive stimulants were 4.202 times more likely to be readmitted within 90 days for a diagnosis of aggressive behavior compared to those who received stimulants. Again, age was the only controlled variable associated with a decreased rate of 90-day readmission. For every increase of one year in age, the odds were 0.906 times as likely to have a readmission within 90 days.

Discussion

Treatment of aggressive behavior in pediatric patients with ADHD and ASD can be challenging. As described earlier, stimulants have been the standard of care to treat disruptive behaviors in children and adolescents with ASD. Despite their efficacy in literature, stimulant medications are underused in this population. This study demonstrated that the majority of patients with ADHD and ASD hospitalized for aggressive behavior did not receive stimulants during their hospitalization course. Older studies such as Barkley[12] identified concerns about the efficacy of stimulants and the worsening of stereotyped movements in patients with ASD with ADHD as a comorbidity. Since then, other studies have disputed the findings and demonstrated improvement in behavior with the use of methylphenidate in comparison with placebo.[13,14] Stimulants are effective medications, which need to be examined further in order to examine long-term benefits among this population. Future studies should include finding an optimal stimulant dosage and formulation for decreasing aggression.

Figure 1: Odds ratio graphed on box and whisker plot. Y axis denotes variables included on regression.



Stimulants were associated with decreased rates of readmission for both 30- and 90-day intervals. This means that stimulants are linked with a reduction of unnecessarily frequent admissions secondary to aggressive behavior among this patient population. A study by Brooks et al[15] suggests that children with ASD may find interactions with healthcare services to be "extremely stressful." Frequent hospitalization for this population can be harmful in the long-term. There was an association between increased mortality, as well as high levels of emotional distress, among psychiatrically hospitalized youths.[16] General psychiatric hospitalizations are not suitable for the pediatric ASD population because these patients require specialized interventions catered to their impairment in communication and cognitive abilities.[16] This same study concluded that treatment in specialized units for ASD patients have shown to decrease the rates of readmission compared to general psychiatry units. It is important to explore how stimulants can be further integrated into specialized psychiatry units for ASD patients. The reduction of readmissions can promote parent-child relationships, and reduce health expenses, especially for families with ASD patients.[4,17] Future studies can quantify the positive impact in different areas of patient care due to the reduction of readmissions. These factors can be long-term remission of behavioral symptoms and decrease in health care cost.

The association of age and decreased readmission rates could be due to different subtypes of aggression according to age. For example, older children with ASD have been shown to engage in less physical forms of aggression compared to younger children.[18] The subtypes of aggression were not specified in the authors' study but as previously discussed, aggressive behavior is the strongest risk factor associated with psychiatric hospitalizations in patients with ASD.[5] A meta-analysis found that the rate of persistence meeting full criteria for ADHD in adulthood is low.[19] It has been suggested that impulsivity and hyperactivity, commonly found in those with ADHD, improve with age, which can explain our findings.[20]

Length of stay is increased in the cohort that received stimulants. A previous study showed that children who received specialized hospital-based psychiatric care services for ASD had a decreased length of stay.[21] However, increased length of stay is not always a negative finding as the longer length of stay could be used to create more productive care plans to prevent readmissions and decrease the overall hospital stay for the patients.

Those who received the stimulants may have had more severe presentations of aggressive behaviors requiring more intensive

stabilization and increased length of stay. The goal of this study is to examine a method to minimize the days these patients spend in an inpatient setting, which have proven to be detrimental. Future studies can clarify whether fewer readmissions can lead to decreased overall days of hospitalization and subsequent improved long-term care in these patients.

Limitation and potential implications

Due to the large number of patients sampled, as well as the nature of the study, access to clinical notes was limited. Therefore, the diagnostic criteria as well as severity of both ASD and ADHD are unable to be confirmed. Another limitation in this study is the inability to determine whether patients received general or specialized psychiatric care during their hospital stay. However, the study was able to include a large amount of patient data from multiple hospitals across the U.S., suggesting strong generalizability.

Conclusion

Stimulants are a mainstay of treatment for patients with ADHD and ASD. This study has shown that stimulants given at any dosage in a pediatric inpatient setting were associated with decreasing the likelihood of 30- and 90-day readmission for aggressive behavior. Thus, stimulants may be linked with decreasing overall number of days patients with ADHD and ASD spend in a hospitalized setting. Future studies should determine whether the reduction in hospitalization is linked with improved long-term care as well as decreased cost of hospitalization for these patients.

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Research data for this article: HCA maintains strict standards in protecting the privacy and data of its patients. This organization therefore does not allow universal data sharing but requests for specific de-identified data may be reviewed on ad-hoc basis when necessary.

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Appendix: List of stimulants included in the study

Generic Name	Trade Name
Methylphenidate	Concerta, Daytrana, Ritalin
Amphetamine salts	Adderall, Adzenys, Evekeo
Dextroamphetamine	Dexedrine
Dexmethylphenidate	Focalin
Methylphenidate HCl	Metadate, Methylin, Quilivant
Lisdexamfetamine dimesylate	Vyvase

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Improving Patient Safety by Reducing Medical Errors

Background:
The Dade County Medical Association (DCMA) is proud to provide its members with free continuing medical education (CME) opportunities in order to obtain and retain medical licensure.

Needs Assessment:
Multiple studies benchmarking the incidence of medical errors have led to efforts to improve patient safety, resulting in regulatory agencies and healthcare providers across the nation making the prevention and reduction of medical errors a priority. Providers should understand how regulatory agencies have shaped the patient safety movement, provided a structure for identifying causes of medical errors, and developed effective preventive strategies. Based on state and national reports of patient safety events and malpractice data, regulatory agencies have established patient safety goals for the prevention of medical errors.

Faculty/Credentials: Linda Edwards, MD is the Senior Associate Dean for Educational Affairs and Associate Professor for the Department of Medicine, University of Florida College of Medicine, Jacksonville, FL. Francys Calle Martin, Esq., LHRM is the Senior Loss Prevention Attorney and Vice President of Florida Academic Healthcare Patient Safety Organization.

Learning Objectives:
1. Define medical error and discuss the multiple factors propelling medical error prevention and patient safety efforts.
2. Review The Joint Commission and state agency standards, regulations relating to sentinel and adverse events, and the process of root cause analysis.
3. Review the Board of Medicine's most misdiagnosed conditions and provide examples of each and the consequences for both the patient and the healthcare provider.

Date of Release: May 15, 2021 **Date Credit Expires:** May 15, 2022 **Estimated Completion Time:** 2 hours

How to Earn this CME Credit:
1. Read the article, complete the post-test, and email your test answers to kwilliford@miamimed.com. Upon completion, your certificate will be emailed to you.
2. Read the article, complete the post-test page in the journal, and mail the test to the DCMA office. Upon completion, your certificate will be emailed to you.
3. Visit miamimed.com/cme to read the article and take the CME test online. Upon completion, your certificate will automatically be delivered to your DCMA member profile.

CME Credit Eligibility:
A minimum passing grade of 70% must be achieved. Only one re-take opportunity will be granted. A certificate of credit/completion will be automatically delivered to your DCMA member profile when submitted online, or emailed/mailed for those without a profile within 2-4 weeks of submission.

Faculty Disclosure:
Linda Edwards, MD and Francys Calle Martin, Esq., LHRM report no significant relations to disclose, financial or otherwise with any commercial supporter or product manufacturer associated with this activity.

Disclosure of Conflicts of Interest:
The Dade County Medical Association (DCMA) Continuing Medical Education (CME) Committee requires speakers, faculty, and other individuals who are in a position to control the content of this educational activity to disclose any real or apparent conflict of interest they may have as related to the content of this activity. All identified conflicts of interest are thoroughly evaluated by the DCMA CME Committee for fair balance, scientific objectivity of studies mentioned in the presentation and educational materials used as basis for content, and appropriateness of patient care recommendations.

Accreditation Statement

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the Dade County Medical Association (DCMA) Continuing Medical Education (CME) Committee. The Dade County Medical Association is accredited by the Florida Medical Association to provide continuing medical education for physicians.

The DCMA CME Committee designates this educational activity for a maximum of 2 AMA PRA Category 1 credits.™ Each physician should claim only those credits that he/she actually spent in the activity.

Improving Patient Safety by Reducing Medical Errors

By Linda Edwards, M.D.[1] and Francys Calle Martin, Esq., LHRM[2]

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Abstract

Multiple studies benchmarking the incidence of medical errors have led to efforts to improve patient safety, resulting in regulatory agencies and healthcare providers across the nation making the prevention and reduction of medical errors a priority. Providers should understand how regulatory agencies have shaped the patient safety movement, provided a structure for identifying causes of medical errors, and developed effective preventive strategies. Based on state and national reports of patient safety events and malpractice data, regulatory agencies have established patient safety goals for the prevention of medical errors.

Introduction

A ***medical error*** has been defined in varied ways by a multitude of patient safety organizations. The Institute of Medicine (IOM) defines a medical error as the failure to complete the intended plan of action or implementing the wrong plan to achieve an aim.[1] This error may or may not lead to patient harm or impact the patient in any tangible way. Errors may be those of omission or commission. An error of commission occurs because of the action of a provider. For example, a provider administers an overdose of medication to a patient. An error of omission results from the failure of a provider to take action. For example, the provider may fail to follow up on a significant radiologic study. Errors that never reach the patient also have value in the potential to improve patient safety and prevent future events. A ***near miss*** is an event that could have had an adverse patient consequence but did not because a provider or a process served to intervene and prevent that event from reaching the patient or causing harm.

A number of additional definitions have been developed from the underlying cause of the event or the resulting outcome of the error. A ***latent error*** is one that results from underlying errors in policies, processes, equipment, or the healthcare organization. Studies have shown that most latent errors are the result of systems issues, rather than one individual provider's act or failure to act.

Negligence is defined as the failure to meet the reasonably expected standard of care of a qualified healthcare provider under similar circumstances. Florida Statutes define the standard of care as follows: "The prevailing professional standard of care for a given health care provider shall be that level of care, skill, and treatment which, in light of all relevant surrounding circumstances, is recognized as acceptable and appropriate by reasonably prudent similar health care providers."[2] Only healthcare providers and facilities can be liable for medical malpractice. ***Medical malpractice*** is negligence committed by a licensed healthcare provider or facility. In order to establish a claim of medical malpractice, the patient must establish four elements: duty, breach, causation, and damages. Prior to actually receiving a medical malpractice claim from a patient, a healthcare provider or facility may identify a medical error that could potentially lead to a medical malpractice claim as a ***potentially compensable event***.

In 2002, the National Quality Forum published *Serious Reportable Events in Healthcare: A Consensus Report*, listed 27 adverse events that were, "serious, largely preventable and of concern to both the public and health care providers."[3] These events and subsequent revisions to the list became known as never events. ***Never events*** are medical errors that should not ever happen. Examples of never events include: wrong surgery performed on a patient, surgery performed on the wrong body part, or surgery performed on the wrong patient. Centers for Medicare & Medicaid Services (CMS) has determined that when one of these three never events occurs involving a Medicare beneficiary, Medicare will not cover these costs as they are not a reasonable and necessary treatment for the Medicare beneficiary's medical condition.

Accreditation of a facility also serves as an indicator of quality. Accreditation may be provided by an impartial organization that reviews a facility's operations to ensure that they are meeting national standards. Accreditation by a national organization may also be a condition of reimbursement by certain insurers, may reduce the cost of liability insurance, and also serve to improve customer satisfaction ratings. There are many national accrediting bodies with their own specific standards. Among these is the Accreditation Association for Ambulatory HealthCare (AAAHC), the Agency for Healthcare Research and Quality (AHRQ), the National Committee for Quality Assurance (NCQA), and the Joint Commission (TJC).

TJC is an independent, not-for-profit organization that

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accredits and certifies nearly 21,000 healthcare organizations across the nation. TJC defines a ***sentinel event*** as a patient safety event that reaches a patient and results in death, permanent harm, or severe temporary harm and intervention required to sustain life.[4] These events are called sentinel events because they signal a need to immediately investigate and respond to the event. In 2019, a total of 844 sentinel event reports were received by TJC, with 83% of those self-reported by an accredited facility. The top 10 events reported included:[5]

- Unintended retention of a foreign object events
- Fall-related events
- Suicide events
- Wrong patient, wrong site, wrong procedure events
- Delay in treatment events
- Criminal events (assault, rape, homicide)
- Operation/post-operation complication events
- Perinatal events
- Medication error events
- Fire-related events

Under Florida law, an ***adverse event*** is defined as, "an event over which healthcare personnel could exercise control and which is associated in whole or in part with medical intervention, rather than the condition for which such intervention occurred", that results in a specified injury, including death, brain damage, additional medical or surgical intervention, or transfer to a higher level of care.[6] Hospitals, ambulatory surgical centers, nursing homes, and physician offices licensed under Florida law are required to report statutorily defined adverse events to the Florida Agency for Health Care Administration (AHCA) or Department of Health (DOH), through an annual reporting form submitted to AHCA and including those adverse incidents that occurred at the facility between January 1st and December 31st.[7] Certain licensed facilities are also required to establish and maintain internal risk management programs to track these and other types of events.

Licensed facilities must also report a subset of specific adverse events, including unplanned foreign objects, wrong site surgical procedures, wrong surgical procedures, or surgical procedures on the wrong patient, within 15 days of the occurrence, hence the name ***Code 15*** report. These events will also be included in the facility's annual report, but are considered of sufficient importance to be reported to AHCA within 15 days of the event. Healthcare providers in an office practice setting are also required to report these types of events.[6] The Code 15 report includes a description of the circumstances surrounding the event, as well as analysis and interventions taken to correct and prevent recurrence. License numbers of practitioners who were directly involved in, or witnessed an adverse event are also required on these reports and are routinely forwarded to the DOH to determine whether to initiate a practitioner investigation. The Florida Board of Medicine has prescribed a range of disciplinary actions for a variety of medical errors, practicing beyond the scope permitted by law or competency, and gross or repeated malpractice.

Error Reduction and Prevention

The Institute of Medicine (IOM) is a division of the National Academies of Sciences, Engineering, and Medicine focused on improving health and healthcare in our nation and throughout the world. This team issues recommendations and reports to foster discussion and critical thinking, such as the oft-cited 1999 report *To Err Is Human*. The IOM has estimated as many as 98,000 people die every year as a result of preventable medical errors.[8] A 2016 study published by Johns Hopkins University researchers in the British Medical Journal claims that 251,000 lives are lost every year as a result of medical errors.[9] If correct, this statistic places medical error third among the leading causes of death in the United States, behind heart disease and cancer.[8] Medical error prevention is, therefore, an urgent public health concern requiring close examination of contributing factors and prompt identification of appropriate strategies to reduce risks to patients.

In an effort to control increasing government costs presumed to be related to medical error in the United States, Congress passed the Deficit Reduction Act (DRA) in 2006. Among its other provisions affecting domestic entitlement programs, the DRA required CMS to compile a list of conditions that result in high costs that can reasonably be prevented. CMS developed a list of Hospital Acquired Conditions (HACs) and implemented policies denying or limiting payment by CMS for treatment made necessary by HACs. The list of HACs is lengthy, but some notable examples include falls, catheter-associated urinary tract infections, unplanned retained foreign objects after surgery, and significant pressure ulcers. While HACs may not be the result of error or negligent care, CMS reimbursement consequences have raised the stakes significantly in medical error prevention. Since 2010, the Agency for Healthcare Research and Quality (AHRQ) has been collecting information on HACs. In its most recent National Scorecard on Hospital-Acquired Conditions, updated in January 2019, AHRQ data showed that from 2014 to 2017, HACs fell by 13 percent, saving about 20,700 lives and about $7.7 billion in healthcare costs.[10]

Root Cause Analysis (RCA)

When a sentinel event occurs, TJC requires a Root Cause Analysis (RCA) to be completed within 45 days. While in Florida, AHCA's definition of an adverse event is not necessarily synonymous with TJC's sentinel event; most adverse events undergo RCA. The first step involved in RCA is gathering the information and circumstances surrounding the event by using a multidisciplinary team that includes leadership and all those involved in the event. The causal factors identified drive the corrective action plan, and specific individuals and departments are assigned to be the responsible stakeholders for the corrective actions. Once solutions to the patient safety event are determined and implemented, timely follow-up to assess effectiveness is essential.

Not all sentinel events occur because of medical errors, and not all medical errors result in sentinel events. Because reporting is voluntary, reported RCA events is assumed to represent only a small proportion of actual events.[11] Of the sentinel events reported to TJC through RCA for the past several years, human factors, leadership, and communication are consistently the top three root causes. Since 1998, TJC

has published "Sentinel Event Alerts" which address root causes and risk reduction strategies of sentinel events. Many of the strategies and recommendations have since become TJC hospital standards of accreditation.

The proactive counterpart to RCA, Failure Mode and Effect Analysis (FMEA) is a method for evaluating processes before an adverse event occurs by identifying where and how failures might occur. A FMEA team, comprised of individuals involved in the process, reviews the steps in the process to identify and evaluate those parts of the process most in need of change. Prioritizing is important to ensure systems and processes with the highest likelihood of patient or staff harm are addressed first.

In 2015, the National Patient Safety Foundation published "RCA^2: Improving Root Cause Analyses and Actions to Prevent Harm."[12] Recognizing the value of the RCA process, but noting its inconsistent success, RCA^2 incorporated a second "A" to the RCA acronym: Action. Root Cause Analyses and Action emphasizes the importance of positive action to prevent recurrence of future patient safety events, in addition to techniques to identify causes of past events and remedial measures. "The most important step in the RCA^2 process is the identification of actions to eliminate or control system hazards or vulnerabilities identified in the causal statements." Once identified, the focus turns to the development of strong action plans with support of facility leadership. Numerous patient safety organizations, including TJC, have endorsed the use of RCA^2. It is important to note, however, that with increased focus on evidence-based protocols, facilities should also consider the impact of implementation. For example, creating systems that have not included the very healthcare providers that will be expected to implement them, may result in workarounds that could lead to other vulnerabilities.[13]

Patient Safety

In 2005, Congress passed the Patient Safety and Quality Improvement Act (PSQIA) which established federal privileges and confidentiality for patient safety work product reported to a Patient Safety Organization (PSO).[14,15] As of November 2020, there are a total of 94 listed PSOs, with 56 serving providers across the nation.[16] The legal protections of the PSQIA have significantly enhanced provider willingness to share patient safety and performance improvement information to facilitate the development and dissemination of preventive measures and best practices.

In 2002, TJC established the National Patient Safety Goals program to help accredited organizations focus on specific areas of patient safety concern. For 2021, TJC identified the following National Patient Safety Goals for hospitals:

1. Identify patients correctly
2. Improve staff communication
3. Use medicines safely
4. Use alarms safely
5. Prevent infection
6. Identify patient safety risks
7. Prevent mistakes in surgery[17]

The first goal addresses the issue of reliably identifying the patient for whom service or treatment is intended and matching the service or treatment to that patient using acceptable identifiers, including the patient's name, identification number, or telephone number. Two identifiers must be used when administering medications or blood products. The second goal is to improve the effectiveness of communication among caregivers, focusing on prompt communication of critical test results to the appropriate caregiver so that indicated treatment can be started immediately. The third National Patient Safety Goal promotes reducing or eliminating errors involving medication administration. The fourth goal is the safe use of critical alarms which addresses issues such as overuse. Overuse of alarms may confuse or desensitize staff to critical alerts. The fifth goal is to reduce infections in healthcare facilities, including post-operative infections, central line infections, and urinary tract infections from the use of catheters. Prevention and control strategies must be tailored to the specific needs of each hospital, based on its own risk assessment. The sixth goal is to identify patient safety risks, including patient assessments for suicide risk, which is a frequently reported sentinel event. Identification of individuals at risk for suicide while under the care of, or following discharge from, a healthcare organization is an important step in protecting at-risk individuals. The final National Patient Safety Goal is the prevention of mistakes during surgery. Having a pre-procedure verification process and performing a time-out with the operating room team before anesthesia is administered to ensure the correct procedure, for the correct patient, at the correct site, is a recognized standard of practice. Marking the location of the surgery is also recommended.

Patient safety is also a Florida statutory requirement. Under Florida Statute 395.1012,[18] each licensed facility is required to adopt a patient safety plan. Hospitals receiving reimbursement from CMS must comply with the CMS Conditions of Participation, and it is sufficient to, "develop, implement, and maintain an effective, ongoing, hospital-wide, data-driven quality assessment and performance improvement program."[19] Each licensed facility must also appoint a patient safety officer and a patient safety committee, that includes at least one person who is neither employed by nor practicing in the facility, to promote the health and safety of patients by evaluating patient safety measures of the facility and implementing the patient safety plan.[18]

Diagnostic Errors

Diagnosis is the foundation upon which all healthcare services and treatment rest. It is through correct diagnosis that subsequent healthcare decisions are made. Building upon *To Err is Human*, IOM published *Improving Diagnosis in Healthcare* in 2015, revealing the occurrence of diagnostic errors had been largely underestimated and that most patients would suffer at least one diagnostic error in their lifetime. Noting numerous conflicting definitions of diagnostic error in the healthcare industry, IOM endorses a patient-centered definition: "failure to (a) establish an accurate and timely explanation of the patient's health problem(s) or (b) communicate that explanation to the patient."[20] Taking some inspiration from the TJC National Patient Safety Goals, the IOM outlined eight goals to reduce diagnostic error and improve diagnosis:

- Facilitate more effective teamwork in the diagnostic process among healthcare professionals, patients, and their families.
- Enhance healthcare professional education and training in the diagnostic process.
- Ensure that health information technologies support patients and healthcare professionals in the diagnostic process.
- Develop approaches to identify, learn from, and reduce diagnostic errors and near misses in clinical practice.
- Establish a work system and culture that supports the diagnostic process and improvements in diagnostic performance.
- Develop a reporting environment and medical liability system that facilitates improved diagnosis through learning from diagnostic errors and near misses.
- Design a payment and care delivery environment that supports the diagnostic process.
- Provide dedicated funding for research on the diagnostic process and diagnostic errors.[20]

Diagnostic errors cause harm by preventing or delaying the appropriate treatment or providing unnecessary or harmful treatment. In the outpatient setting, it is estimated that each year, five percent of adults will experience a diagnostic error. In the hospital setting, diagnostic errors are estimated to account for 6-17 percent of adverse incidents each year.[20] Diagnostic errors are also the leading type of paid medical malpractice claims and twice as likely to have caused the patient's death, compared to other claims.[21] In a 2013 study analyzing 25 years of data submitted to the National Practitioner Data Bank,[21] diagnostic errors were the highest claim type at 28.6 percent and accounted for 35.2 percent of total payments, which was also the highest proportion. Diagnostic errors were the leading cause of claims-associated death and disability. After adjusting for inflation, diagnosis-related payments totaled $38.8 billion.[21]

Misdiagnosed Conditions

Recognizing the paramount importance of timely and accurate diagnosis of medical conditions, the Florida Board of Medicine requires continuing education for physician license renewals to include information relating to the five most misdiagnosed conditions during the previous biennium.[22] Effective March 2, 2020, the five most misdiagnosed conditions include:

- cancer related conditions,
- gastroenterology related conditions,
- OB/GYN related conditions,
- cardiology related conditions, and
- neurological conditions.[22]

Cancer Related Conditions

In 2020, the American Cancer Society estimated there will be 1.8 million new cancer cases diagnosed, and 606,520 cancer deaths in the United States.[23] Florida had one of the highest state diagnosis rates at 150,500. The top three most diagnosed new cancers in Florida were female breast, lung and bronchus, and prostate cancer.[23]

"Misdiagnosis" of cancer includes missed diagnosis, wrong diagnosis, and delayed diagnosis. In one case presented to the Board of Medicine, the patient's chest x-ray revealed a focal area of increased density in the lung. The physician documented the findings, as well as the patient's reluctance to undergo a CT scan, citing lack of insurance. Six years later, new diagnostic studies revealed a small infiltrate of the lung and radiographic follow-up was recommended. The physician documented a plan to follow up, but failed to do so, and failed to order additional studies. Over a year later, the patient presented to another physician, who ordered a CT of the chest, which revealed a malignant appearing mass in the right lung. A biopsy later revealed adenocarcinoma.

The Florida Board of Medicine found that the initial ordering physician failed to practice medicine with the level of care, skill, and treatment which, in light of all relevant surrounding circumstances, is recognized as acceptable and appropriate by a reasonably prudent similar healthcare provider. The physician was also cited for keeping illegible records, failing to maintain a concise ongoing problem list, and not documenting tests ordered, radiographic follow up, or crucial conversations with the patient.

Gastroenterology Related Conditions

In a 2020 study by the Clinical Gastroenterology and Hepatology Journal on medical malpractice, gastrointestinal (GI) claims submitted to one national insurer from 1985 to 2005 were analyzed, and found that GI does not rank high among subspecialties in malpractice claims.[24] Of 12,367 total claims in just one year, 233 or 1.8 percent were classified as a GI claim. Despite the few malpractice claims, the American Gastroenterological Association has created a task force on Quality in Practice and has published recommendations that seek to improve the relationship between quality of care and reimbursements by supporting cost-effective and high quality of care.[25]

In one adverse event reviewed by the Board of Medicine, the patient was consented to undergo a colonoscopy with sedation. Several attempts were made to obtain IV sedation by inserting the needle into the patient's arms and hands. The IV infiltrated resulting in redness and puffiness in the patient's arm, but was finally placed. Unfortunately, the provider did not obtain adequate sedation because the patient was experiencing pain during the procedure and asked the provider to stop. The provider continued despite the patient's loud and repeated cries and requested that the nurses hold the patient down against her will. The medical record failed to document any of these events. The Florida Board of Medicine found that the provider performed a wrong procedure by having performed a colonoscopy without adequate sedation, when the consent was for a colonoscopy with sedation. It was also considered an authorization procedure by virtue of the patient having withdrawn her consent repeatedly by asking the provider to stop. The provider received a reprimand from the Board of Medicine, was fined $15,000, and ordered to perform 100 hours of community service.

OB/GYN Related Conditions

Events involving obstetric complications are often related to

lapses in decision making that are not identified until reviewed in hindsight. The effects of these lapses can result in injury to both the mother and the child, and therefore, the risks and the resulting toll are amplified and can range from a compromised infant with transitory issues to maternal and fetal death. A benchmarking study of over 800 births found that substandard clinical judgment by healthcare providers contributes to 77 percent of events.[26] Very often, these events take place during the second, or active, stage of labor and the failure to respond to fetal distress in a timely manner.[26]

In one recent event reviewed by the Florida Board of Medicine, a patient was at 40 weeks and four days gestation with history of a prior cesarean section and the infant had previously been noted to be in breech position. The patient desired a vaginal birth after cesarean (VBAC), but was not advised of the risks of vaginal delivery given her history and breech presentation. The physician ordered Misoprostol, which is contraindicated for VBAC patients due to the increased risk of uterine rupture of dehiscence, and also ordered Pitocin, which is contraindicated for VBAC patients with breech presentation. The physician failed to document the patient's progress in the medical record, and despite clear signs of fetal distress, the patient was allowed to continue to labor and delivered a stillborn infant two hours later. The physician was required to pay a fine of $20,000, complete 15 hours of continuing medical education, and their license was suspended for four months.

Cardiology Related Conditions

There has been much publicity recently regarding the failure to diagnose heart disease, particularly in women, and the historical and cultural reasons for this disparity.[27] According to the Centers for Disease Control and Prevention, heart disease is the leading cause of death for women in the United States.[28] Almost 64 percent of women who die suddenly from heart disease have no previous symptoms, making it more difficult to diagnose.[29]

The Florida Board of Medicine reviewed an incident of a patient who presented to the emergency room with unstable vital signs and complaints of left arm, side, and knee pain subsequent to a fall. Her history was positive for myocardial infarction, coronary artery bypass grafts, hypertension, and myelofibrosis. The emergency department physician incorrectly interpreted the chest x-ray, despite the radiology report indicating pleural effusion and left lower lobe atelectasis and an abnormal electrocardiogram showing tachycardia. The only treatment rendered was a 500 mL bolus of normal saline. Without further evaluation or timely intervention, the patient continued to deteriorate, coded, and expired.

The Board determined the physician failed to meet the standard of care by failing to properly diagnose and treat the patient, failing to correctly interpret the chest x-ray, failing to address the abnormal electrocardiogram, and failing to recognize a hemothorax in a patient with left sided chest trauma with hypotension and tachycardia. The physician was ordered to pay an administrative fine of $10,000, complete five hours of risk management, present a one-hour lecture to the entire medical staff of the hospital on diagnosis and treatment of hemothorax, and pay investigative costs of $1,073.

Neurological Conditions

A retrospective study of diagnostic errors in neurological emergencies found that these incidents can be classified into three categories: knowledge gaps, cognitive errors, and systems-based errors.[30] Misdiagnosis of cerebellar lesions and erroneous radiology resident interpretations of neuroimaging were the most common mistakes nationwide. Further, neurologic conditions can be challenging to diagnose, because there are a number of diseases that may manifest with neurologic symptoms. These symptoms are even more difficult to diagnose in minors, impaired patients, or those pre-existing neurological deficits because they may not be able to accurately describe their symptoms. A detailed physical examination and past medical history, as well as imaging, and timely consultation from the neurology service are critical to establish an accurate diagnosis.

In a related incident before the Florida Board of Medicine, a patient presented with severe headaches, confusion, and dizziness, as well as a history of previous shunt insertion for hydrocephalus. A CT scan revealed hydrocephalus with shunt catheter in place and no signs of acute intracranial hemorrhage. The patient was diagnosed with a malfunctioning shunt and was taken to the operating room where the old shunt was replaced. A left frontal burr hole was also made. The physician documented in the operative report that he had evacuated blood from the patient's head and informed the patient. Post-operatively, the patient was obtunded and having seizures, requiring ventilator-assistance. The investigation revealed the physician performed an unnecessary procedure by drilling a burr hole that was not indicated and deceptively documented that a hematoma was evacuated.

Conclusion

Medical errors will never be completely eliminated, but by utilizing available patient safety data, adhering to National Patient Safety Goals, and utilizing tools such as RCA[2] to identify those areas of greatest patient safety concern, providers can play an important role in reduction and prevention. As the preceding examples illustrate, commonly encountered challenges with the stages of the diagnostic process can be minimized by consistently performing thorough histories and physicals, promptly following up on diagnostic tests, and communicating findings to patients. Medical record documentation is also an extremely important tool for communication between multiple services and healthcare providers involved in a patient's care. Failure to keep appropriate written records is a frequent cause of Florida Board of Medicine disciplinary action and a hindrance to the provision of appropriate care. The benefits of an electronic health record, including diagnostic decision support, clinical reminders, and system alerts, have the potential to help avert the risk of diagnostic missteps.

Conflict of Interest: The authors declare no conflicts of interest.

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Prevention of Medical Errors Quiz

CME Questions (circle one answer) / Free to DCMA Members / $55 charge for non-members*

(**Return by May 15, 2022**: ONLINE at miamimed.com/cme or BY MAIL to **1011 Sunnybrook Rd., Suite 904, Miami, FL 33136**)

1. An event that could have had an adverse patient consequence but did not because a provider or a process served to intervene and prevent that event from reaching the patient or causing harm is known as:
- a. Latent error
- b. Near miss
- c. Negligence
- d. Never event

2. The Institute of Medicine has estimated as many as _____ people die every year as a result of preventable medical errors.
- a. 86,000
- b. 90,000
- c. 94,000
- d. 98,000

3. When one of the three identified never events occurs involving a Medicare beneficiary, Medicare will only cover half of the costs as they are not a reasonable and necessary treatment for the Medicare beneficiary's medical condition.
- a. True
- b. False

4. When did Congress pass the Patient Safety and Quality Improvement Act (PSQIA)?
- a. 2003
- b. 2004
- c. 2005
- d. 2006

5. Per The Joint Commission, when must a root cause analysis be completed for a Sentinel Event?
- a. Within two weeks
- b. Within one month
- c. Within 45 days
- d. By the end of the following month

6. Which of the following are required to report statutorily defined adverse events to the Florida Agency for Health Care Administration (AHCA) or Department of Health (DOH)?
- a. Hospitals
- b. Ambulatory Surgical Centers
- c. Physician Offices
- d. Nursing Homes
- e. All of the above
- f. A, B, & C above
- g. A & B above

7. The Joint Commission defines a _____ event as a patient safety event that reaches a patient and results in death, permanent harm, or severe temporary harm and intervention required to sustain life.
- a. Latent
- b. Neglectful
- c. Negligent
- d. Sentinel

8. RCA stands for:
- a. Real Cause Audit
- b. Root Cause Analysis
- c. Reason Cause Analysis
- d. Root Cause Audit

9. Diagnostic errors are the leading type of paid medical malpractice claims.
- a. True
- b. False

10. What are the Florida Board of Medicine's most misdiagnosed conditions as of March 2020?
- a. Cardiovascular disease, urologic, cancer, surgical, and OB/GYN related conditions
- b. Meningitis, COVID-19, Tuberculosis, neurological, and surgical related conditions
- c. Cancer, gastroenterology, neurological, OB/GYN, and cardiology related conditions
- d. Brain injury, fractures, surgical complications, appendicitis, stroke

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DCMA Hosts Annual Resident Research Competition

The DCMA received a record number of submissions for the 2021 Resident Research Competition. The entries were narrowed down to ten for the virtual symposium on March 20. Each finalist had seven minutes to present their research to the DCMA membership. Members earned 2 AMA PRA Category 1 Credits by participating. Congratulations to the top three winners:

1st Place
Michael Appeadu, M.D., University of Miami/Jackson Memorial Hospital
Leukocyte-poor Platelet-Rich Plasma (PRP) Injection for Management of Refractory Medial Epicondylitis in an Army Veteran

2nd Place
Osvaldo Friger, M.D., Keralty Hospital - Westchester General Hospital
Cervical Spinal Cord Infarction: A 56-Year-Old Male With Incomplete Quadriparesia

3rd Place
Bethany Summerford, M.D., Jackson Memorial Hospital – University of Miami
A Case Of Herpes Zoster In A Patient Without A History Of Primary Varicella Infection

WelcomeNew DCMA Members!

The Dade County Medical Association is excited to welcome the following new members who have joined since the publication of our last issue:

Active:
Kevin Fox, D.O.
Mariella Ortigosa-Goggins, M.D.
Tracy Romanello, D.O.

Physician in Training:
Oliver Acosta, M.D.
Andrew Jung, D.O.
Samuel Kareff, M.D.
Gaurav Kathuria, M.D.
Jonathan Nieves, M.D.

Student:
Jose M Hernandez
Donna Kalipersaud
Lauren Peterson
Diana Rose
Maximilian Wengyn

DCMA Women in Medicine Host First Meeting of 2021

The Dade County Medical Association Women in Medicine met for the first time in 2021 at Comprehensive Health Center hosted by DCMA President Dr. Rudolph Moise. The discussion included how to start a practice, and Dr. Moise shared his knowledge as a physician entrepreneur. Attendees also learned about the latest advancements and development in regenerative medicine. They also had the opportunity to try some of the new technology available at Comprehensive Health Center.

The DCMA Women in Medicine Committee is made up of Adriana Bonansea, M.D., Chair, and Barbara Montford, M.D., Damaris Mafut, D.O., Violina Bhattacharyya, M.D., Delvena Thomas, M.D., and Patricia Ares-Romero, M.D


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