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The Association of Health Literacy with the Management of Type 2 Diabetes

Samita Kumar

University of North Texas Health Science Center at Fort Worth, rms.sara03@gmail.com

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Introduction: Type 2 Diabetes (T2D) is a chronic metabolic disease characterized by high blood glucose levels in the blood. It is associated with microvascular and macrovascular complications which can lead to potential threats such as to amputations and even death. The irony of the disease is that these complications are preventable with appropriate treatment and self-management. The Emergency Medicine Department (ED) at University of Southwestern Medical center conducted this study to assess health literacy Parkland Memorial Hospital patients with T2D. The objective for the research study was to assess the for association of health literacy with management of T2D.

Methods: This was a prospective study with collection of personal health information (PHI) and 30 day-follow up for ED recidivism. Eligibility was assessed by pre-screening via EPIC (Electronic Medical Record System for Parkland). The tool for measuring health literacy was the Short Assessment of Health Literacy (SAHL) and data was collected.

Results: The total number of subjects enrolled was 23 with ages 18 or above male and females both with Spanish or English speaking only with T2D. Mean age of the subjects was ~50 years with standard deviation of 10 years, males were over half than women. About 74% were white hispanic males. According to the data collected, 30% of the patients demonstrated inadequate health literacy based on SAHL score survey. Since the study could not reach adequate power due to low enrollment, no significant associations could be made from this small sample size. Total number of subjects required to have adequate power was 400.
Conclusions: Due to low enrollment period at this time the recommendation would be to continue collecting data to have a larger sample size to afford the observation of statistically relevant associations. If any, statistically significant associations are found, then future studies will focus on improving diabetes outcomes through the development of educational tools at the individual patient’s appropriate literacy level. There are many reasons to improve diabetes care and explore all possible factors that contribute to poor outcomes. Millions of people are living with uncontrolled diabetes and the burden is not only on the patient but also on the community as a whole. Quality care should aim for improved benchmarks for patients with diabetes and their knowledge about the disease, such as 1) obtaining HbA1c levels below 8%, 2) blood pressure in the normal range, 3) having regular foot exams to keep a check on any developing signs of pressure sores and 4) most importantly having dilated eye exam on a regular basis.

Keywords: Type 2 Diabetes, Health Literacy, Emergency Department, Recidivism
The Association of Health Literacy with the Management of Type 2 Diabetes

Samita Kumar

APPROVED:

______________________________
Dr. Stephen Mathew, Major Professor

______________________________
Dr. Caroline Rickards, Committee Member

______________________________
Dr. Ava Pierce, Site Mentor & Committee Member

______________________________
Shannon McNabb, Immediate Site Mentor & Committee Member

______________________________
Dr. Johnny He, Interim Dean, Graduate School of Biomedical Sciences
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I would like to express my sincerest appreciation to my site mentor Shannon McNabb MA, MPH, Clinical Research Manager, Research Division at UTSW for her continuous guidance, expertise, support and hard work that she put in mentoring me. Given the very busy schedule, it was not easy or convenient for her, yet she always managed to generously provide her time, knowledge and patience as needed. As a result of her commitment and assistance, I have a much deeper understanding of how a study is conducted right from the conception of ideas to actually start of the study. Shannon guided me every step of the way right from day one during my internship at UTSW. I am grateful for a wonderful experience both at the professional and personal levels. I appreciate her patience in answering my numerous questions and being tolerant
with my never-ending queries. Shannon provided me with all the support needed and at the same time allowed me to make independent decisions when required during the study. Above all, I thank her for treating me as a peer and accommodating all my needs. From weakness to strength, from grass to grace, the knowledge, skills and patience she has imparted to me will be a great asset throughout my career. Due to her support and guidance I am looking forward to a satisfying and rewarding career in Clinical Research. My gratitude for her contribution to my future success is immeasurable. I extend heartfelt gratitude for all she has done in expanding my knowledge of the Clinical Research Field. She is an icon of integrity and hard work, as well as a great mentor. Her achievements and outstanding leadership qualities are worthy of emulation. She is a blessing to me and everyone around her. There is a tiny request that if we were not so burdensome and only if it will not take a lot of time away from your own work, please continue mentoring. I would love that more students get to avail the same opportunity to experience and learn what I had with you.

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I would also like to convey my gratitude to the committee members. I appreciate and treasure everything each one has taught me during this internship practicum. I am very blessed to have the opportunity to learn from the pioneers in Clinical Research.
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<table>
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<th>Definition</th>
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<tbody>
<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
</tr>
<tr>
<td>BMI</td>
<td>Basal Metabolic Index</td>
</tr>
<tr>
<td>BID</td>
<td>Twice a day</td>
</tr>
<tr>
<td>B/L</td>
<td>Bilateral</td>
</tr>
<tr>
<td>CCP</td>
<td>Community Consultation Plan</td>
</tr>
<tr>
<td>DOB</td>
<td>Date of birth</td>
</tr>
<tr>
<td>ECG</td>
<td>Electrocardiogram</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>EMR</td>
<td>Electronic medical record</td>
</tr>
<tr>
<td>GCP</td>
<td>Good Clinical Practice</td>
</tr>
<tr>
<td>HLiT</td>
<td>Health Literacy</td>
</tr>
<tr>
<td>HIPAA</td>
<td>Health Insurance Portability and Accountability Act</td>
</tr>
<tr>
<td>HCl</td>
<td>Hydrochloride</td>
</tr>
<tr>
<td>I/E</td>
<td>Inclusion/Exclusion</td>
</tr>
<tr>
<td>IDI</td>
<td>International Diabetes Institute</td>
</tr>
<tr>
<td>IRB</td>
<td>Institutional Review Board</td>
</tr>
<tr>
<td>LDL</td>
<td>Low Density Lipids</td>
</tr>
<tr>
<td>LWBS</td>
<td>Left Without Being Seen</td>
</tr>
<tr>
<td>LWBT</td>
<td>Left Without Being Treated</td>
</tr>
<tr>
<td>NVS</td>
<td>Newest Vital Signs</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>PMH</td>
<td>Past Medical History</td>
</tr>
<tr>
<td>PSH</td>
<td>Past Surgical History</td>
</tr>
<tr>
<td>POC</td>
<td>Point of care</td>
</tr>
<tr>
<td>PHI</td>
<td>Protected Health Information</td>
</tr>
<tr>
<td>RBC U/A</td>
<td>Red Blood Cells on Urinalysis</td>
</tr>
<tr>
<td>SES</td>
<td>Socioeconomic Status</td>
</tr>
<tr>
<td>SNS</td>
<td>Subjective Numeracy Scale</td>
</tr>
<tr>
<td>STEMI</td>
<td>ST elevation myocardial Infarction</td>
</tr>
<tr>
<td>SAHL-E</td>
<td>Short Assessment of Health Literacy in English</td>
</tr>
<tr>
<td>SAHL-S</td>
<td>Short Assessment of Health Literacy in Spanish</td>
</tr>
<tr>
<td>TEMRAP</td>
<td>Texas Emergency Medicine Research Associate Program</td>
</tr>
<tr>
<td>T1D</td>
<td>Type 1 Diabetes</td>
</tr>
<tr>
<td>TLP</td>
<td>Triage Liaison Provider</td>
</tr>
<tr>
<td>T2D</td>
<td>Type 2 Diabetes</td>
</tr>
<tr>
<td>UNTHSC</td>
<td>University of North Texas, Health science center, Fort Worth</td>
</tr>
<tr>
<td>UTSW</td>
<td>UT Southwestern Medical Center</td>
</tr>
<tr>
<td>UTI</td>
<td>Urinary tract infection</td>
</tr>
<tr>
<td>VAS</td>
<td>Visual Analog Scale</td>
</tr>
<tr>
<td>WBC U/A</td>
<td>White Blood Cells on Urinalysis</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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CHAPTER I

INTRODUCTION

The following practicum report was conducted at the Emergency Medicine Department of UT Southwestern Medical Center (UTSW), Dallas, TX over a period of six months under the mentorship of Dr. Ava Pierce and Shannon McNabb who served as key site mentors. All the teaching, guidelines and instructions were followed under Good Clinical Practice (GCP) as well as good professional conduct. Dr. Stephen Mathew served as the Major Professor and Graduate advisor, & Dr. Caroline Rickards served as a member of my advisory committee from the UNT Health Science Center (UNTHSC). My role in the study was as key personnel and recruiter. Dr. Deborah Diercks from UTSW served as Principle Investigator of the study. The study sponsor was the Department of the Emergency Medicine UTSW. At the start of the internship, the plan was to get extra help in enrolling for the study from the Southwest Texas Emergency Medicine Research Associate Program students (TEMRAP). The study was approved by the UT Southwestern Institutional Review Board (IRB) and UNTHSC IRB. Parkland Memorial Hospital (PMH), affiliated with UTSW, was the performance site for the study.

During this internship project, the association of health literacy and management of Type 2 Diabetes (T2D) was investigated. The Prevalence of T2D is very high in our society. According to the American Diabetes Association, in 2015, over 30 million American adults; which is to say nearly 10% of the population were diagnosed with T2D. Furthermore, T2D is very difficult to manage. Patients with T2D have to follow a very strict, complicated diet and exercise regimen along with medications and instructions to control their blood glucose levels. This requires a carefully monitored plan for the appropriate management of diabetes. If these diet restrictions and exercise regimen are not followed, it often leads to myriad of serious complications such as
peripheral neuropathy, amputations, and renal failure as well as diabetic retinopathy, blindness and even death. As a result, many physicians are analyzing all the possible factors for the lack of adherence to the physician prescribed treatment plan, which leads to negative health outcomes for patients with T2D. One possible factor is low rates of health literacy which may be a reason for lack of adherence. Adequate health literacy is an important factor to achieve compliance with prescription medications given to the patients by physicians for effective management of blood glucose. Furthermore, it is necessary to self-manage chronic T2D and its strict treatment regimen as well as diet and exercise requirements. Health literacy is a crucial key for understanding the importance of compliance to the treatment to prevent long-term complications due to T2D.

Patients with T2D presenting to the Emergency Department (ED) at PMH participated in this prospective study in assessment of health literacy, and recidivism to the ED. The focus of this internship project was the assessment of the health literacy levels of the T2D patient population at Parkland ED, a county hospital, and its association with the rate of recidivism within 30 days. We anticipated that the results would show a significant negative correlation between health literacy, and recidivism, with decreased health literacy associated with increased recidivism. Studies have shown that health literacy and T2D management has a strong positive correlation. A number of tools and surveys have been developed in order to assess health literacy levels. It is very important for patients to be strictly adherent to their prescribed treatment plan in order to maintain normal blood glucose levels and thereby prevent catastrophic complications associated with this disease. Adequate health literacy may help patients take control over their disease and be aware of all the measures that they can take to keep the blood glucose controlled. Low health literacy among T2D patients leads to non-compliance of treatment regimen, and recurrent visits to the ED for problems related to unmanaged glucose control and poor health outcomes.
T2D is a major chronic metabolic disease. A study conducted at (Baker International Diabetes Institute (IDI) Heart and Diabetes institute), in Australia revealed that in the year 2010, world prevalence of diabetes was 6.4%, equating to 285 million adults\(^2\). This number is on a progressive rise and estimated to reach up to 7.7%, affecting 439 million adults with by 2030\(^2\). T2D is more common than T1D. Out of all the diabetic patients, about 90-95% of the patients were diagnosed with T1D\(^2,3\). Unlike T1D, T2D has no deficiency of insulin, but the body cannot use insulin effectively. Insulin is a hormone made by the pancreas that allows your body to use sugar (glucose) from carbohydrates in the food that you eat for energy or to store glucose for future use. Insulin helps keeps your blood sugar level from getting too high (hyperglycemia) or too low (hypoglycemia). It usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce insulin\(^2,3\). The main mechanism behind T2D remains insulin resistance.

Insulin resistance can lead to hyperglycemia, increased blood glucose in the blood, which can lead to blockage of the arteries causing atheroma in various arteries of heart, liver, kidneys and retina. These effects can cause heart disease, stroke, blindness, renal failure and amputations of toes, feet or even legs\(^2,3\). According to the Centre of Disease Control and Prevention, diabetes is the 7\(^{th}\) leading cause of death in the United States\(^3\). It is also the leading cause of renal failure, adult onset blindness and kidney failure.\(^3\) Hemoglobin A1C (HbA1c), low density lipids (LDL) & Body Mass Index (BMI) are known to correlate with several long-term diabetic outcomes\(^2,4\). Effective management of T2D is characterized by a high level of self-care and health education.
T1D patients take insulin for life, whereas in T2D, healthy eating, regular physical activity, as well as regular physician visits to keep a check on disease progression is imperative, along with medications like metformin and/or insulin to control blood glucose. Three blood glucose level checks are to be recorded per day by patients, who are then to adjust their medications accordingly.

Health literacy is a set of skills, and the degrees to which individuals have the capacity to obtain, process and understand basic health information to make appropriate health choices. It is the exchange of health information among patients, providers, health organizations and to the public. Skills required for adequate health literacy should include the following:

- Ability to read and understand written tests
- Locate and interpret information in documents
- Write or complete forms
- Speak and listen effectively
- Communicate about health-related information
- Use numeric information for tasks such as interpreting medication dosages, food labels & blood glucose measurements.

In the USA, it has been estimated that more than 90 million people have basic or below-basic literacy skills, and more than 110 million have poor mathematical skills. Depending on the population sampled, low health literacy among patients with T2D ranged from 15 to 40%. According to the National Assessment of Adult Literacy, over a third of US adults have basic or below basic health literacy (https://health.gov/communication/literacy/issuebrief/) and have difficulty managing common health related tasks. Limited health literacy does pose a great burden on our
society economically\textsuperscript{11}. It is imperative for diabetics to have in depth knowledge about their disease as it requires self-care in addition to strictly adhering to the medications. Therefore, appropriate self-management of T2D requires adequate health literacy which is crucial for understanding of the following:

- Reading labels on prescription medication bottles
- Following written or verbal directions
- Comprehending appointment information
- Reading educational brochures
- Understanding informed consent documents
- Manipulating medication dosing when required
- Navigating health insurance information
- Understanding test results
- Understanding insulin requirement
- Interpreting food labels

Limited health literacy is one factor that can lead to low compliance in taking the medication as directed and following instructions to control hyperglycemia and more adverse health outcomes of T2D\textsuperscript{12}. It is fundamental for patients with T2D to have a good understanding of the signs and symptoms of hyperglycemia and hypoglycemia in order to take care of these events during times of emergency and know how to properly self-administer medicines to control blood glucose levels. Improving health literacy can help improve diabetic outcomes\textsuperscript{13}. The fundamental message throughout the literature is that health literacy is a critical tool to combat chronic diseases, which explains that patient education is at the core of achieving a successful treatment plan.
SPECIFIC AIM

We hypothesized that there will be a strong association between low health literacy and those with T2D who presented to ED with complications of T2D. (Low health literacy is defined as a score of <15 on the short assessment of health literacy (SAHL) scale) 14,15.

**Specific Aim 1.** To assess health literacy of patients who presented to the ED with T2D.

**Hypothesis:** We anticipated that 30% of T2D patients coming to Parkland ED would demonstrate low health literacy.

**Primary outcome:** The prevalence of health literacy among patients with T2D was measured using Short Assessment of Health Literacy-Spanish and English (SAHL)

**Specific Aim 2:** To assess the association between health literacy and 30-day recidivism to the ED due to T2D complications.

**Hypothesis:** Patients with low health literacy were anticipated to revisit the ED more than the patients with adequate health literacy due to poor self-management of T2D.

**Primary Outcome:** Number of visits to the ED due to T2D complications within 30 days of date of enrollment.
SIGNIFICANCE

The relationship between health literacy and management of T2D is of great importance. Although the subjects who participated did not gain any direct benefit from this study, data collected will potentially be of great relevance for developing new interventions and simple tools that may help future patients to self-manage their disease. To manage T2D, including effective control of blood glucose, requires adequate health literacy of T2D patients. Further, the results of this study will help offer a better understanding of the impact of health literacy on chronic disease management and we can explore appropriate interventions aimed at improving self-management. One intervention could be to create appropriate educational materials and help patients with low literacy learn about T2D in more simple ways to help manage this complex disease.
MATERIALS AND METHODS

Research Design & Methodology

This project was a prospective survey study with the collection of Protected Health Information (PHI) and 30-day follow up for ED recidivism involving complications from T2D. Treating Emergency Department (ED) physicians were blinded to patient results. Site approval to conduct this study was obtained from Parkland Memorial Hospital. The study was also approved by the IRB of UT Southwestern (STU 042017-019) and UNTHSC (2017-086).

(a) Recruitment Methods and Consent Process

Direct referral to the recruiter from treating physicians, or prescreening of medical records in EPIC (Parkland’s Electronic medical record system) was used to identify subjects with T2D. In order to access the electronic medical records (EMR) for purposes of prescreening, required waivers of informed consent, and Health Insurance Portability and Accountability Act (HIPAA) authorization were granted from the IRB. Permission was gained from treating physicians and/or clinical staff prior to approaching patients.

Eligibility criteria were confirmed with the patient (See Section D). Informed consent was obtained as well as HIPAA authorization to enable use of the clinical data for the purposes of this research.
(b) Sample size

Assuming an alpha value of .05 and power of 80%, 30% of the subjects were hypothesized to have low literacy, the calculated sample size expected was 400 patients. Due to unavoidable lengthy credentialing process, we were left with very short enrollment period, and so, unfortunately, we were not able to achieve the desired recruitment. A total of 23 subjects were consented and enrolled in the study until we sent the data to biostatistician to analyze it. The study is ongoing.

(c) Data Collection

Patients with T2D were administered a health literacy survey called the Short Assessment of Health Literacy in English and Spanish (SAHL-E & SAHL-S). This tool was developed by Agency for Healthcare Research and Quality (AHRQ-funded) researchers. This tool allows direct comparison of health literacy in speakers of English and Spanish and provides reading comprehension in a medical context. The SAHL-E and SAHL-S consists of 18 commonly used health care terms and was interpreted based on the scores. Each correct answer got one point and a wrong answer got zero. A score less than 15 was considered as limited or low health literacy. For the primary analysis, SAHL-18 questionnaire was categorized into two groups (Low 0-14 versus high 15-18) and summarized as frequency counts and percentages. We also evaluated recidivism to the ED via number of revisits to the ED for T2D complications through EMR for the 30-day follow up period. Only ED visits pertaining to T2D complications were included. Data was collected via:

- Verbal administration of the questionnaires to the subjects
- Electronic Medical Records (EMR)
Demographics

The demographic information collected included:

- Sex
- Age
- Race
- Ethnicity
- Religious Affiliation
- Education
- Current Employment
- Marital Status
- Approximate Household Income
- Insurance Status

(d) Population

The subject population in this study were patients presenting to the Emergency Department of Parkland Memorial hospital with a complication of T2D.

Criteria for Inclusion of Subjects

Patients were considered to be eligible if they met ALL of the following criteria:

- Adults (≥18 years of age)
- Patients diagnosed with T2D
- Spanish or English speaking
- Presenting to ED with T2D complication (See Table 1)
Criteria for Exclusion of Subjects

Patients were excluded for the presence of ANY of the following criteria:

- Aged 17 or younger
- Pregnancy
- Prisoners (Patient chart would always have a note and also the patient was always accompanied by a cop)
- Patients under treatment for cancer
- Patients unable to provide consent (Review of EMR on Epic Psychosis due to dementia, schizophrenia or any other mental illness as well as best clinical judgment based on the attending physicians)
- Patients unable to read and speak in English or Spanish
- Patient with T2D but did not present to ED with diabetic complications
### TABLE 1: Chief complaints due to T2D and/or complications

<table>
<thead>
<tr>
<th>Complaint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyuria (Excessive urination)</td>
</tr>
<tr>
<td>Polydipsia (Excessive thirst)</td>
</tr>
<tr>
<td>Polyphagia (Gain in appetite)</td>
</tr>
<tr>
<td>Blurred vision</td>
</tr>
<tr>
<td>Fatigue</td>
</tr>
<tr>
<td>Non-healing ulcer</td>
</tr>
<tr>
<td>Unexplained weight loss</td>
</tr>
<tr>
<td>Dry itchy skin</td>
</tr>
<tr>
<td>Abdominal pain or flank pain due to renal complications</td>
</tr>
<tr>
<td>Frequent yeast and/or bacterial infections such as UTI</td>
</tr>
<tr>
<td>Chest pain if T2D has associated cardiac complications</td>
</tr>
<tr>
<td>HbA1c levels greater than 8, suggests poorly controlled T2D.</td>
</tr>
<tr>
<td>Hypoglycemia: It is the most common compliant with T2D patients present in ED. Anti-diabetic medicines and Insulin are the major cause for the hypoglycemia.</td>
</tr>
<tr>
<td>Diabetic Ketoacidosis (DKA): presents with uncontrolled hyperglycemia. Metabolic acidosis, increased concentrations ketone bodies. It can be due to inappropriate dosing of insulin or non-adherent to medications and or insulin.</td>
</tr>
<tr>
<td>Short of breath</td>
</tr>
<tr>
<td>Dehydration</td>
</tr>
<tr>
<td>Lightheadedness</td>
</tr>
</tbody>
</table>

These symptoms can be for T1D and T2D, but Diagnosis of T2D was confirmed by reviewing the EMR on EPIC. Patients had to be diagnosed by T2D by their physician in the EMR.
A variety of tools and surveys have been developed in order to determine the level of health literacy and numeracy in individuals. Previous studies have validated the use of the Subject Numeracy Scale (SNS) and Newest Vital Sign test (NVS) as reliable measures of numeracy and health literacy. However, a multitude of other tests have been developed and have also been studied in attempts to develop a standard for measuring health literacy and numeracy. The survey chosen for this study was Short Assessment of Health Literacy in English and in Spanish (SAHL-E and SAHL-S). It is easy and simple to administer and takes less than 5 minutes. It contains 18 test items designed to assess an English-speaking adult or a Spanish-speaking adult’s ability to read and understand common medical terms. This test can help health professionals estimate adult health literacy levels. This test can be administered via the use of flash cards, with each card containing a medical term printed in bold on the top and two association words, the key word and the distractor at the bottom. Correct answers for each test are determined by both pronunciation and accurate association. Flash cards were used in this study, with large bold letters. The patients with vision issues were also able to easily read the flash cards. Each correct answer got one point. For example, the term kidney has a key word urine and a distractor word fever. If the patient chooses “urine” that patient scored one point. Once all the 18 items were answered, all the correct answers were added to create a total SAHL score. A score between 0-14 suggests the patient had limited health literacy.
Potential Risks and Safeguards

There was no risk of injury given the noninvasive nature of this study. However, as with any study, there was chance of unforeseen risks such as inability to recognize the words in the health literacy survey triggering feelings of low self-esteem, and the risk of loss of confidentiality. The risk of loss of confidentiality was minimized by coding the patient’s data with a subject ID and thereby, protecting the patient’s privacy. The link was required for the follow up phase of the study. The study abided by all federal, state and institutional regulations in place governing the protection of human subjects. PHI was protected to the extent allowed by law. Loss of confidentiality was further addressed by making sure only trained and designated study personnel had access to data sheets, and by the use of encryption and storage on a limited access secure computer. Access to data was strictly enforced. Once the dataset is complete, data will be de-identified by deleting the link, via the following process:

- PHI was maintained on a separate secured log linked to subject IDs
- As soon as all follow up data was collected, PHI was redacted on source documents
- Once the final dataset is complete, the PHI log linked to subject IDs will be deleted
Potential Benefits

There were no direct benefits to the subjects in this study. The primary aim of this project was to find out the health literacy levels of Parkland’s T2D ED population. This study shall continue to explore health literacy in T2D patients until the study reaches power to help benefit future T2D patients, which may further lead to clinical trials to identify education methods to assist patients in better management of T2D.

Statistical Plan

Health literacy was assessed among the patients who present to the ED with complications related to T2D. Descriptive statistics such as mean, mode with standard deviations were applied across the following demographics such as age, gender, socioeconomic status, occupation, religious affiliations, education, & race/ethnicity. The data was summarized using a combination of tabulated descriptions (i.e., tables), graphical descriptions (i.e., graphs and charts) and statistical commentary (i.e., a discussion of the results). Fisher’s exact tests was performed because the sample size was small. Differences will be considered statistically significant at $p < 0.05$.

The independent variables assessed were gender, race, etc. This was done to test whether the SAHL score was different between, for example, men vs women, black vs non-black. SAHL was categorized as High ($>=15$) or Low (0-14) then we did a Fisher’s exact test what is a test for categorical data (y/n, high/low, m/f, etc.). We also looked at the SAHL actual numbers (not the two hi/lo categories) which means SAHL was analyzed as a CONTINUOUS Dependent variable and compared, e.g., for male vs female, etc. Since the SAHL is continuous then the unpaired t-test or Wilcoxon Rank sum test can be used.
RESULTS AND DISCUSSIONS

Screening and Enrollment. Forty-nine patients were prescreened over the period of 6 weeks (from late August to early October) via EPIC. Of those prescreened, 20 did not have T2D (see table 2). The other six patients did not meet all the inclusion criteria (See Table 3) and were excluded from the study. The remaining 23 patients with Type 2 Diabetes met all the inclusion criteria to be eligible for participation in the study. One hundred percent of the eligible subjects (23) were consented and enrolled. The total number of subjects (N) enrolled was 23 during the six weeks of enrollment period from August 21 through September 29, 2017. The demographic breakdown of patients enrolled in the study can be found in Table 4.

<table>
<thead>
<tr>
<th>Site</th>
<th>Total # pt. screened</th>
<th>Total # pt. excluded</th>
<th>Total # pt. ineligible</th>
<th>Total # pt. eligible</th>
<th>Total # pt. approached</th>
<th>Total # pt. enrolled</th>
<th>Total # pt. refused</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMH (Parkland Memorial Hospital)</td>
<td>49</td>
<td>20</td>
<td>6</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>0</td>
</tr>
</tbody>
</table>
### TABLE 3

**Reasons why patients were ineligible even though they had T2D**

<table>
<thead>
<tr>
<th>Reason</th>
<th># of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Homeless Type 2 diabetic patient (couldn’t follow up)</td>
<td>(1) 17%</td>
</tr>
<tr>
<td>2. Amharic Type 2 diabetic patient (language exclusion)</td>
<td>(1) 17%</td>
</tr>
<tr>
<td>Didn’t speak English or Spanish</td>
<td></td>
</tr>
<tr>
<td>3. Type 2 Diabetes patient (Homicidal) * Warned by provider</td>
<td>(1) 17%</td>
</tr>
<tr>
<td>4. Type 2 diabetic patient on chemotherapy treatment currently</td>
<td>(1) 17%</td>
</tr>
<tr>
<td>5. Pregnant female with gestational Diabetes</td>
<td>(1) 17%</td>
</tr>
<tr>
<td>6. Schizophrenic with Type 2 diabetes</td>
<td>(1) 17%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>(6) 100%</td>
</tr>
</tbody>
</table>

Information regarding homeless is obtained from their EMR.
Of 49 Pre-screened

29 had T2D

23 Met all Inclusion Criteria

23 Consented

23 Enrolled

FIGURE 1. SCREENING TO ENROLLMENT FLOW CHART
### Table 4: Demographics

#### Table 4. Demographics (N=23)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>23</td>
<td></td>
<td>49.56</td>
<td>9.89</td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>43.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13</td>
<td>56.52</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>N</th>
<th>%</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>6</td>
<td>26.09</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>1</td>
<td>4.35</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>30.43</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>9</td>
<td>39.13</td>
<td></td>
</tr>
</tbody>
</table>
### Education

<table>
<thead>
<tr>
<th>Grade</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 0-8 (Uneducated)</td>
<td>9</td>
<td>39.13</td>
</tr>
<tr>
<td>Some HS (Uneducated)</td>
<td>8</td>
<td>34.78</td>
</tr>
<tr>
<td>HS Diploma/GED</td>
<td>5</td>
<td>21.74</td>
</tr>
<tr>
<td>1-3 years of College</td>
<td>1</td>
<td>4.35</td>
</tr>
</tbody>
</table>

### Religion

<table>
<thead>
<tr>
<th>Religion</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roman Catholic</td>
<td>10</td>
<td>43.48</td>
</tr>
<tr>
<td>Protestant Christian</td>
<td>4</td>
<td>17.39</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>30.43</td>
</tr>
<tr>
<td>No Answer</td>
<td>2</td>
<td>8.70</td>
</tr>
</tbody>
</table>

### Employment Details

<table>
<thead>
<tr>
<th>Employment Details</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>12</td>
<td>52.17</td>
</tr>
<tr>
<td>Unemployed</td>
<td>11</td>
<td>47.83</td>
</tr>
</tbody>
</table>

### Marital Status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>13</td>
<td>56.52</td>
</tr>
<tr>
<td>Never Married</td>
<td>2</td>
<td>8.70</td>
</tr>
<tr>
<td>Sep/Divorced</td>
<td>3</td>
<td>13.04</td>
</tr>
<tr>
<td>Single</td>
<td>3</td>
<td>13.04</td>
</tr>
<tr>
<td>Widow</td>
<td>2</td>
<td>8.70</td>
</tr>
</tbody>
</table>
### Income

<table>
<thead>
<tr>
<th>Household income category</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household income less than 10,000/year</td>
<td>3</td>
<td>13.04</td>
</tr>
<tr>
<td>Household income 10,000 - 29,999/year</td>
<td>10</td>
<td>43.48</td>
</tr>
<tr>
<td>Household income 30,000 - 49,000/year</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Household income 50,000 - 79,000/year</td>
<td>1</td>
<td>4.35</td>
</tr>
<tr>
<td>Household income no Answer</td>
<td>9</td>
<td>39.13</td>
</tr>
</tbody>
</table>

### Insurance status

<table>
<thead>
<tr>
<th>Insurance status</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial health insurance</td>
<td>5</td>
<td>21.74</td>
</tr>
<tr>
<td>Medicaid only</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medicare only</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medicaid and Medicare dual enrolled</td>
<td>1</td>
<td>4.35</td>
</tr>
<tr>
<td>Medicare and commercial insurance dual enrolled</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Uninsured</td>
<td>17</td>
<td>73.91</td>
</tr>
</tbody>
</table>
Demographics

With regard to univariate analysis of the data, the mean age of the 23 subjects enrolled was about 49.56 with a standard deviation of +/- 9.89. Median age was 50, with the range of 26 to 75. Concerning sex, a little over half were males (57%). With regard to race, 26% were black, 39% were white, 4% were Pacific Islander and 30% were classified as Other. Based on the ethnicity, almost 74% identified themselves as Hispanics. Furthermore, 60% spoke Spanish and required the assistance of an interpreter. Forty three percent of the subjects enrolled were Roman Catholic, and all showed adequate health literacy. With regard to education level, 39% had completed grades 0-8, 35% had completed some high school, ~22% had a high school diploma or GED, only 4% had complete 1-3 years of college. Broadly speaking, approximately half of those enrolled (53%) had not completed high school (TABLE 4). Education was skewed to the right. Most of the patient population that presented to Emergency department in the ED at Parkland hospital were uneducated.

Only fifty two percent of the subjects enrolled in the study were employed. Household income ranged from less than $10,000 per year to $79,000 per year. Nearly 39 percent of subjects did not provide information on their annual household income. Concerning the marital status of subjects, only 13.9% were single. As for how subjects covered their healthcare costs, 4% were dual enrolled into Medicaid and Medicare. Approximately 22% had private insurance. The rate of uninsured among the enrolled subjects was nearly 74%. (In summary, most subjects enrolled were White Hispanic Male around the age of 50 who were married, employed, uneducated and underinsured). More than half of the subjects ~57% were below the poverty level

Regarding bivariate analysis, Fisher’s Exact tests for the SAHL (categorical data: two categories being inadequate vs adequate health literacy) for various demographic subgroups was performed.
Fisher exact test was conducted as it is a better test for small sample sizes. Chi square may not be
valid when cell size is too small.

Raw SAHL scores were also compared between subgroups with the Wilcoxon Rank Sum test as a
secondary analysis when continuous data was involved (results not shown); results were similar to
the categorized analysis. Analysis was performed using SAS 9.4 (SAS Institute, Cary, NC, USA)
by Beverly Huet.

From the data that was collected, it was observed that older people were more likely to have
inadequate health literacy. There was about a three-year difference between adequate vs
inadequate health literacy, yet was not statistically significant. There were more males with
inadequate health literacy. Again, it was not statistically significant finding when compared to
females. No significant finding was detected among married and religion demographical
categories.

When we looked across ethnicity i.e. Hispanics vs Non-Hispanics the distribution of SAHL was
50/50. On further breakdown by race, Hispanic whites had more adequate health literacy than
Blacks.
### TABLE 5: SAHL DATA RESULTS

#### SAHL Data Results

<table>
<thead>
<tr>
<th></th>
<th>Total Number</th>
<th>Percent</th>
<th>Perfect Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate Hlit (15 &amp; above)</td>
<td>16</td>
<td>69.56</td>
<td>7</td>
<td>43.75</td>
</tr>
<tr>
<td>Inadequate Hlit (14 and below)</td>
<td>7</td>
<td>30.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The distribution of SAHL scores were skewed to the left (SEE FIGURE 2), suggesting that more than half of the T2D patient population of Parkland Memorial Hospital ED had adequate literacy. However, it should not be ignored that 30% of this population had inadequate health literacy. On average, 800 patients are seen per weekday. Thus, on any given day of the week there may be as many as 240 patients with inadequate health literacy being treated in Parkland’s ED.

Overall, 30% of the subjects demonstrated limited health literacy as hypothesized. The cut off for adequate health literacy is score of 15 and above. The range of score on the SAHL was 4-18, with nearly 70% within the adequate health literacy level (SEE FIGURE 3). The mean score for the SAHL was 15.043 with a standard deviation +/- 3.39. Of those with adequate health literacy, 44% of participants received a perfect score on SAHL.
FIGURE 2: SAHL RAW SCORES FREQUENCY DISTRIBUTION

FIGURE 3: SAHL RAW SCORES FREQUENCY SHOWING SKEWED DISTRIBUTION
A: Overall Percentage of Adequate and Inadequate Health Literacy

- Adequate HLit (15 & above): 30.43%
- Inadequate HLit (14 & below): 69.56%

FIGURE 4: Overall Percentage of Adequate and Inadequate Health Literacy
FIGURE 5: Adequate and Inadequate Health Literacy Among Hispanics
FIGURE 6: Adequate and Inadequate Health Literacy Among Non-Hispanics
The biggest sub-population presenting to Parkland’s ED based on the data, was of Hispanic origin, which was close to 70% of the total subjects. Of those 70% of Hispanics, ~25% had low health literacy based on SAHL scores. In the non-Hispanic sub-population, the distribution of SAHL scores were 50/50 (See Figure 6), with exactly half in the range of inadequate health literacy and the other half in the range of adequate health literacy. It should be noted that all non-Hispanic subjects were of Black race.

ED Recidivism

**TABLE 6: 30 DAY FOLLOW UP**

<table>
<thead>
<tr>
<th># of subjects</th>
<th>30 Day Follow Up report (N=23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed to Follow up</td>
<td>11</td>
</tr>
<tr>
<td>Open to Follow Up</td>
<td>12</td>
</tr>
<tr>
<td>Total (N)</td>
<td>23</td>
</tr>
</tbody>
</table>

Of the eleven subjects that reached the end of the 30-day post discharge follow up period, nearly ten percent of forty seven percent of who completed follow up and had revisited Parkland ED due to poor management of their T2D.

The subject with recidivism data was of special interest to us. In order to gather more details about possible causes for the revisit to ED we analyzed the visit in depth which is summarized in the case report (see Appendix A).
Discussion

The aim of this study was to explore associations between health literacy and management of T2D. Specifically, it was hypothesized that inadequate health literacy would be significantly and inversely related to the self-management of T2D and thus lead to recurrent visits to the ED due to health complications of T2D. Health literacy surveys were verbally administered to patients with T2D who presented to the ED of Parkland Memorial Hospital. This was a prospective observational study.

It was hypothesized, and confirmed that overall, 30% of the T2D patient population seeking treatment in the ED had inadequate health literacy (Aim 1). Results from the study demonstrated that a substantial portion of the patient population was white Hispanic, uninsured & under educated. More males exhibited inadequate health literacy than females, but this difference was not statistically significant. With regard to age, older subjects tended to exhibit inadequate health literacy more than younger subjects, but this difference was not significant either.

According to the data collected, ~30% of the sample demonstrated inadequate health literacy. Assessments of the data across ethnicity ethnic indicated that 25% of Hispanics showed inadequate health literacy, and 50% of non-Hispanics showed inadequate health literacy. It should be noted that racial, all non-Hispanic subject were of Black race. No trends can be concluded about ethnicity because of the confounding of race.
<table>
<thead>
<tr>
<th></th>
<th>Adequate Health literacy</th>
<th>Inadequate Health literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (Males)</td>
<td>8/10</td>
<td>5/13</td>
</tr>
<tr>
<td>Females</td>
<td>8/10</td>
<td>2/13</td>
</tr>
</tbody>
</table>

Although, 70% of the recruited subjects were of adequately health literacy overall, it should not be overlooked that still 30%, which is a substantial number of patients who would show up in the ED with inadequate health literacy. One can speculate that because adequate health literacy was high (with 70% of participants having a score of 15 or higher), differences among groups with inadequate health literacy were difficult to detect. The small sample size also limited statistical power.

Regarding recidivism, ~10% of the 11 subjects revisited the ED due to poor control of T2D. Ten percent does not lack weight in a public hospital that treats over a quarter of a million patients in the ED every year. This may indicate that up to 25,000 patients revisit the ED due to poor self-management of their chronic illness. But we cannot make any conclusions based on our small sample size.

Enough data was not available to detect any significant associations or reject/fail to reject the hypothesis that inadequate health literacy would be significantly and inversely associated with ED recidivism. Activities preparatory to research suggested it may be worthwhile to modify the protocol to extend the follow up period beyond 30 days, and to measure outpatient utilization as well as ED visits during the follow up period. Nearly 37% of the subjects who reached 30 days post discharge period had cancelled or no shows to regular office visits. It is possible, if we gather
more data, that subjects who NO SHOW to office visits will show up in the ED. It may also be important to control for number of outpatient visits to avoid confounding. No show is that patients wouldn’t show up for their regular office visits and will not call for any excuse or to reschedule.

There have been several studies emphasizing the importance of the relationship of health literacy and diabetes management\textsuperscript{4,5,6}. It is of interest that adequate health literacy is fundamental to the self-management of diabetes. Adequate health literacy or diabetes educational material presented at the health literacy of the patient may lead to a deeper understanding regarding the importance of keeping the blood glucose in control and adopting a healthy life style. Some studies\textsuperscript{10,22} demonstrated limited health literacy is associated with recurrent visits to the ED due to T2D complications from poor glucose control. In an article, Berkman et al. 2011 suggest that adequate health literacy may help patients be more aware of their disease status and can help control blood glucose levels to prevent complications. Low health literacy has been linked to non-adherence to treatment plans provided by physicians\textsuperscript{1}. The previous studies showed low health literacy among patients with diabetes, but the current study evaluated health literacy levels in the ED patient population of a county hospital, which was Parkland Memorial Hospital, so we can target and create simpler tools to cater to this population according to their health literacy. Thus, patients with low health literacy levels can learn to better self-manage their disease and be able to prevent complications due to T2D.
SUMMARY AND CONCLUSION

In summary, despite the time constraints of the enrollment period, extended credentialing process, limited assistance from the TEMRAP students, we were able to enroll 23 patients. This study has provided some preliminary data for future studies and interventions. Knowing that a substantial number (30%) of T2D patients visiting the ED of Parkland have inadequate health literacy, will enable us to target this population and educate them to improve their health status and this may mitigate existing health inequalities. It is essential to improve health from a global perspective as well. Health literacy is a tool of empowerment which helps the patient to take control of their health by using all the available health information and services. Health literacy not only leads to a personal benefit to the patient but it also addresses social, environmental and political concerns and issues\textsuperscript{11}. Limited health literacy among T2D patients leads to less utilization of preventive services\textsuperscript{19} and greater use of treatment services, which results in high health care costs. Previous literature shows that there exists a gap in diabetes management and health literacy\textsuperscript{21} There is a plethora of information and literature available, but we need effective communication at the patient’s level of health literacy for it to make a difference. A few recommendations that could be implemented are the use of simple language based principles, such as more pictures to explain things rather than graphs or text.

Finally, given the short duration of the follow up period, it cannot be ascertained whether a 30-day recidivism rate is a true indicator of the association of poor health literacy in the self-management of T2D. Possibly extending the follow up period, collecting more health outcomes (severity of
diabetes, HbA1c, years with the disease, etc.), and resource utilization would allow us to gather more knowledge and a deeper understanding about the association of health literacy and T2D.
LIMITATIONS

Just like many studies, this study also had a few limitations. Some of those limitations were:

**Selection Bias:** The study population was not randomized. In contrast, it was based on convenience sampling of ED patients from Parkland Memorial Hospital. Since subjects were not randomized it was completely based on voluntary participation. It should be noted that this study did not examine causality. However, since an association was being determined, all potential confounding factors needed to be controlled for which is not possible. One possible confounder was time of enrollment. We did not enroll subjects around the clock. These subjects enrolled were during the fixed 8:00 am to 5:00 pm shift and only during the week days. No enrollment occurred on the weekends. This could lead to a totally different population being enrolled, or more employed subjects might be holding on to come see provider all week until they had no choice but to visit the ED.

To help mitigate this bias TEMRAP students were expected to help and recruit around the clock as well as on weekends. Although, during the fall there were more than 100 students, they were not able to enroll subjects into the study due to the lengthy credentialing process. Since most of these students are still in the process of being credentialed, their participation in enrollment was limited to none.

**Confounding:** A confounding factor could be severity of T2D disease. Some subjects probably had the disease for a longer duration than others, with more comorbidities. A few subjects had to take insulin to manage the disease and some had good control with only oral hypoglycemic medications only. HbA1c level can be another confounding factor. We did not assess whether the levels of HbA1c were in control or not. Since we did not collect this information and do not have
this data, we could not control for this.

**Non-response Bias:** The sample in this study may be prone to volunteer bias which is defined as a systematic difference between people who volunteer and those who do not\textsuperscript{20}. It has been reported that, in general, those who participate in studies are more educated, come from a higher social class, and are more sociable than those who do not participate\textsuperscript{19}. Since all 23 subjects with both inadequate and adequate health literacy agreed and willingly participated, this bias was not encountered. However, it may emerge as the study continues and more data is gathered. There were a few subjects with the highest level of education of grade 2-3, they willingly agreed to participate after the study was explained to them. It could be a coincidence or may be some other factor.

**Language bias:** One limitation that we could control to a certain degree was language barrier. Most of the subjects enrolled were of Hispanic origin and Spanish was their primary and preferred language. The SAHL survey used as a measure of health literacy levels was validated in Spanish. Spanish consent forms and HIPAA forms were approved by the IRB. Moreover, interpreters were used to enroll those who only spoke Spanish. To get the interpreter was a challenge. It took hours sometimes, to wait on the interpreter to approach the subject. It was not appropriate to leave the pod and go to approach another potential subject after the nurse had paged the interpreter. This led to often missing other potentially eligible subjects in another pod. Providers and nurses do need interpreters as well and they must get priority.

**ED flow disruption:** This was another limitation that we encountered. At no cost was the emergency care flow to be disrupted, no matter how important any study was, patient care always comes first and has priority over any study. All precautions were taken not to disrupt clinical flow
while recruiting in the ED. Since ED is a busy place with patient flow, so had to wait until the patient is free and physician and nurses are not in the room working with the patient. Sometimes we had to wait to ask the permission to approach the subject as attending physicians and nurses would be busy admitting new patients and/or working with admitted patients.

**Single site:** This study was conducted at a single site, Parkland Memorial Hospital ED. As a result, we cannot generalize the results. Had we conducted the study at Clement’s University Hospital (a private hospital) as well, which is across the street from Parkland, we would have got completely different results, as Clements hospital ED has a different population demographics than Parkland. It is important to note that Parkland has more diverse patient population and accepts all kinds of patients with or without insurance. Thus, generalizability was a limiting factor as results may only be generalizable to other public EDs in large cities with a high Hispanic patient population.

**Recidivism period:** For the study, we had 30 days post discharge for the follow up period to calculate the number of revisits to the ED. A follow up period of 30 days was too short and there may be different results if we could extend the follow up to at least three months.

**Power:** Due to the limited enrollment time period, unfortunately we could not reach the adequate statistical power for the study. Thus, due to not reaching power (target was to enroll 400 to reach power) and other limitations mentioned above, we cannot conclude that health literacy is or is not associated with poor self-management of T2D and the revisits to the ED due to T2D complications. Regardless of these limitations, this study can enhance provider awareness about low health literacy of a sub-population of T2D patients in Parkland ED. When sub-populations contributing to health disparities are identified, they can be targeted with interventions. Taking health literacy into account and creating more appropriate educational materials for T2D patients may help decrease these health disparities and improve health outcomes.
FUTURE DIRECTIONS.

The following modifications are recommended for future studies:

We should modify the IRB protocol to expand fields of data collection so we can control for possible confounding factors such as: HbA1c levels, Duration of disease, Number of comorbidities, Medications (Insulin vs oral hypoglycemic), Severity of the disease. Extend the follow up period from 30 days to 3 months. Enrolling around the clock including the weekends. Possibly including outpatient office visits as well along with ED revisits for recidivism data. Future interventional studies within Diabetic education programs using tailored material according to patient’s health literacy level with follow-up for three months.
REFERENCES


21. Richard. S. Safeer, M.D., CareFirst BlueCross BlueShield, Baltimore, Maryland Jann Keenan, E.D.S., The Keenan Group, Inc., Ellicott City, Maryland


CHAPTER III

INTERNSHIP EXPERIENCE

My research internship practicum was completed at UT Southwestern Medical Center under Dr. Ava Pierce, MD, Associate Professor in Emergency Medicine and Shannon McNabb, MA, MPH, Clinical Research Manager, Research Division, Department of Emergency Medicine at UT Southwestern Medical Center. There were multiple IRB approved clinical trials/studies that were ongoing and quite a few other studies IRB approved were in the pipeline. The following is a list of all the study protocols we could choose from:

1) T2D & Health Literacy
2) A-fib & Anticoagulant Nonadherence
3) Pain Perception Across Providers
4) Chest-Pain Patient Preference for Follow-up Functional Testing
5) Double Paramedic Cost Evaluation

I chose to participate in T2D and Health Literacy study. This study’s Principle Investigator was Dr. Deborah Dierick. Before I could start enrolling the study, first & prime step was completing Parkland Memorial Hospital IRB credentialing process. Completed CITI training with all the modules described below.

- New Drug Development,
- Overview of International Council for Harmonization – GCP
- Comparison of ICH E6 GCP & FDA Regulations
- Overview of US FDA Regulations for Medical Devices
• Informed Consent in Clinical Trials of Drugs, Biologics, and Devices
• Detecting and Evaluating Adverse Events
• Reporting Serious Adverse Events
• Audits and Inspections of Clinical Trials
• IRB Waiver of Authorization
• Limited Data Set
• UT Research Authorization
• How do Researchers Obtain, Create, Use, and/ or Disclose Protected Health Information (PHI)
• Why the Privacy Rule Challenges for Clinical Researchers
• Data Use Agreements and Limited Data Sets-Recruitment for Participation in Research Studies
• Use of PHI for Research on Descendants
• Transition Provisions
• Research Accounting Statements
• Monitoring of Clinical Trials by Industry Sponsors
• Institutional Conflict of Interest training/ acknowledgment for the UTSW IRB.
• I also read the handbook sections for:
  ▪ Financial Conflicts of Interest in Research – Disclosure, Management and Reporting (RES-401)
  ▪ Conflicts of Interest, Conflicts of Commitment, and Outside Activities (ETH-104)
  ▪ Outside Activities (Including Outside Employment or Board Service Policy (EMP-158)
- There were more Parkland training modules pertaining to HIPAA, patient abuse reporting, personal protective equipment (PPE), “Code Green”, reporting agencies such as the DOJ, TXDHHS, and OCR, the Emergency Medical Treatment and Labor ACT (EMTALA), patient rights, fraud, as well as the Anti-Kickback Statute and Stark Law.
- Emergency Operations for 2017 and Abuse & Neglect.

During the six-month period of my internship, I was able to perform the following duties:

1. Attend Meetings:
   a. Weekly Research Team Meetings
   b. Emergency Department Staff Meetings
   c. EM Residency Shark Tank Competition
   d. lecture on *Current Topics in Research Administration*, given by Kim Moreland. Topics covered by Kim touched upon:
      i) Procurement Updates
      ii) Federal Budget Implications
      iii) Indirect Costs
      iv) Single Audit and LOC Draws
      v) R 35 Wards
      vi) Regulatory Reform Ideas

There was a very interesting DISC Survey done that was completed by ED staff including myself. DISC stands for: Dominance, Influence, Steadiness, Conscientious. The conception was to discover how our personalities affect one’s own behavior, and how our behavior affects those around us. Notion behind this activity was that we learn about our own strong personality traits
are, as well as those of our co-workers, and we can adapt to accommodate those around us. I completed my DISC survey as well. A summary of DISC report of each employee was made and compiled together and was shared through email.

2. Research Studies:

- Had an awesome opportunity to participate in a conference call between the Principal Investigators for a new study being conducted at UTSW/ PMH concerning NSTEMI treatment protocols (The study aim was to find out rate of survivability of patients sent to the ICU first and then to Cath Lab if STEMI, or straight to Cath Lab).
- Learned about Protocol Deviations or Violations and Adverse Events
- Learned how to submit new application to IRB
- Entering modification called Mod for a study and submitting to IRB
- Protocol development
- Writing Background Section for a new study
- Organization of regulatory binders
- Organization of Master Book (CV, protection of human subject training certificates)
- Assembling recruitment packet in pdf format for TEMRAP students to keep it down in ED.

“The Association of health literacy with the association of T2D” was conducted during six-months period of internship. My role of responsibilities during this study were as following:

- Making Research Proposal and present it to the advisory committee from both sites UNTHSC For Worth and UT Southwestern Medical Center
- Prescreening for potential subjects via EPIC
- Consent ing and Enrolling Subjects for study
• Make copies for Study Packets
• Complete Subject study folders
• Data entry into electronic data capture
• Tracking data for enrolled subjects in EPIC for one month to do follow up
• Entering data into Velos
• For this study, Spanish versions of the Informed Consent Form as well as the HIPAA Authorization were required. Learnt that when submitting a mod, two versions of the mod need to be submitted: one is the tracked review of the documents showing the modifications made as well as a clean copy of the document. Both should be dated. After a mod has been made, it is submitted to the PI so that it may be submitted to the IRB. Only the PI may submit modified documents to the IRB.

3. Quality Improvement Project (QIP):

Helped Shannon in writing Background section for a QIP which was about how to address the ways to prevent/ reduce the number of patients who walk out of the ED without being seen/ treated. It was proposed that TEMRAP students/ interns could be of great assistance in conducting this study by doing their lobby shifts in a group of four interns in each shift. They would be going to the waiting area of the ED and talk with patients who were waiting to be treated. There was instruction manual for them on what needed to be done while in waiting area. It is anticipated that there would be a concomitant increase in patient satisfaction and might help lower the number of patients who leave ED without seeing Doctor/Physician.
4. VAS (Visual Analog Scale) Study:

This study is about Patient Reported Pain Severity vs. Provider Perception across Race and Ethnicity. Above is a study that uses the VAS, which is a pain scale of smiley faces actually called Visual Analog Scale.

After submitting the QIP Background, another opportunity for another side project was given and I could participate to help Shannon. The study was regarding the VAS Pain Scale Study related to how ED nurses and physicians subjectively interpreted a patient’s level of pain when compared to the patient’s own interpretation of pain level. The study sought to find and address any inherent biases ED staff may have had towards any subpopulations that come into the ED with a chief complaint of pain. My role in this was to take the demographic data and VAS scores from the patient and the corresponding ED staff who treated them and put the data in a coded format into an excel database/spreadsheet format. This is to facilitate for a biostatistician to read the clean, clear raw data for further analysis.

5. ESESTT study and the ACCES study.

ESETT, A Multicenter, Randomized, Blinded, Comparative Effectiveness Study of Fosphenytoin, Valproic Acid, or Levetiracetam in the Emergency Department Treatment of Patients with Benzodiazepine-refractory Status Epilepticus. ACESS is ACCESS to the cardiac catheterization laboratory in patients without ST-segment elevation myocardial infarction resuscitated from out-of-hospital ventricular fibrillation cardiac arrest.

There were another couple of studies ongoing and I had the privilege to sit in the research team meetings while talking over enrollment progress, modifications required for informed consent during emergencies when patient is not able to give consent.
Another important part of discussion for these studies was Community Consultation Plan (CCP). This is done on major social events such as Asian fests or Spanish community fests where ED put up the booth and distribute brochures about these studies and take surveys from general public to find out their opinion about these studies. They are also given the opportunity to opt out as well.

6. STEMI Study

Participated and completed introduction and data abstractor training session for the study *The Influence of Time-to-Diagnosis on Time-to-Treatment for STEMI Patients*. A multicenter-retrospective cohort study. The PI for the study is Dr. Maya Yiadom of the Emergency Medicine Department at Vanderbilt University. The study looked at data from seven different medical facilities across the country for the years 2014-2016 (review of electronic health records for STEMI ED patients). The specific aim of the study was to determine the effect the time-to-diagnosis has on time-to-treatment for STEMI patients as it relates to patient survival up to one year post STEMI. The study “will quantify the differences in the diagnosis-to-treatment interval,” in the two patient populations. working through a patient’s chart to extract information for the STEMI study. Practicing looking through EPIC required some intuition and kind of digging and trying to get in more depth of patient’s charts to extract information what is required for the study. There were 9 instruments used to gather patient data: i) Hospitalization ii) Demographics iii) Emergency Department iv) Electrocardiograms v) Past Medical History vi) Initial Laboratory Results vii) STEMI Intervention viii) Ejection Fractions ix) Follow-up. The main sections required were the EKG diagnosis times and the time to the CATH-Lab timings and provider’s notes. After gathering the information into packets, enter the respective information into RedCap.
It took much practice to get efficient at locating the requisite information in Epic. It was imperative to get all source documents printed from where the data was extracted.

7. TEMPRAP FALL ORIENTATION:

I also had an opportunity to participate and helped Gail in process of conducting orientation for fall students. Attended all the presentations given to TEMRAP students by Dr. Ava Pierce, Shannon McNabb, Mario Puente, Gail Bennett and Khushbakht Bakhshi. CPR training was also demonstrated to TEMRAP students. I gave tour of ED to one group of TEMRAP students.
A typical day at internship site would start by checking emails on my computer. In the beginning, couple of months went by in completing credentialing process for UT Southwestern and Parkland Memorial Hospital. During this time, I did some literature review on my study. Once fully credentialled, got ready to enroll, majority of day would go by making copies for new study packets for T2D and Health literacy. I would prescreen the patients in EPIC and then would approach all potential subjects. If interested would get their consent and enroll. Rest of the day would go by back to office from ED scoring the SAHL for each enrolled subject, entering enrolled subject into velos, uploading collected data into data spread sheet for further analysis from biostatistician. I would be doing other clinical research coordinator tasks and responsibilities asked by Shannon and these daily tasks were only interrupted by our weekly research team meetings, ED staff meetings, Huddle room meetings to hold few immediate discussions session.
APPENDIX A: CASE REPORT

CASE REPORT

On EPIC, a 52 years old male, 5’10’tall, weighing 83.9Kg (185lbs) & BMI of 26.6 with T2D presented to ED with chief complaints of blurry vison and dizziness. On admission, his Blood glucose level was 220 and HgA1C was 9%. Social history also included former heavy cigarette smoker (one pack/day) for 20 years, former heavy drinker (~12 pack beer/ day). Quit both smoking and drinking in 1992 after he had an episode of massive GI bleed and almost went into coma. No history of any drug use. Subject was unemployed and single. Past medical history was significant for Type 2 Diabetes Mellitus, Hypertension, Vision problems. Past surgical history included history of orthopedic surgery & Cholecystectomy. The subject was prescreened for the eligibility of Health literacy study. All the inclusion criteria had been met for enrollment. Subject was approached, consented and enrolled in the study. Subject also had other comorbidities associated as well. He had been recently diagnosed with Syphilis. The medication list for the subject was extensive. Medications were reviewed in ED and were as follows:

AmLopidine 5mg x 1 tablet by mouth Once a Day

Aspirin 81mg x Chewable

Blood Sugar Test Strips x To check blood glucose Twice a Day

Insulin Glargin (Lantus Solostar) 100 units/mL (3mL) Insulin Pen x 20 Units a Day

Lancets x Use as Directed

Latanoprost 0.005% ophthalmic solution x 1 Drop in affected eye daily at bedtime

Lisinopril 100mg x 1 Tablet by mouth Once a Day

Metformin 1000mg Tablet x Twice Daily
Subject was given treatment and was discharged with strict instructions to take the prescribed medications and keep control of the blood glucose. We tracked the subject via EPIC and discovered that he returned to the ED. The latest visit presented with Type 2 Diabetic with chief complaints of Hematuria (blood in urine), dysuria (pain or burning during urination) with urination and worsening of vision problems. Subject also had left side flank pain. Further labs were ordered for kidney function tests in addition to Blood glucose and HgA1c levels.

Diagnosis made by ED providers was UTI with Poorly controlled T2D with HgA1c> 8%.

On labs

POC Glucose was abnormal. Blood Glucose level was 238.

Basic Metabolic Panel was abnormal:

Blood Glucose random 268

Chloride was 97

HgA1c was 10.4%

Results of Urinalysis:

Glucose UA abnormal and were more than 1000

Ketones 40

Specific Gravity 1.035

Blood UA large

Proteins 100

Urinalysis Automated LC, Micro Only

RBC UA >900

WBC UA 342

POC Urine Dip Only
POC Bilirubin UA Large
POC Ketones UA 15
POC Proteins >300
POC Nitrite positive
POC Leukocytes Large

Radiologically:

- B/L Non-Specific Perinephric Fat Stranding suggesting infection & Cirrhotic Liver

Subject got treatment for UTI and was given Ciprofloxacin HCL 500mg Tablet Twice a day (BID) x 20 tablets. Discharge form also included a note of strict instructions from provider and stressed the importance of taking prescription medicines as instructed. Subject had been provided Dietary instructions as follows:

1. Check your blood sugar daily and keep a log
2. Try to eat a variety of foods - especially high fiber foods like vegetables, whole fruits, whole grains, beans, and low-fat meats (chicken, turkey, fish)
3. Add one non-starchy veggie to your meals to help with fiber - think broccoli, green beans, spinach, lettuce, carrots, cauliflower. Plain frozen veggies are quick and good options!
4. Watch your portion sizes like we discussed today.
5. Stop drinking sugary drinks like sweet tea, soda, juice. Look for "diet", "Zero", or "Sugar Free" versions.
6. Do not use sugar -- use a sugar substitute instead like Splenda, Sweet & Low, Equal or Truvia (stevia)
7. Do not use salt or salty seasonings (like marinades, bouillon cubes, soy sauce, garlic salt or onion salt -- use spices and seasonings to season food.
8. Limit fats and cholesterol (butter, oil, fried foods, egg yolks, fatty meats)

9. Do not eat fried foods -- find foods that are grilled/baked/steamed/broiled/boiled

10. Start exercising at least 3-5 days a week for at least 15 to 30 minutes.

The patient was encouraged to attend Diabetic education classes, schedule weekly office visit, and keep checking for any sore ulcers in feet. Subject was discharged.

From the case history, clearly, subject is not following the instructions provided by the physician to control the blood glucose levels to effectively manage his T2D, thus ending up in ED with new or worsening complications of T2D. Should we say subject didn’t follow treatment regimen voluntarily or it could be that subject actually had no knowledge about the disease and its complications? He was provided with all the instructions and guidance on medicine use. Then what could be the reason that he kept coming back to ED and was not able to self-manage his diabetes? The subject showed adequate health literacy scores on SAHL, this however is a true indication that there is a gap between knowledge and implementation. Top six causes of mortality are High Blood Pressure, Tobacco use, High Glucose, Physical inactivity, Obesity, High Cholesterol. All these causes together account for more than 40% of deaths according to the World Health Organizations (WHO). Most of the factors mentioned are risk factors for having diabetes. The subject in the case report had most of the risk factors for his T2D. As a result of these developments, people are being given the greater responsibility to take care of their own health and make healthy choices. This can only be possible by bridging the gap by communicating effectively. Health literacy is an important factor in ensuring better health outcomes. Low health literacy has a greater failure to seek preventive measures and increased risk of hospitalizations leading to higher annual costs. Burden of health literacy is not only on the individual and not just patient’s responsibility. Health care providers, Physicians, and health care system should all work
together to incorporate precise, clear, consistent and more efficient ways to communicate. We must aspire to create a system which consists of best ways to navigate or assure patient understanding so they can make best health choices.
APPENDIX B: DATA SHEET

DATA COLLECTION SHEET

Subject Number ____________________________

Name ________________________________

MRN ________________________________

DOB ________________________________

Date of ED Visit ____________________________

Presenting Complaint/s

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Diagnoses ________________________________

30 Day Follow Up Date ________________ No. of Revisits ______

HLIT Score ________________________________

NVS Score ____________ ________________
Health Literacy in Type 2 Diabetes (T2D) Enrollment Checklist

INCLUSION CRITERIA

☐ Y ☐ N  Aged 18 or above
☐ Y ☐ N  Patient diagnosed with T2D
☐ Y ☐ N  Presenting to ED for treatment of a diabetes complication
☐ Y ☐ N  Non-prisoner
☐ Y ☐ N  Not pregnant
☐ Y ☐ N  Provides verbal consent
☐ Y ☐ N  Spanish or English speaking

EXCLUSION CRITERIA

☐ Y ☐ N  Aged 17 or younger
☐ Y ☐ N  Presenting to ED for a problem not related to T2D
☐ Y ☐ N  Pregnancy
☐ Y ☐ N  Prisoners
☐ Y ☐ N  Patients under treatment for cancer
☐ Y ☐ N  Patients unable to provide consent
CONSENT TO PARTICIPATE IN RESEARCH

Title of Research: The Association of Health Literacy and Numeracy with the Management of Type 2 Diabetes

Funding Agency/Sponsor: UT Southwestern Medical Center
Department of Emergency Medicine

Study Doctor: Deborah Diercks, MD

You may call these study doctors or research personnel during regular office hours at 214-648-3918. At other times, you may page them at 214-786-6678

Instructions:
Please read this consent form carefully and take your time making a decision about whether to participate. As the researchers discuss this consent form with you, please ask him/her to explain any words or information that you do not clearly understand. The purpose of the study, risks, inconveniences, discomforts, and other important information about the study are listed below. If you decide to participate, you will be given a signed copy of this form to keep.

Why is this study being done?
This study is being done to determine the level of health literacy and numeracy in patients with Type 2 Diabetes. Health literacy is the degree to which people have the ability to understand basic health information and services needed to make right health decisions. Numeracy is the ability to understand and work with numbers. We would like to find out if levels of health literacy and numeracy affect a patient’s ability to manage their Type 2 Diabetes.

Why am I being asked to take part in this research study?
You are being asked to take part in this study because you have Type 2 Diabetes.

How many people will take part in this study?
About 1000 people will take part in this study at Clements University Hospital, or Parkland Health & Hospital System.
What is involved in the study?
If you agree to be in this study, you will be asked to sign this consent form as well as a HIPAA authorization form and will be verbally asked questions from the following surveys:
- Patient Demographic Form
- Short Assessment of Health Literacy
- Newest Vital Sign

How long can I expect to be in this study?
It should take less than 15 minutes to complete these surveys. You and your doctor will not be given the results of these surveys. This is all you are required to do for this research study. We, however, will continue to monitor your electronic medical records for one month, just to see if you return to the ED for treatment of your Type 2 Diabetes.

You can choose to stop participating for any reason at any time.

What are the risks of the study?
Any time information is collected; there is a potential risk of loss of confidentiality. Every effort will be made to keep your information confidential; however, this cannot be guaranteed.

What are the possible benefits of this study?
If you agree to take part in this study, there may not be direct benefits to you. The researchers cannot guarantee that you will benefit from participation in this research.
We hope the information learned from this study will benefit others with Type 2 Diabetes in the future. Information gained from this research could lead to better tools to help patients self-manage the disease.

What options are available if I decide not to take part in this research study?
This is not a treatment study. You do not, have to be part of it to get treatment for your condition.

Will, I be paid if I take part in this research study?
No. You will not be paid for participating in this research study.

Will my insurance provider or I be charged for the costs of any part of this research study?
No. Neither you, nor your insurance provider, will be charged for anything done only for this research study (i.e., the Screening Procedures, Experimental Procedures, or Monitoring/Follow-up Procedures described above).
However, the standard medical care for your condition (care you would have received whether or not you were in this study) is your responsibility (or the responsibility of your insurance provider or governmental program). You will be charged, in the standard manner, for any procedures performed for your standard medical care.

What will happen if I am harmed as a result of taking part in this study?
It is important that you report any illness or injury to the research team listed at the top of this form immediately.

Compensation for an injury resulting from your participation in this research is not available from the University of Texas Southwestern Medical Center at Dallas, Clements University Hospital, or Parkland Health & Hospital System.

You retain your legal rights during your participation in this research

**Can I stop taking part in this research study?**
Yes. If you decide to participate and later change your mind, you are free to stop taking part in the research study at any time.

If you decide to stop taking part in this research study, it will not affect your relationship with the UT Southwestern staff or doctors. Whether you participate or not will have no effect on your legal rights or the quality of your health care.

**Will my information be kept confidential?**
Medical information collected during this study and the results of any test or procedure that may affect your medical care may be included in your medical record. The information included in your medical record will be available to health care providers and authorized persons including your insurance company.

You should know that certain organizations that may look at and/or copy your medical records for research, quality assurance, and data analysis include:

- Research administrators and auditors from this hospital
- The UT Southwestern Institutional Review Board

**Whom do I call if I have questions or problems?**
For questions about the study, contact Dr. Diercks at 214-648-3918 during regular business hours and page her at 214-786-6678 after hours and on weekends and holidays.

For questions about your rights as a research participant, contact the UT Southwestern Institutional Review Board (IRB) Office at 214-648-3060.
SIGNATURES:

YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

Your signature below certifies the following:

• You have read (or been read) the information provided above.
• You have received answers to all of your questions and have been told who to call if you have any more questions.
• You have freely decided to participate in this research.
• You understand that you are not giving up any of your legal rights.

____________________________________________
Name of Participant (Printed)

____________________________________________
Signature of Participant  Date  Time

____________________________________________
Legally Authorized Representative’s Name (Printed)

____________________________________________
Legally Authorized Representative’s Signature  Date  Time

____________________________________________
Name of Person Obtaining Consent (Printed)

____________________________________________
Signature of Person Obtaining Consent  Date  Time
CONSENTIMIENTO PARA PARTICIPAR EN UNA INVESTIGACIÓN

Título de la investigación: Relación de la alfabetización en salud y las habilidades numéricas con el control de la diabetes tipo 2

Agencia de financiamiento/patrocinador: UT Southwestern Medical Center
Departamento de Medicina de Emergencia

Médica del estudio: Dra. Deborah Diercks

Puede comunicarse con esta médica del estudio o con el personal de la investigación durante el horario normal de atención llamando al 214-648-3918. Fuera de ese horario, puede solicitar que lo comuniquen con ellos llamando al 214-786-6678.

Instrucciones:
Lea detenidamente este formulario de consentimiento y tómese el tiempo para decidir si desea participar. Cuando los investigadores hablen con usted sobre este consentimiento, pídale que le expliquen cualquier palabra o información que no entienda claramente. A continuación, se detallan el propósito del estudio, los riesgos, las molestias y otra información importante acerca del estudio. Si decide participar, se le entregará una copia firmada de este formulario para que la conserve.

¿Por qué se realiza este estudio?
Este estudio se realiza para determinar el nivel de alfabetización en salud y las habilidades numéricas en pacientes con diabetes tipo 2. La alfabetización en salud es la medida en que las personas pueden comprender la información médica básica y los servicios necesarios para tomar las decisiones correctas en cuanto a su salud. Las habilidades numéricas son las capacidades para comprender y manejar los números. Deseamos averiguar si el grado de alfabetización en salud y de habilidades numéricas afecta la capacidad del paciente para controlar la diabetes tipo 2.

¿Por qué me piden participar en este estudio de investigación?
Se le solicita que participe en este estudio porque usted tiene diabetes tipo 2.

¿Cuántas personas participarán en este estudio?
Participarán aproximadamente unas 1,000 personas en este estudio que se realizará en Clements University Hospital o Parkland Health & Hospital System.
¿Qué implica el estudio?
Si acepta participar en este estudio, se le pedirá que firme este formulario de consentimiento y un formulario de autorización de la Health Insurance Portability and Accountability Act (Ley de Responsabilidad y Transferibilidad de Seguros Médicos o HIPAA, por sus siglas en inglés), y que responda verbalmente preguntas de las siguientes encuestas:
- Formulario demográfico del paciente
- Breve evaluación de la alfabetización en salud
- Signos vitales más recientes

¿Cuánto tiempo se espera que dure mi participación en este estudio?
Completar las encuestas le tomará menos de 15 minutos. No se le darán los resultados de las encuestas ni a usted ni a su médica. Eso es lo único que se le solicita hacer para este estudio de investigación. Sin embargo, seguiremos controlando su expediente médico electrónico durante un mes, solamente para saber si volvió a acudir al Departamento de Emergencias (ED, por sus siglas en inglés) para el tratamiento de la diabetes tipo 2.

Usted puede elegir dejar de participar por cualquier motivo y en cualquier momento.

¿Cuáles son los riesgos del estudio?
Siempre que se recopila información, existe el posible riesgo de la pérdida de confidencialidad. Se hará todo lo posible para preservar la confidencialidad de su información; sin embargo, esto no puede garantizarse.

¿Cuáles son los posibles beneficios de este estudio?
Si acepta participar en este estudio, es posible que no haya beneficios directos para usted. Los investigadores no pueden garantizar que usted se beneficie de la participación en esta investigación.
Esperamos que la información obtenida en este estudio beneficie en el futuro a otras personas con diabetes tipo 2. La información obtenida de esta investigación podría permitir el desarrollo de mejores herramientas para ayudar a los pacientes a controlar la enfermedad de forma independiente.

¿Qué opciones tengo si decido no participar en este estudio de investigación?
Este no es un estudio de tratamiento. Usted no está obligado a participar en este estudio para recibir tratamiento médico por su enfermedad.

¿Me pagarán si participo en este estudio de investigación?
No. Usted no recibirá ninguna remuneración por participar en este estudio de investigación.

¿Le cobrarán a mi compañía de seguros o a mí por alguna parte de este estudio de investigación?
No. Ni usted ni su compañía de seguros tendrán que pagar nada de lo que se realiza en el estudio de investigación (es decir, procedimientos de selección, procedimientos experimentales o procedimientos de supervisión/seguimiento descritos anteriormente).

Sin embargo, la atención médica estándar para su afección (atención que hubiese recibido aunque
no hubiera participado en este estudio) es su responsabilidad (o la responsabilidad de su compañía de seguros o programa gubernamental). A usted le cobrarán, como se hace normalmente, todo procedimiento que se realice de acuerdo con su atención médica habitual.

¿Qué sucede si me enfermo o me lesiono como consecuencia de mi participación en este estudio?
Es importante informar inmediatamente acerca de cualquier enfermedad o lesión al equipo encargado de esta investigación cuyo nombre aparece al inicio de este formulario.

No se encuentra disponible ninguna indemnización por daños que resulten de su participación en esta investigación por parte de University of Texas Southwestern Medical Center en Dallas, Clements University Hospital o Parkland Health & Hospital System.

Usted conserva sus derechos legales durante su participación en esta investigación.

¿Puedo dejar de participar en este estudio de investigación?
Sí. Si decide participar y luego cambia de opinión, tiene plena libertad de dejar de participar en este estudio de investigación en cualquier momento.

Su decisión de dejar de participar en este estudio de investigación no afectará su relación con el personal de UT Southwestern ni con los médicos. Su decisión de participar o no en el estudio no afectará de manera alguna sus derechos legales ni la calidad de la asistencia médica que reciba.

¿Se resguardará la confidencialidad de mi información?
La información médica obtenida durante este estudio y los resultados de todo examen o procedimiento que pudiera afectar su atención médica podrían incluirse en su expediente médico. La información incluida en su expediente médico estará a disposición de los proveedores de atención médica y de las personas autorizadas, incluida su compañía de seguros.

Usted debe saber que ciertas organizaciones pueden ver o copiar su expediente médico con fines de investigación, control de calidad y análisis de datos. Estas son:

- Administradores y auditores de investigación de este hospital.
- La UT Southwestern Institutional Review Board (Junta de Revisión Institucional de UT Southwestern o IRB, por sus siglas en inglés).

¿A quién debo llamar si tengo preguntas o algún problema?
Si tiene preguntas sobre el estudio, comuníquese con la Dra. Diercks llamando al 214-648-3918 durante el horario de atención habitual, o solicite hablar con ella llamando al 214-786-6678 fuera de ese horario, los fines de semana y días festivos.

Si tiene preguntas sobre sus derechos como participante de una investigación, comuníquese con la oficina de la Institutional Review Board (IRB) de UT Southwestern llamando al 214-648-3060.

FIRMAS:
RECIBIRÁ UNA COPIA DE ESTE FORMULARIO DE CONSENTIMIENTO PARA QUE LA CONSERVE.

Su firma a continuación certifica lo siguiente:

- Ha leído (o le han leído) la información proporcionada arriba.
- Ha recibido respuestas a todas sus preguntas y le han indicado a quién llamar si tiene más preguntas.
- Ha decidido participar voluntariamente en esta investigación.
- Entiende que no renuncia a ninguno de sus derechos legales.

____________________________________________
Nombre del participante (en letra de imprenta)

____________________________________________
Fecha  Hora

Firma del participante

____________________________________________
Nombre del representante legalmente autorizado (en letra de imprenta)

____________________________________________
Fecha  Hora

Firma del representante legalmente autorizado

____________________________________________
Nombre de la persona que obtiene el consentimiento (en letra de imprenta)

____________________________________________
Fecha  Hora

Firma de la persona que obtiene el consentimiento

APPENDIX F: HIPAA AUTHORIZATION FORM – ENGLISH
Authorization for Use and Disclosure of Health Information for Research Purposes

NAME OF RESEARCH PARTICIPANT: ________________________________________

What is the purpose of this form?
This authorization describes how information about you and your health will be used and shared by the researcher(s) when you participate in the research study: The Association of Health Literacy and Numeracy with the Management of Type 2 Diabetes (“Research Project”). Health information is considered “protected health information” when it may directly identify you as an individual. By signing this form, you are agreeing to permit the researchers and other others (described in detail below) to have access to and share this information. If you have questions, please ask a member of the research team.

Who will be able to use or share my health information?
Parkland Health and Hospital System and Clements University Hospital may use or share your health information with Deborah Diercks, MD and her staff at UT Southwestern Medical Center (“Researchers”) for the purpose of this research study.

Will my protected health information be shared with someone other than the Researchers?
Yes, the Researchers may share your health information with others who may be working with the Researchers on the Research Project (“Recipients”) for purposes directly related to the conduct of this research study or as required by law. These other people or entities include:

- Research administrators and auditors of this hospital.
- The UT Southwestern Institutional Review Board (IRB). This is a group of people who are responsible for assuring that the rights of participants in research are respected. Members and staff of the IRB at UT Southwestern may review the records of your participation in this research. A representative of the IRB may contact you for information about your experience with this research. If you do not want to answer their questions, you may refuse to do so.

How will my health information be protected?
Whenever possible your health information will be kept confidential as required by law. Federal privacy laws may not apply to other institutions, companies or agencies collaborating with UT Southwestern on this research project. There is a risk that the Recipients could share your information with others without your permission. UT Southwestern cannot guarantee the confidentiality of your health information after it has been shared with the Recipients.
What health information will be collected, used and shared (disclosed)?
The Researchers will collect:
- Name
- Date of Birth
- Medical Record Number
- Date of today’s Emergency Department visit and your diagnoses
- Dates of Emergency Department visits and your diagnoses over the next month

Will my health information be used in a research report?
Yes, the research team may fill out a research report. (This is sometimes called “a case report”.)
The research report will not include your name, address, or telephone or social security number.
The research report may include your date of birth, initials, dates you received medical care and a tracking code. The research report will also include information the research team collects for the study.

Will my health information be used for other purposes?
Yes, the Researchers and Recipients may use your health information to create research data that does not identify you. Research data that does not identify you may be used and shared by the Researchers and Recipients in a publication about the results of the Research Project or for other research purposes not related to the Research Project.

Do I have to sign this authorization?
No, this authorization is voluntary. Your health care providers will continue to provide you with health care services even if you choose not to sign this authorization. However, if you choose not to sign this authorization, you cannot take part in this Research Project.

How long will my permission last?
This authorization has no expiration date. You may cancel this authorization at any time. If you decide to cancel this authorization, you will no longer be able to take part in the Research Project. The Researchers may still use and share the health information that they have already collected before you canceled the authorization. To cancel this authorization, you must make this request in writing to:

Deborah Diercks, MD
UT Southwestern Medical Center
Department of Emergency Medicine
5323 Harry Hines Blvd, E4.300
Dallas, TX 75390-8579

Will, I receive a copy of this authorization?
Yes, a signed copy of this authorization will be provided to you.
**Signatures:**

By signing this document, you are permitting UT Southwestern Medical Center to use and disclose health information about you for research purposes as described above.

______________________________  ____________________________  Time: AM/PM
Signature of Research Participant    Date

**For Legal Representatives of Research Participants (if applicable):**

Printed Name of Legal Representative: ______________________________
Relationship to Research Participant: ______________________________

I certify that I have the legal authority under applicable law to make this Authorization on behalf of the Research Participant identified above. The basis for this legal authority is:

______________________________________________________________________________

(e.g. parent, legal guardian, person with legal power of attorney, etc.)

______________________________  ____________________________  Time: AM/PM
Signature of Legal Representative    Date
APPENDIX G: HIPAA AUTHORIZATION FORM – SPANISH

The University of Texas Southwestern Medical Center
Parkland Health & Hospital System
Children’s Medical Center
Retina Foundation of the Southwest
Texas Scottish Rite Hospital for Children
Texas Health Presbyterian Hospital Dallas

Autorización para el uso y la divulgación de información médica con fines de investigación

NOMBRE DEL PARTICIPANTE DE LA INVESTIGACIÓN:

¿Cuál es el propósito de este formulario?
Esta autorización describe de qué manera los investigadores utilizarán y compartirán la información sobre usted y su salud cuando participe en el estudio de investigación: Relación de la alfabetización en salud y las habilidades numéricas con el control de la diabetes tipo 2 (“Proyecto de investigación”). La información médica se considera “información médica protegida” cuando con ella es posible identificarlo a usted personalmente. Al firmar este formulario, usted autoriza que los investigadores y otras personas (descritas en detalle a continuación) tengan acceso y compartan esta información. Si tiene preguntas, consulte con un miembro del equipo de investigación.

¿Quiénes podrán utilizar o compartir mi información médica?
Parkland Health and Hospital System y Clements University Hospital pueden utilizar o compartir su información médica con la Dra. Deborah Diercks y con el personal del UT Southwestern Medical Center que colabora con ella (los “Investigadores”) para la realización de este estudio de investigación.

¿Mi información médica protegida se compartirá con alguien, además de los Investigadores?
Sí, los Investigadores pueden compartir su información médica con otras personas o entidades que trabajen con ellos en el Proyecto de investigación (“Destinatarios”) para fines directamente relacionados con la realización de este estudio de investigación o según lo estipule la ley. Esas otras personas o entidades incluyen las siguientes:

- Administradores y auditores de investigación de este hospital.
- La Institutional Review Board (Junta de Revisión Institucional o IRB, por sus siglas en inglés) de UT Southwestern. Es un grupo de personas responsables de garantizar que se respeten los derechos de los participantes en la investigación. Los miembros y el personal de la IRB de UT Southwestern pueden revisar los registros de su participación en esta investigación. Un representante de la IRB podría comunicarse con usted para obtener información sobre su experiencia con esta investigación. Usted puede negarse a responder a sus preguntas si así lo desea.
¿Cómo se protegerá mi información médica?
Siempre que sea posible, su información médica se mantendrá confidencial, según lo estipulado por ley. Las leyes federales sobre privacidad podrían no aplicarse a otras instituciones, empresas o agencias que colaboran con UT Southwestern en este Proyecto de investigación. Existe el riesgo de que los Destinatarios compartan su información con terceros sin su permiso. UT Southwestern no puede garantizar la confidencialidad de su información médica después de que se haya compartido con los Destinatarios.

¿Qué información médica se recopilará, usará y compartirá (se divulgará)?
Los Investigadores obtendrán la siguiente información:
- Nombre
- Fecha de nacimiento
- Número de expediente médico
- La fecha de su visita al Departamento de Emergencias del día de hoy, y sus diagnósticos
- Las fechas de sus visitas al Departamento de Emergencias durante el próximo mes, y sus diagnósticos

¿Mi información médica se utilizará en un informe de investigación?
Sí, el equipo de investigación podría elaborar un informe de investigación. (Esto a veces se denomina “informe de caso”). El informe de investigación no incluirá su nombre, dirección, número de teléfono ni número de seguro social. El informe de investigación podría incluir su fecha de nacimiento, sus iniciales, las fechas en las que recibió atención médica y un código de seguimiento. El informe de investigación también incluirá la información que el equipo de investigación recopile para el estudio.

¿Se utilizará mi información médica con otros fines?
Sí, los Investigadores y los Destinatarios podrán utilizar su información médica para crear datos relativos a la investigación con los que usted no pueda ser identificado. Los Investigadores y los Destinatarios pueden utilizar y compartir datos de la investigación que no revelen su identidad en una publicación sobre los resultados del Proyecto de investigación, o con otros fines de investigación no relacionados con este Proyecto de investigación.

¿Debo firmar esta autorización?
No, esta autorización es voluntaria. Sus proveedores de atención médica continuarán proporcionándole servicios de atención médica aunque usted decida no firmar esta autorización. Sin embargo, si decide no firmar esta autorización, no podrá participar en este Proyecto de investigación.

¿Cuánto tiempo durará mi autorización?
Esta autorización no tiene fecha de vencimiento. Usted puede cancelarla en cualquier momento. Si decide cancelar esta autorización, ya no podrá participar en el Proyecto de investigación. Los Investigadores podrían utilizar y compartir su información médica recopilada antes de que usted cancelara la autorización. Para cancelar esta autorización, debe enviar la solicitud de cancelación por escrito a:
Deborah Diercks, MD
UT Southwestern Medical Center
¿Recibiré una copia de esta autorización?
Sí, se le proporcionará una copia de esta autorización.

Firmas:

Al firmar este documento, usted autoriza a UT Southwestern Medical Center a utilizar y divulgar su información médica con fines de investigación, según lo descrito anteriormente.

Firma del participante de la investigación   Fecha   Hora: a. m./p. m.

Para los representantes legales de los participantes de la investigación (si corresponde):

Nombre del representante legal en letra de imprenta: ________________________________
Relación con el participante de la investigación: ________________________________

Certifico que tengo autoridad legal conforme a la ley pertinente para otorgar esta autorización en nombre del participante de la investigación identificado anteriormente. La base de esta autoridad legal es:

__________________________________________________________
(p. ej., padre, madre, tutor legal, persona con poder notarial legal, etc.)

____________________
Firma de representante legal
Patient Demographics

<table>
<thead>
<tr>
<th>Gender:</th>
<th>□ Male</th>
<th>□ Female</th>
<th>Age: ______________</th>
</tr>
</thead>
</table>

What is the patient’s race?

- □ White
- □ Chinese
- □ Vietnamese
- □ Other Pacific Islander
- □ Black or African American
- □ Filipino
- □ Other Asian
- □ Native Hawaiian
- □ American Indian or Alaska Native
- □ Japanese
- □ Guamanian or Chamorro
- □ Other
- □ Asian Indian
- □ Korean
- □ Samoan
- □ No Answer

What is the patient’s ethnicity?

- □ Not of Hispanic, Latino/a, or Spanish origin
- □ Hispanic Puerto Rican
- □ Hispanic Mexican, Mexican American, or Chicano/a
- □ Other Hispanic, Latino, or Spanish origin
- □ Hispanic Cuban
- □ No Answer

What is the patient’s religious affiliation?

- □ Protestant Christian
- □ Evangelical Christian
- □ Other ______________
- □ Jewish
- □ Muslim
- □ Buddhist
- □ Roman Catholic
- □ No Answer
- □ Hindu

What is the patient’s education? (Please check the box that corresponds to the highest level completed.)

- □ Grades 0-8
- □ 1-3 years college
- □ No Answer
- □ Some High School
- □ College Degree
- □ HS Diploma /GED
- □ Post Graduate Degree

Is the patient currently employed? □ Yes □ No

What is the patient’s marital status?

- □ Never Married
- □ Widowed
- □ No Answer
- □ Separated/Divorced
- □ Married

What is the patient’s approximate household income?

- □ Less than 10,000/year
- □ 10,000-29,999/year
- □ 30,000-49,999/year
- □ 50,000-79,000/year
- □ 80,000-99,999/year
- □ 100,000-129,999/year
- □ 130,000/year or above
- □ no answer

Insurance Status:

- □ Medicaid
- □ Medicare
- □ Veteran
- □ Commercial (Private Ins.)/Obamacare
- □ Uninsured (Self-Pay)

APPENDIX I: SAHL-E SURVEY
<table>
<thead>
<tr>
<th>Stem</th>
<th>Key or Distracter</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. kidney</td>
<td>__urine __fever __don't know</td>
<td></td>
</tr>
<tr>
<td>2. occupation</td>
<td>__work __education __don't know</td>
<td></td>
</tr>
<tr>
<td>3. medication</td>
<td>__instrument __treatment __don't know</td>
<td></td>
</tr>
<tr>
<td>4. nutrition</td>
<td>__healthy __soda __don't know</td>
<td></td>
</tr>
<tr>
<td>5. miscarriage</td>
<td>__loss __marriage __don't know</td>
<td></td>
</tr>
<tr>
<td>6. infection</td>
<td>__plant __virus __don't know</td>
<td></td>
</tr>
<tr>
<td>7. alcoholism</td>
<td>__addiction __recreation __don't know</td>
<td></td>
</tr>
<tr>
<td>8. pregnancy</td>
<td>__birth __childhood __don't know</td>
<td></td>
</tr>
<tr>
<td>9. seizure</td>
<td>__dizzy __calm __don't know</td>
<td></td>
</tr>
<tr>
<td>10. dose</td>
<td>__sleep __amount __don't know</td>
<td></td>
</tr>
<tr>
<td>11. hormones</td>
<td>__growth __harmony __don't know</td>
<td></td>
</tr>
<tr>
<td>12. abnormal</td>
<td>__different __similar __don't know</td>
<td></td>
</tr>
<tr>
<td>13. directed</td>
<td>__instruction __decision __don't know</td>
<td></td>
</tr>
<tr>
<td>14. nerves</td>
<td>__bored __anxiety __don't know</td>
<td></td>
</tr>
<tr>
<td>15. constipation</td>
<td>__blocked __loose __don't know</td>
<td></td>
</tr>
<tr>
<td>16. diagnosis</td>
<td>__evaluation __recovery __don't know</td>
<td></td>
</tr>
<tr>
<td>17. hemorrhoids</td>
<td>__veins __heart __don't know</td>
<td></td>
</tr>
<tr>
<td>18. syphilis</td>
<td>__contraception __condom __don't know</td>
<td></td>
</tr>
</tbody>
</table>
The 18 items of SAHL-S, rank-ordered according to item difficulty (keys and distracters are listed in the same random order as in the field interview).

**SAHL-E keys**

<table>
<thead>
<tr>
<th>kidney</th>
<th>urine</th>
<th>fever</th>
<th>don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>occupation</td>
<td>work</td>
<td>education</td>
<td>don’t know</td>
</tr>
<tr>
<td>medication</td>
<td>instrument</td>
<td>treatment</td>
<td>don’t know</td>
</tr>
<tr>
<td>nutrition</td>
<td>healthy</td>
<td>soda</td>
<td>don’t know</td>
</tr>
<tr>
<td>miscarriage</td>
<td>loss</td>
<td>marriage</td>
<td>don’t know</td>
</tr>
<tr>
<td>infection</td>
<td>plant</td>
<td>virus</td>
<td>don’t know</td>
</tr>
<tr>
<td>alcoholism</td>
<td>addiction</td>
<td>recreation</td>
<td>don’t know</td>
</tr>
<tr>
<td>pregnancy</td>
<td>birth</td>
<td>childhood</td>
<td>don’t know</td>
</tr>
<tr>
<td>seizure</td>
<td>dizzy</td>
<td>calm</td>
<td>don’t know</td>
</tr>
<tr>
<td>dose</td>
<td>sleep</td>
<td>amount</td>
<td>don’t know</td>
</tr>
<tr>
<td>hormones</td>
<td>growth</td>
<td>harmony</td>
<td>don’t know</td>
</tr>
<tr>
<td>abnormal</td>
<td>different</td>
<td>similar</td>
<td>don’t know</td>
</tr>
<tr>
<td>directed</td>
<td>instruction</td>
<td>decision</td>
<td>don’t know</td>
</tr>
<tr>
<td>nerves</td>
<td>bored</td>
<td>anxiety</td>
<td>don’t know</td>
</tr>
<tr>
<td>constipation</td>
<td>blocked</td>
<td>loose</td>
<td>don’t know</td>
</tr>
<tr>
<td>diagnosis</td>
<td>evaluation</td>
<td>recovery</td>
<td>don’t know</td>
</tr>
<tr>
<td>hemorrhoids</td>
<td>veins</td>
<td>heart</td>
<td>don’t know</td>
</tr>
<tr>
<td>syphilis</td>
<td>contraception</td>
<td>condom</td>
<td>don’t know</td>
</tr>
<tr>
<td>Stem</td>
<td>Key or Distracter 1</td>
<td>Key or Distracter 2</td>
<td>&quot;No sé&quot;</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------</td>
</tr>
<tr>
<td>1. empleo</td>
<td>__trabajo</td>
<td>__educación</td>
<td>__No sé</td>
</tr>
<tr>
<td>2. convulsiones</td>
<td>__mareado</td>
<td>__tranquilo</td>
<td>__No sé</td>
</tr>
<tr>
<td>3. infección</td>
<td>__mata</td>
<td>__virus</td>
<td>__No sé</td>
</tr>
<tr>
<td>4. medicamento</td>
<td>__instrumento</td>
<td>__tratamiento</td>
<td>__No sé</td>
</tr>
<tr>
<td>5. alcoholismo</td>
<td>__adicción</td>
<td>__recreo</td>
<td>__No sé</td>
</tr>
<tr>
<td>6. riñón</td>
<td>__orina</td>
<td>__fiebre</td>
<td>__No sé</td>
</tr>
<tr>
<td>7. dosis</td>
<td>__dormir</td>
<td>__cantidad</td>
<td>__No sé</td>
</tr>
<tr>
<td>8. aborto espontáneo</td>
<td>__pérdida</td>
<td>__matrimonio</td>
<td>__No sé</td>
</tr>
<tr>
<td>9. estreñimiento</td>
<td>__bloqueado</td>
<td>__suelto</td>
<td>__No sé</td>
</tr>
<tr>
<td>10. embarazo</td>
<td>__parto</td>
<td>__niñez</td>
<td>__No sé</td>
</tr>
<tr>
<td>11. nervios</td>
<td>__aburrido</td>
<td>__ansiedad</td>
<td>__No sé</td>
</tr>
<tr>
<td>12. nutrición</td>
<td>__saludable</td>
<td>__gaseosa</td>
<td>__No sé</td>
</tr>
<tr>
<td>13. indicado</td>
<td>__instrucción</td>
<td>__decisión</td>
<td>__No sé</td>
</tr>
<tr>
<td>14. hormonas</td>
<td>__crecimiento</td>
<td>__harmonía</td>
<td>__No sé</td>
</tr>
<tr>
<td>15. abnormal</td>
<td>__diferente</td>
<td>__similar</td>
<td>__No sé</td>
</tr>
<tr>
<td>16. diagnóstico</td>
<td>__evaluación</td>
<td>__recuperación</td>
<td>__No sé</td>
</tr>
<tr>
<td>17. hemorroides</td>
<td>__venas</td>
<td>__corazón</td>
<td>__No sé</td>
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<tr>
<td>18. sífilis</td>
<td>__anticonceptivo</td>
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</table>
SAHL-S keys

<table>
<thead>
<tr>
<th>Stem</th>
<th>Key or Distractor</th>
<th>Key or Distractor</th>
<th>Key or Distractor</th>
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</thead>
<tbody>
<tr>
<td>empleo</td>
<td>trabajó</td>
<td>educación</td>
<td>no se</td>
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<tr>
<td>convulsiones</td>
<td>mareado</td>
<td>tranquilo</td>
<td>no se</td>
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<tr>
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<td>mata</td>
<td>virus</td>
<td>no se</td>
</tr>
<tr>
<td>medicamento</td>
<td>instrumento</td>
<td>tratamiento</td>
<td>no se</td>
</tr>
<tr>
<td>alcoholismo</td>
<td>adicción</td>
<td>recreo</td>
<td>no se</td>
</tr>
<tr>
<td>riñón</td>
<td>orina</td>
<td>fiebre</td>
<td>no se</td>
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<tr>
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<td>dormir</td>
<td>cantidad</td>
<td>no se</td>
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<tr>
<td>aborto espontáneo</td>
<td>pérdida</td>
<td>matrimonio</td>
<td>no se</td>
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<td>no se</td>
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<td>no se</td>
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<td>aburrido</td>
<td>ansiedad</td>
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<td>sifilis</td>
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</table>
Instructions for Administering SAHL-E

Here are directions for using SAHL-E with flash cards, as described earlier. The subjects should not be shown the whole list at one time.

Directions to the Interviewer:

Before the test, the interviewer should say to the examinee:

“I’m going to show you cards with 3 words on them. First, I’d like you to read the top word out loud. Next, I’ll read the two words underneath and I’d like you to tell me which of the two words is more similar to or has a closer association with the top word. If you don’t know, please say ‘I don’t know’. Don’t guess.”

Show the examinee the first card.

The interviewer should say to the examinee:

“How, please, read the top word out loud.”

The interviewer should have a clipboard with a score sheet to record the examinee’s answers. The clipboard should be held such that the examinee cannot see or be distracted by the scoring procedure.

The interviewer will then read the key and distracter (the two words at the bottom of the card) and then say:
“Which of the two words is most similar to the top word? If you don’t know the answer, please say ‘I don’t know’.”

The interviewer may repeat the instructions so that the examinee feels comfortable with the procedure.

Continue the test with the rest of the cards.

A correct answer for each test item is determined by both correct pronunciation and accurate association. Each correct answer gets one point. Once the test is completed, the interviewer should tally the total points to generate the SAHL-E score.

A score between 0 and 14 suggests the examinee has low health literacy.
Instruction for Administering SAHL-S

Here are directions for using SAHL-S with flash cards, as described earlier. The subjects should not be shown the whole list at one time.

Directions to the Interviewer:

Before the test, the interviewer should say to the examinee:

"Le voy a mostrar tarjetas con 3 palabras en ellas. Primero, me gustaría que usted lea la palabra arriba en voz alta. Entonces, yo leeré las dos palabras debajo a usted y me gustaría que usted me dijera cuál de las dos palabras es más similar a la palabra arriba. Si usted no sabe la respuesta, por favor diga, ‘No sé’. No adivine."

Show the examinee the first card.

The interviewer should say to the examinee:

“Ahora, por favor, lea la palabra arriba en voz alta.”

The interviewer should have a clipboard with a score sheet to record the examinee’s answers. The clipboard should be held such that the examinee cannot see or be distracted by the scoring procedure. The interviewer will then read the key and distracter (the two words at the bottom of the card) and then say:

“Cuál de las dos palabras es más similar a la palabra arriba? Si usted no sabe la respuesta, por favor diga, ‘No sé’.

The interviewer may repeat the instructions so that the examinee feels comfortable with the procedure.

Continue the test with the rest of the cards.

A correct answer for each test item is determined by both correct pronunciation and accurate association. Each correct answer gets one point. Once the test is completed, the interviewer should tally the total points to generate the SAHL-S score.

A score between 0 and 14 suggests the examinee has inadequate health literacy.
Kidney

Urine  Fever
Occupation

Work

Education
Medication

Instrument    Treatment
Nutrition

Healthy Soda
Miscarriage

Loss

Marriage
Infection

Plant       Virus
Alcoholism

Addiction

Recreation
Pregnancy

Birth

Childhood
Seizure

Dizzy

Calm
Dose

Sleep

Amount
Hormones

Growth

Harmony
Abnormal

Different

Similar
Directed

Instructions

Decision
Nerves

Bored       Anxiety
Constipation

Blocked

Loose
Diagnosis

Evaluation

Recovery
Hemorrhoids

Veins

Heart
Syphilis

Contraception

Condom
empleo

Trabajo

educación
Convulsiones

Mareado  tranquilo
Infección
Mata virus
medicamento

instrumento

tratamiento
Alcoholismo

Adicción

recreo
Riñón

orina  fiebre
Dosis

dormir   cantidad
aborto
espontáneo
pérdida    matrimonio
Estreñimiento

Bloqueado

suelto
Embarazo

Parto  niñez
Nervios

Aburrido  ansiedad
Nutrición

Saludable  gaseosa
Indicado

Instrucción    decisión
Hormonas

Crecimiento

harmonía
Abnormal

Diferente

similar
Diagnóstico

evaluación

recuperación
Hemorroides

Venas  corazón
Sífilis

anticonceptivo

condón
Parkland EM Residency 20th Anniversary

1998-1999
37,000 sq ft
89 patient care spaces
87,018 Total ED Patients
21.2% Admission Rate
20 EM Faculty members
9 major resuscitation rooms
270 patients seen every 24 hours

2016
78,000 sq ft
258,047 Total ED Patients
25% Admission Rate
Over 70 EM Faculty members and growing
12 major resuscitation rooms
700-800 patients seen every 24 hours on weekdays
400-500 patients seen every 24 hours on weekends

Thank you for celebrating the 20th anniversary of our residency. As I hear stories about how things used to be in the beginning of our program, I am proud of the rapid trajectory this program has made. Despite all the changes that have occurred over the years, there are a few things that have remained consistent. First is the unwavering dedication to clinical care of every single patient that crosses our many doors, while providing education to all of our learners. I unequivocally state that our residency produces excellent Emergency Physicians. That is reflected in thousands of patient encounters seen by our alumni group every year. Second is the resiliency of our residents. Our residents can handle many disasters we have faced—continued to maintain a sense of family within the residency. Every graduate of our program is part of our Parkland/UTSW family. It is the sense of family that makes this program unique and why this celebration is so special. To all of you, thanks so much for being an integral part of our 20-year history.

Eborah Diercks, M.D.
Professor and Chairman of Emergency Medicine
Dr. Larissa Velez, Program Director 2012-current

Dr. Velez obtained a Bachelor degree in Sciences from the University of Puerto Rico. She finished Medical School in 1996 and went on to pursue training in Emergency Medicine, also at the University of Puerto Rico. She moved to Dallas in 1999 in order to train in Toxicology. After finishing her fellowship training, she stayed to work full time as faculty at Parkland Memorial Hospital and UT Southwestern, Dallas. During her fellowship, she also completed the coursework for a Masters Degree in Public Health from UT Houston. Currently, Dr. Velez is involved with the EM Training Program as the Program Director. She also is a clinical toxicology staff at the North Texas Poison Center.
Spotlight on: Dr. Pepe

Dr. Pepe is an extremely distinguished academian, with over 400 full-length published scientific papers, including many landmark publications. His programs have resulted in some of the highest cardiac arrest and trauma survival rates worldwide. He is known for his original measurements of physiological mechanisms (eg. Auto-PEEP), intrepid clinical concepts (eg. deferred rescue breaths in CPR), and ground-breaking clinical trials. Published years ago by Dr. Pepe & colleagues, these studies are now part of mainstream medical practice and research.

Many of his numerous studies, injury prevention programs and media interactions have consistently affected public policy and legislation. Helping to set national priorities for cardiac and trauma resuscitation research, the NIH formally designated his EM program at UT as a federally-funded resuscitation research center in 2004, a very successful program that continued throughout his entire tenure as the division chair of Emergency Medicine.

Spotlight on: Dr. Broders

"I have been involved in some form or fashion with the residency since its inception. Probably the memory most emblazoned on my brain was the July when EM residents finally ran the Parkland Emergency Department. The R2's did a fabulous job! They validated the worth of the concept of training in EM. Prior to that time the "PR Boss" was an R2 IM on the "Medicine" side and an R2 Surgery resident on the "Surgery" side. Another fond memory was not a single one but rather a compilation of many involving incredible camaraderie of the residents and physicians in the ED I have been impressed with the fact that, with almost no exceptions, the residents and faculty have been smart, hard working physicians who were a lot of fun to be around.

It took several tries to establish a residency. There were at least two failed attempts. It failed for several reasons. We had too many sponsors and we had non-ABEM faculty. Internal Medicine and Surgery were very much against EM. The first to crack was Surgery when they were put on probation because their residents spent too much time in the ED. Consequently, EM became a division of Surgery. IM persisted in opposition until they also were put on probation for similar reasons. EM in general is strong primarily because it is a problem-solving specialty and the specialty has broadened with age. Challenge for the future is the challenge of a faltering healthcare system. Locally challenges relate to improved efficiency and improved morale amongst the doctors and nurses in the emergency department.

Spotlight on: Dr. Riggs

As we all know, ABEM was not approved as the 23rd specialty Board until September 1979. About 1982, a UT-SWMS student named Keezel Youngblood called on me to give him advice regarding an EM residency and career because he could not find anyone on the faculty to advise him about a career in EM. He eventually went to Emory for his EM residency. This story reflects the attitude of the traditional specialties at my alma mater ignoring the advent of Emergency Medicine as a specialty. I started my interest in EM by working in the Parkland ED for a summer job in 1967 as a "suture student" and the senior physicians present in the PMH ED then were the R-2's from IM and Surgery! In the late 1980's, I began to ask advisors to Southwestern such as Paul Bass about whether an EM residency could be done, and it went nowhere, for quite some time. By the way, I was trying to see if Baylor would form one, and there was no interest there either. Others such as Compton Broders worked on this as well, but nothing happened until Jim Hayes somehow convinced Kern Wildenthal to consider supporting a residency in EM. It took Jim and Kern several years of negotiating, but they finally made some progress, and the section of EM was born under the Department of Surgery. After the many years of the "Powers that Be" not wanting EM at all, you could have knocked me over with a feather! Around 1996, Jim Hayes came to see me regarding supporting a Chair in EM. This was necessary for the head of the EM group and for the residency chief to have funds for support of research and teaching and training. Jim did a great job or recruiting early faculty members and new residents. The program suffered two faculty untimely deaths of Jim Hayes and Michael Wainscott, but the program continued well under the new energetic leadership of Paul Pepe and has thrived ever since to become one of the best in the US. The graduates of this program are perceived to be some of the best from any program, and I am proud to have been associated with it, even though others did all of the work to make this such a fine program.
Above: Current chief residents, from left: William Musgrave, Kesia Nguyen, Max Hockstein, Amanda Opfer, Ricky Williams

Above: Classes 2017, 2018, and 2019
Left: Class of 2020 interns at annual pool party

Follow us and stay connected at dallasem.org and @dallasemed

Dr. Sarah Beadle, a graduate from Parkland/UTSW Emergency Medicine residency, passed away this summer. She was 38 years old and served as an EM physician at Baylor Emergency Medical Center in Keller.

“She was a wonderful mother to Clint (2005), Laura (2007), Patrick (2009), James (2013) and Andrew (2015). Whenever she was not working, she was spending time with her kids. Sarah loved traveling with her family and enjoyed sharing all of her adventures with her family and friends.”

Please contribute here to provide some support during an incredibly challenging time for the Beadle Family: https://www.youcaring.com/thefiveyoungchildrenofdrssarahbeadle-957594
Background

Emergency Department is the most complicated and difficult setting of all hospitals. A patient coming to ED have common expectations, that is to be seen and get treatment as early as possible with no to minimum wait time. Ideally ED should be able to triage patients in timely manner and able to provide appropriate intervention with quality of care that is needed. But this is not the case in modern times. ED across the countries are expecting the high volume of the patients that is leading to ED crowding as well as less resources to manage this significantly increasing volume. ED problem is complex and challenging problem for health care system worldwide. ED crowding is very important factor in situation where patients leave without being seen (LWBS) and can negatively impact upon staff and patient satisfaction. This further adds to more ED wait time that causes potentially harmful delays in providing care that is needed and urgent. Crowding results from the Input which is the increased patient volume and throughput and output stressors like ED boarding, inpatient capacity constraints. Throughput represents the patient care from ED arrival to disposition. It is the factor that is most under greatest control of ED. Therefore, most of the interventions have focused on throughput optimization. As the waiting time increases LWBS rate increases. The Parkland has suffered from patient overflow that impacted ED patients with lingering wait times and unsatisfied patient care due to inefficiency in the Management of ED system. This is area of interest to many physicians to improve the quality of care in ED by reducing the wait time and come up with improved and efficient ways. Several studies have done where
physicians tried to incorporate the role of triage liaison provider (TLP). The TLP works to expedite and initiate the work up of patients especially those of higher acuity. It also helps to identify and rapidly assisting those of lower acuity, who can be cared for without an official ED treatment space. Many studies have focused on interventions such as early discharge of patients who can safely go home from the inpatient units to create beds for ED during high traffic times when overflow dominating the resources of ED for better patient care. This paper describes how assigning a TEMRAP students just to listen and talk to the waiting patients and comforting them can help lower the incidence of patients LWBS.
From: David Karp  
Institutional Review Board Chairperson  
IRB 00000974; IRB - BB43
To: Deborah Diercks, Shannon McNabb
Date: Wednesday, April 19, 2017
Re: Study Approval
IRB Number: STU 042017-019
Title: The Association of Health Literacy and Numeracy with Management of Type 2 Diabetes
Documents: Protocol, Consent Form, HIPPA, and All Smartform Attachments

The UT Southwestern Institutional Review Board (IRB) reviewed the above-referenced research study via an expedited review procedure on Wednesday, April 19, 2017 in accordance with 45 CFR 46.110(a)-(b)(1). Having met all applicable requirements, the research study is approved for a period of 12 months. The approval period for this research study begins on Wednesday, April 19, 2017 and lasts until Wednesday, April 18, 2018.

Having met all regulatory criteria outlined in 45 CFR 164.512, the IRB also approved a waiver of authorization for the release of protected health information for this study.

The research study cannot continue beyond the approval period without continuing review and approval by the IRB. In order to avoid a lapse in IRB approval, the Principal Investigator must apply for continuing review of the protocol and related documents before the expiration date. A reminder will be sent to you approximately 90 days prior to expiration of research study approval.

The approved number of subjects to be enrolled is 1000. The IRB considers a subject to be enrolled once s/he signs a Consent Form. If additional subjects are needed, you must first obtain permission from the IRB to increase the sample size.

If you have any questions related to this approval letter or about IRB policies and procedures, please telephone the IRB Office at 214-648-3060.
General Instructions

To maintain IRB approval in good standing, please observe the following requirements:

1. All subjects must sign the consent form before undergoing any research study procedures, including screening procedures. A photocopy of the signed consent form(s) should be given to each participant. The copy of the consent form(s) bearing original signature(s) should be kept with other records of this research for at least six years past the completion of the research study.

2. A photocopy of the signed HIPAA Authorization should be given to each participant. A copy of the HIPAA Authorization bearing original signatures should be kept with other records of this research for at least six years past the completion of the research study.

3. Obtain prior IRB approval for any modifications including addition of new recruiting materials, changes in research personnel or site location, sponsor amendments or other changes to the protocol or associated documents. Only those changes that are necessary to avoid an immediate apparent hazard to a subject may be implemented without prior IRB approval.

4. Report all adverse events, protocol violations, and study closures promptly to the IRB.

5. Make study records available for inspection. All research-related records and documentation may be inspected by the IRB for the purpose of ensuring compliance with UT Southwestern policies and procedures and federal regulations governing the protection of human subjects. The IRB has authority to suspend or terminate its approval if applicable requirements are not strictly adhered to by all research study personnel.

6. If the IRB has approved the use of an oral presentation of informed consent information in conjunction with a short form written consent document (stating that the elements of consent have been presented orally), when enrolling subjects who do not speak or read English, a witness to the oral presentation is required, and the subject must be given copies of the short form document and the summary. When this procedure is used (1) the oral presentation and the short form written document should be in a language understandable to the subject; (2) the IRB-approved English language informed consent document may serve as the summary; and (3) the witness should be fluent in both English and the language of the subject. At the time of consent, (1) the short form document should be signed by the subject (or the subject’s legally authorized representative); (2) the summary (i.e., the English language informed consent document) should be signed by the person obtaining consent as authorized under the protocol; and (3) the short form document and the summary should be signed by the witness. When the person obtaining consent is assisted by a translator, the translator may serve as the witness.

7. When enrolling subjects who do not speak or read English, a bilingual translator must be available to facilitate communications between research personnel and a subject.

Warning: This is a private message for authorized UT Southwestern employees only. If the reader of this message is not the intended recipient you are hereby notified that any dissemination, distribution or copying of this information is STRICTLY PROHIBITED.

University of Texas Southwestern Medical Center
Institutional Review Board
5323 Harry Hines Boulevard
Dallas, Texas 75390-8843
Phone: 214-648-3060
Fax: 214-648-2171

APPENDIX: IRB TO ADD SAMITA KUMAR
From: Waley Hua  
Institutional Review Board  
IRB - 8843  

To: Deborah Diencks, Shannon McNabb  

Date: Tuesday, June 27, 2017  

Re: Modification Approval  

IRB Number: STU 042017-019  

Modification Number: Mod1_STU 042017-019  

Title: The Association of Health Literacy and Numeracy with Management of Type 2 Diabetes  

A modification to the above referenced study regarding changes to study personnel has been approved by the UT Southwestern Institutional Review Board (IRB) via an expedited review procedure on Tuesday, June 27, 2017 in accordance with 45 CFR 46.110(a)-(b)(2). The approval period for the modified research study will begin on Tuesday, June 27, 2017 and lasts until Wednesday, April 18, 2018.  

If you have any questions related to this approval letter or about IRB policies and procedures, please telephone the IRB Office at 214-648-3060.  

Warning: This is a private message for authorized UT Southwestern employees only. If the reader of this message is not the intended recipient you are hereby notified that any dissemination, distribution or copying of this information is STRICTLY PROHIBITED.
### T2DM and Health Literacy

#### Adequate vs Inadequate SAHL AGE Descriptive statistics

**The MEANS Procedure**

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-3 year difference between adequate vs inadequate HL, p=0.50  
mean (SD)  
Inadequate: age= 51.7 (6.8)  
Adequate: age = 48.6 (11.1)
### T2DM and Health Literacy

**I-test comparing means**

**The TTEST Procedure**

**Variable: Age**

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### Equality of Variances

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<td></td>
</tr>
<tr>
<td>Total</td>
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<td>22</td>
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<tr>
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<td>72.73</td>
<td>100.00</td>
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Frequency Missing = 1

Distribution of SAHL_0_18 by BlackorHisp

The FREQ Procedure
T2DM and Short Assessment of Health Literacy (SAHL) Demographics & SAHL -- frequency counts

The FREQ Procedure

<table>
<thead>
<tr>
<th>Table of SAHL_0_18 by Gender</th>
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<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>SAHL_0_18</td>
</tr>
<tr>
<td>0-14 Low</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total</td>
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Distribution of SAHL_0_18 by Gender
APPENDIX M: Daily Journal/Week 1

Day 1: May 30, 2017/Tuesday

First day at the internship site started with meeting Shannon McNabb, the site mentor and my fellow intern Sean Harla at the visitor parking lot. I want to start my journal saying thank you to Shannon for meeting us at the parking lot to assist us in getting to know the new place. So, she started our day familiarizing us with the campus and office building. She introduced us to the staff from finance division, education division and her research division. She acclimatized us around the office. We got our own cubicles to sit and work. After all the initial introduction Shannon held a short meeting in the conference room. She explained the responsibilities of her work she does and how the whole staff contributes to it. She has to manage the whole staff and assign them with respective work and make sure it is done within the time limits. She also talked about Parkland and Clement Hospitals that they are collaborated with recruiting patients for studies. Both are great hospitals and we can choose to go to either of them as both are accredited for the clinical trials. Shannon also showed us how to use PeopleSoft submit the request for how to credential someone to do research at UTSW. Also got exposed to how she everyday takes care of her list to do and emails that require urgent attention such as emails from IRB that came back as unapproved protocols. So that would require completing the form and do the changes asked by IRB so that it can be send back and get oy approved. Important point I learned was that once the changes were made to the protocol as required by IRB Shannon told us that she cannot send this mail directly to IRB. Only PI can send it so email along with screen shot was forwarded to PI notifying that the changes have made so it can be send to IRB at their earliest convenience.

Met Dr. Ava at lunch time. It was great to see her and we all had another conference meeting together. Dr. Ava and Shannon discussed the potential studies and gave us heads up to start
thinking which one we would like to choose for our internship practicum. Dr. Ava took us for lunch at the Faculty Club. It was wonderful to connect with them. Thanks to Dr. Ava for treating us the first day with lovely lunch. Lastly, we had meeting with Dr. Andrea Blomkalins late afternoon. She talked about her study she is planning on doing. She told us she is going to first get new approval for IRB as she made changes to her study. Right after the meeting Mario Puente gave us a 2-hour tour of Parkland hospital ED. That was the pretty much the end of the day. All together it was exciting and learning day. They have awesome staff and coworkers. Loved my first day. Thanks again to Shannon and Dr. Ava for making it perfect first day of internship.

Day2: May 31, 2017 /Wednesday

This was the second day at the internship site. We are still waiting on getting our ID badges and laptops to work on. They have been ordered. Started the day with a staff conference meeting. Learned how Shannon distributed the new industry upcoming studies among the project manager and clinical data specialist. There were around four studies. Shannon emailed all the clinical trials that can be done and to choose from. So, went over the protocols for each one. Studied each one of them and trying to shortlist the ones I am really interested. Shannon has offered to help us out as a role playing for the consent form. So that is really cool and I believe it will help out a lot in not only choosing the study but also in learning how to take the informed consent. Which is a process not a document to sign only. We are still waiting on getting our badges. Since the office has badge entry so every time we have to go use the restroom Shannon would accompany so we can reenter the building. I think this is so kind of her even though I feel it is inconvenient for her :) She is awesome. Loved my second day at work. Looking forward to coming days and learning more.
Day3: June 01, 2017/Thursday

Thursday morning, Sean and I attended the shark tank competition among residents presenting their research ideas to get funding. There were 6 presentations. Dr. Ava and Shannon were there with us. Two of Dr. Ava medical students presented on the project study by Dr. Ava and Shannon. Shannon McNabb had short presentation explaining how she can help the new residents in research. It was great experience to attend that seminar of shark tank competition to hear about new research proposals from UT Southwestern EM Residents. The following were the proposed topics presented by their respective resident:

**TABLE 7: SHARK TANK RESEARCH PROPOSAL TOPICS**

<table>
<thead>
<tr>
<th>Resident</th>
<th>Faculty sponsor</th>
<th>Title of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garrett Blumberg</td>
<td>Lynn Roppolo</td>
<td>Making the emergency department a safer place: managing the agitated patient</td>
</tr>
<tr>
<td>Robert Rash</td>
<td>Emily Gundert</td>
<td>Evaluation of an Inexpensive Model for Transvenous Pacing Education</td>
</tr>
<tr>
<td>Mark Dresselhouse</td>
<td>Jessica Hernandez</td>
<td></td>
</tr>
<tr>
<td>Daniel Jackson</td>
<td>Samuel McDonald</td>
<td>A Patient Performed Medication Reconciliation in the Emergency Department</td>
</tr>
<tr>
<td></td>
<td>Ellen O’Connell</td>
<td></td>
</tr>
<tr>
<td>Luis Puchi</td>
<td>Gil Salazar</td>
<td>Better outcomes for Hispanic patients – Are they lost in translation?</td>
</tr>
<tr>
<td>Ken Wang</td>
<td>Kavita Joshi</td>
<td>Procedure Associated loss of Situation Awareness</td>
</tr>
<tr>
<td></td>
<td>Jessica Hernandez</td>
<td></td>
</tr>
<tr>
<td>Lauren White</td>
<td>Jillian Horning</td>
<td>Palliative Care in the ED</td>
</tr>
</tbody>
</table>

After this went for another conference where I learned what are the things to take care and keep in mind in case you are expecting an FDA Audit. The whole office should be prepared to answer any questions asked by FDA. No files with protected information should be left on desk or any place
that it doesn’t belong. Make every effort to accommodate the time FDA want to hold the inspection day. In cases like PI is not available on the days and time FDA wants to come, make sure try to reschedule at earliest possible day so You don’t put any false impression of delaying for any purpose. Try to answer every question as clear as you can. Don’t over describe the things that are not asked. Be very specific. Each person involved in the project should be present at the time of the meeting. Also, to remember not only FDA can ask about what your responsibilities are rather they can also ask about certain tasks that are not your responsibility. So, in such scenarios don’t get puzzled and start doubting yourself. Try and take a pause and mention that this is not part of your job responsibility and I would be happy to find out details on it. It was very interesting to hear about real life auditing experiences from the audiences. Enjoyed and learned from both the seminars. Rest of the day worked on reading the studies that we are supposed to choose from. Doing the literature search on the ones I have shortlisted. Late afternoon we had meeting with Shannon and she got my signature on Confidentiality Agreement. Shannon went over each point on the form and explained it in detail. On Friday, we are going to be part of the first protocol revision meeting. Looking forward. We finalized our first committee meeting on June 9 from 12:30 p.m-3:00 pm. The third day was also great.

Day: 4 June 02, 2017/Friday

Started day with studying and looking over research studies. We are waiting on the laptops so we can start training. We had ACCESS Trial Protocol Review WebEx Slide Presentation. Initially had trouble getting connected but it worked out finally. Title of study was Access to cardiac catheterization laboratory in patients without ST-segment elevation myocardial infarction resuscitated from out-of-hospital ventricular fibrillation cardiac arrest. Dr. Demetris Yannopoulos and Dr. Tom Aufderheide are the PIs of the study. This is supported by The National Heart, Lung
and Blood Institute (NHLBI). This is an EFIC study (exception from informed consent). Consent cannot be taken over the phone from a LAR (Legally authorized representative), but we must respect a refusal over the phone. The hypothesis of the study is that there is a large portion of resuscitated patients presenting with ventricular tachycardia and/or ventricular fibrillation that do have underlying ischemic heart disease so the strategy to facilitate immediate revascularization in all patients presenting with VT/VF who do not have ST-segment elevation in ED 12 lead ECG is expected to improve the survival and will have less of neurological damage and better outcome. It was wonderful first week.

Week 2
June 5, 2017/ Monday
Got the badges made. Started on CITI training. Had no meetings. Got the UT southwestern Personal id number. Now the next step is to get the UT southwest user id and password for the email. Along with the CITI training working on the study proposal so did literature search and come down to 2 final picks for my research proposal.

June 6, 2017 /Tuesday
This morning we had ED research team meeting, which is every Tuesday. Met the whole team. Dr. Ahamed Idris is Director of Emergency Medicine Research and Dallas – Fort Worth Center for Resuscitation Research. He is also Professor of Emergency Medicine and Internal Medicine Department of Emergency Medicine, Senior Attending Physician, Parkland Memorial Hospital, Dallas NASA Medical Consultant, Adjunct Professor of Anesthesiology, Univ. of Florida, Gainesville. In the meeting team reviewed their ongoing trial studies and discussed if there are any deadlines to meet and how they can modify the changes and delays. I learned that JPS has its own IRB and works under that. Parkland uses Methodists. Also learned that highest and the second
highest enrolling sites do usually possess more chances of getting audit referred In Good Clinical Practices. So, it’s very important that we should always be prepared for it. That means keeping things in order and all the information up to date, such as reporting of any unexpected events with adverse effects or events and related to events. Site visits are great. They give chance to help prepare for the audits. Site visits are friendly visits. One very cool idea was proposed in the meeting while discussing on demographics and reaching out to enroll. Rather than messaging on Facebook it would be nice to create a silent clinical trial page on FB to find phone numbers and message. Committee decided to get the permission from IRB to include it on the consent form. Another study they talk is Hyperbaric oxygen chamber study. Not very many studies have been done on it. And they are very interested in doing it. So, they proposed to find out the sites to do the study. The requirement for the site should be Level 1 trauma center and have chamber. GCS should be between 3-8. If GCS is 7 or 6, it needs to have positive CT showing brain damage. Once we find get the names of the Director of the chamber and trauma unit. I have been working on my research proposal topic. My first choice is health literacy, numeracy and type 2 diabetes. Second one is Anxiety and chest pain in ED patients. I am going over the protocols for the both studies so I don’t miss out anything before I finally decide the topic for the study. I am also working on the CITI training as well. In the afternoon had a meeting with Shannon. She went over two picks I had for my research study. For anxiety and chest pain there were five surveys including demographics. The other study which is Health literacy and numeracy association with management of type 2 diabetes has two surveys in addition to the demographics. Shannon asked me if I finalized which study to keep, I chose the Health Literacy, Numeracy with management of Type 2 diabetes. So, I finally had my study to focus and work on its presentation. I chose this as I personally felt that the time line we have and number of surveys to administer, helped me decide.
June 7, 2017 /Wednesday

Shannon was not in the office today. K.B explained us what all we require to do for the day. We were working on CITI training and was supposed to continue on it. Since I finalized my study I started preparing the project summary for the proposal. Shannon gave us the template to use for the study proposal. So, completed my project summary in the afternoon. Shannon had printed few studies for me. I spent couple of hours reading over them and making a list of points that I liked. I wanted to reach out for the gap in the study that I was going to propose.

June 8, 2017 /Thursday

Today was day to prepare for the research proposal meeting for Friday. I started my day with making copies of all the forms and protocols. Shannon had sent me the revised protocol for my study which is Association of Health Literacy and Numeracy with Type 2 Diabetes. I made few edits on my project summary. Then after all the reading and putting all the important points and editing, I made final copies and started to arrange them all in folders. Shannon also gave us few supplies to help us organize our research study proposal folder. In the afternoon, we had Emergency Staff Meeting. The meeting was very informative, interesting and learned a lot about how the team works different ways to keep office environment friendly, productive and innovative. The meeting was started by the opening remarks by Colbey Walker. I think his speech was awesome. He went over restructuring and reorganizing going in the department. Few of the existing employees had expanded duties and few employees got promoted with more new and different roles according to their new position. There was a PACT cards award which is an employee recognition and was received by Gale. Shannon is the research leader, John Forbes is Finance leader, Beth Bailey is the education and Joanie Riley is administrative leader. In the meeting, there was talk over the Action Plan. Few exercises were done to go over the action plan
and everyone in the end volunteered to help out take on certain tasks to create a work place as efficient as possible.

June 9, 2017 /Friday

Today was big day. Me and Sean had our advisory committee member meeting this morning. In the morning, I went over few times over my research proposal and made sure all the folders had correct copies and information to present to the committee. Advisory committee from UNT Health Center came together and did carpool. Dr. Mathew, Dr. Caroline, Dr. Gwirtz, and Dr. Ranjan arrived at UT Southwest around 12.10. Me and Sean went with Shannon to greet them and meet them downstairs. We all took the committee first to the have lunch with Dr. Ava. After lunch Sean was the first one to present and I presented after him. Committee approved both of our proposals. It was very happy moment. Committee also addressed and made few edits to our study and that was very helpful. My committee been very kind and considerate to our timeline for our internship practicum. They wanted to make sure that I have time to analyze the data I collect and then have plenty time to prepare for my defense. Shannon and Dr. Ava have been just so helpful and patient and are ready to answer any questions we have and are training us to learn the right way. After the meeting and presentations were over, UNT advisory committee took off and headed back. It was great to spend time together with our University mentors and Site mentors. Feel very blessed and fortunate to have such wonderful committee and part of all hard-working team.

After the meeting, Dr. Ava and Shannon gave us some feedback on our respective projects. In the afternoon, I worked on looking at the format of research proposal examples that Dr. Stephen Mathew had sent us. It was wonderful rainy Friday. Looking forward to next step of writing the proposal and finishing CITI training next week.
Week 3

June 12, 2017/ Monday

Reached at the office and started working on CITI training. Worked on HIPAA and GCP modules. It was interesting to go over the training as lots of stuff refreshed introduction to Clinical trials class. Shannon had no meeting today. So, all day I spent on learning and doing CITI training. In the afternoon, we had huddle meeting with Shannon, Sean and myself. Shannon went over the research proposal with us and asked us to start writing on it and can ask her if we have any questions.

June 13, 2017 /Tuesday

Got to work in the morning at usual time. Today is usually Emergency Medicine research meeting day. But we didn’t have the meeting today. Dr. Idris and Shannon met and they did the accounting and salaries review. I finished my CITI training last night and this morning started working on the research proposal writing. There was no other meeting for the day. We still waiting on our laptops and monitors. Since I completed my CITI training, the next step is to apply to IRB to include my name in the protocol. Shannon told me that she will tell me which application needs to fill out for the request. Shannon emailed us the schedule for the week. We do have a class to attend on Friday. It is on new improvements in clinical research. This is in another building and Shannon will email us the directions. Class starts at 9 and goes till 11.

I worked mostly on my research proposal writing. The office staff is really very helpful. They are always happy to answer any questions if needed. Shannon keep checking on us if we are on our timeline for internship practicum.
June 14, 2017 / Wednesday

Today was the chill day. I reached office by the regular time in the morning. We didn’t have any meetings for the day to attend. The agenda of the day was to focus on Research proposal. Since I completed my CITI training I compiled the list of all the credentials required for the IRB to add myself for the study. So, I am working on this as well. Shannon was very busy with interviewing for some new hiring and new positions.

June 15, 2017/ Thursday

The day started with meeting Sean and Shannon. No meetings were set up for the day as well. I got some feedback from Shannon regarding my research proposal. So, I started working on the corrections and edits on the proposal. Along with that I also had to review literature for my study. We received our laptops finally. Boxed up and didn’t open them. IT team will come next week and install that for us. Also, we were told to change our cubicle to the other side as new hiring and positions were to be assigned in the cubicles we were sitting. Mario and Shannon had to move some stuff to storage room. Me and Sean offered our help to them. They only needed one person to move the stuff so Sean helped them take it to the storage room. Shannon helped today a lot answering lots of our question regarding the proposal and study. I truly appreciate and feel very fortunate to be part of the UT Southwest ED team. Gale is on vacation for the next week. We do have two more interns from the administrative site for about 6 weeks. During late afternoon, we get to meet Dr. Ava. She came to visit us and check on if all is well and if there is anything we need or if we have any questions. That was very kind of her to get time from her busy schedule.
June 16, 2017/Friday

Friday is casual work attire day. Sean & I went to seminar by Kim Moreland, Associate Vice Chancellor for Research & Sponsored Programs University of Wisconsin-Madison on the topic Current Topics in Research Administration. It was for 2 hours. She went over

- Procurement Update, 2 CFR 200.320
- Federal Budget Implications
- Indirect Costs
- Single Audit and LOC Draws
- R35 Awards
- Regulatory Reform Ideas
- Micro-purchases at or below 3500 Dollars threshold do not require competitive quotes and purchases above micro-purchase threshold do require price or free quotations for an adequate number of qualified sources
- For all non-federal entities there is an additional grace period for implementation of procurement standards in 2 CFR 200.317 through 200.326. This means the grace period for the non-federal entities extends through December 25, 2017 and the implementation date for procurement standards will start for fiscal years beginning on and after December 26, 2017. She also talked about National Defense Authorization Act. NDAA and Micro-Purchase Threshold is determined by head of the relevant executive agency. They are consistent with clean audits. She went over some more bad news about the budget. The budget would eliminate funding for nearly 20 smaller independent agencies including;
  - National Endowment for Arts
  - National Endowments for Humanities
- Corporation for public Broadcasting
- Legal Services Corporation, which finances legal aid groups.

Bottom line is FY 18 proposed a budget that increases Defense R & D by 10%. Cuts Nondefense R & D by 22%. It takes 60 votes in the U.S senate to pass that budget. Talked about F & A defined the uniform guidance. Indirect F & A costs means those costs incurred for a common or joint purpose benefitting more than one cost objective specifically without effort disproportionate to the results achieved. We came back from the lecture series which was in north campus, opposite site of Harry Hines Blvd back to our building and back to office. Shannon was busy today and she told us how happy and excited she was as she found out the results of her study came out what she was expecting. I felt so nice to see that excitement in her. She got the data to prove her point now. Which makes it easy to work on it further. I also worked on the final editing of my proposal.

Week 4

June 19, 2017/Monday

It is hard to believe that 3 weeks have already gone by. We are in our fourth week of the internship. The day started with driving in heavy rain. Traffic was bad and blocked. I texted Shannon that I was on my way but will be driving slow. Shannon replied back and ask me if weather is too bad and road situation seems wrong I should turn back and go home. Since I was half way so luckily, I reached safely and in time. I wanted to mention this because I greatly appreciate that Shannon was very kind and concerned about safety of her employees and interns. In the office, I started my day with going over credentialing process. I made copies of the consent forms from Sean as he had printed them all. We both still don’t have access to the network printer. So, we send the documents to be printed to Shannon and she helps us print them out for us. Hoping by end of
current week the credentialing will be done and we will be able to start working on real stuff. I revised the proposal as well. Research proposal has been sent for Dr. Ava feedback on Friday. Had no meetings to attend with Shannon. In the afternoon filled out the application for the IRB credentialing. Finished reading and signing all the consent forms. Scanned and sent the documents to my email. I checked off lots on to do list from the completion of credentialing.

June 20, 2017/ Tuesday

This morning had some parking issues. There was an event going on this morning. Some school children were here to kind of get the insight how hospital works and that’s why it was very crowded. Reached office and started my day. Today I completed all the formalities for credentialing except IRB training class which I got registered to attend on July 11. I had emailed Barbie for the information and registration for the mandatory IRB class. I got her reply and can attend the next upcoming session on July 11 from 8-11 am. Barbie also included the map of the hospital to get to the room where the class is going to be. Dr. Ava had replied back yesterday about the research proposal to me, but the mail went to junk mail. Dr. Ava came to visit us this morning. And told us personally that she thinks the proposal looks great. Then I sent my proposal to Dr. Stephen Mathew. Dr. Mathew confirmed that he received the proposal. I am looking forward to getting feedback from Dr. Mathew. At the site end, finally I sent all the paper work to Kathryn and Shannon for credentialing. Sean and I are not able to do the conflict of interest attestation as the site is not letting us. Shannon has tried to talk to IT people to fix it but haven’t heard back from them yet. My computer has not come yet. Still waiting to get it all connected so I can start training and learn to work.
June 21, 2017/ Wednesday

Day started as usual. I reached office a little early. During the morning time, I read my proposal again and literature. The topic was updates on the health literacy. I wrote few more points to kind of build great foundation for my study. Every time you read an article you tend to learn a new point. Late afternoon, Shannon showed Sean & I how to send an IRB modification to add a new person on a study. She created a Mod, which is short name for modifications in study. Then she added my name to my study and sent request to IRB. We still cannot access the conflict of access attestation page. So, waiting on that one. Shannon asked Sean & me to train a new TEMRAP student about how to do our studies. She had to get her badge done before she could come train with us. Mario Puente is really nice and always makes sure he answers from our side. After the new TEMRAP student got her badge done she came to the department and we had a meeting in the conference room. Sean and I went over our studies with her and the process from introduction to the completion of surveys. We practiced the consent process several times. Shannon helped us learn how to correctly administer the consent form and provide all the information that needs to be delivered to the patient. We practiced answering any possible questions that patient might ask. The TEMRAP student’s name is Lyndsey. She is a 4th year medical student. She will be helping us recruit patients for our studies. Today was a learning experience. After going over consent form practice session felt more confident but surely with practice it will get better. It is all about providing all information to the patient in appropriate time that it is conveyed clearly and not missing out any important element but at the same time not to make it too lengthy. While we were reviewing the consent form and surveys, Shannon suggested we could make flash card for the health literacy surveys. I really like the idea and I will be making these soon. Shannon also asked & I Sean to make Data Collection Sheets and an Enrollment check list. Got projects to do. This is
exciting. Getting into real work. We ended up day thanking Shannon for exposing us to new ideas and trainings on the consent process.

June 22, 2017/ Thursday

Today was a slow day. We are waiting on our proposal edits from Major professor. While waiting, I went over more literature on my study and took few notes. I was able to complete the conflict of interest attestation today. I also received email from Dr. Stephen about the providing all the paper work to show that I have been added to the IRB.

June 23, 2017/ Friday

I got to the office the same time. Worked on the research survey flash cards and other documents. Made the Flash cards for health literacy survey. I redid the flash cards as I wanted to get them in a landscape layout. Shannon printed them for me. As I still don’t have access to print. I am waiting on my computer and monitor as well. So, I send out email to Shannon if I need to get anything print. Shannon asked us to make a new whole package for the recruiting and practice taking consent and administering the surveys with each other. In the late afternoon, we both did an hour of mock session for each of our studies. It was good practice. Sean & I decided that we should practice every day so we can get confident in taking consent and administering the surveys. We are putting it on our schedule for everyday in to do list during our work days.

Week 5

June 26, 2017/ Monday

Dr. Mathew had turned in edits on the proposal on Friday. So, I worked on my corrections over the weekend. This morning I sent it to Shannon to proof read before I send it to Dr. Mathew. After I received edits from Shannon I reviewed my research proposal again and made few more changes.
Then finally, I sent to Dr. Mathew my major professor. Today, Shannon sent an email about Tuesday research meeting which is in Fort Worth and we don’t have to go there. So, mostly will be in the office today and tomorrow as well. Sean & I am working on practicing consent taking process each day. We are timing it to make it more real. I am still waiting on my monitor and computer. Hoping to be all set up by end of this week.

June 27, 2017/ Tuesday

Came to office at the same time in the morning. I got an email that I need to do another HIPAA training. So, I logged in and started on that. But the page wouldn’t download for some reason. In the morning, Sean & I practiced on the informed consent process. We are trying to come up with different answers to create scores for our surveys. From tomorrow we are going to ask more questions to each other during the consent process to practice answering to the patients for unexpected questions. For the practice, I had to print package of documents for the study. I emailed to Sean and he helped me printing. As he has got the monitor set up and can log in and print. After we made our study packet for patient we went to huddle room to do practice session. The overall time it took including going over the consent form, HIPAA authorization form, getting them signed and then administering demographic survey, Health literacy survey and Newest Vital sign survey was approximately 20 minutes. My aim is to administer all surveys within 15 minutes. Hoping the everyday practice will help my speed to pick up a bit faster and at the same time going over every part of important information. Finally, the page for the HIPAA training was loaded. There were two courses for me to take. This is part of IRB credentialing. In the afternoon, I worked on the training and completed it. After that, I went back to reading the literature for my study. During the break times, I go over my proposal and protocol of the studies. Shannon told us that tomorrow she
will teach us how to send in IRB applications. I am really excited as she has few IRB applications that need to be submitted. I feel I will be of some help to Shannon.

June 28, 2017/ Wednesday

Started my day as usual. Reached office. First thing I always do is check the emails. So, I got added to IRB. Shannon had sent all the documents pertaining the IRB approval for adding me to Dr. Stephen Mathew. It’s really exciting as now only have to wait from UNTHSC IRB to add me and I can start recruiting patients for my study. Yesterday, I received email from Dr. Mathew stating that he has received my revised proposal and he will again review and email me back his final edits. Only after that, I am supposed to send my proposal to the entire advisory committee. We also got an email about potluck ice cream event which is on Friday, June 30. Sean & I worked on practicing our consent process. Today, Sean and I were well within the time limits in administering the verbal survey questionnaire and completing. We have decided to keep practicing and timing ourselves. This is our first on to do list these days in the morning. And then we leave the rest of the day for our literature review and new things to learn from Shannon. I get to talk to Dr. Stephen Mathew this morning and he asked about how the internship was going and we talked about the documents required from our side for UNTHSC IRB to add me and Sean. Dr. Mathew told me that there are 3 important documents that are required:

1. Study Protocol
2. Evidence that me and Sean have been added to the study by UT Southwestern IRB
3. Continuing Renewal letter from IRB stating that study is current/active and title of study should match.

I conveyed this information to both Sean and Shannon. Later in the afternoon, Shannon set up conference meeting with Sean and me. She trained us by going over how to submit the new mod
for IRB and send it. Technically, only the PI of the study is supposed to send the mod to IRB. Shannon made all the changes, created new mod with all the revisions and then emailed PI of the study with a screen shot to send it to IRB at her/his earliest convenience. The process went like this: we go to UT Southwestern site; and search for IRB site; Then, click on it and look for eIRB and click on it; It will ask you to log in with your UT Southwestern log in Id and password; Then you create a new mod. The changes you made must be saved in tracked form as well as in a clean version. Once the mod is created and saved, then it will show the status first as “processing”. Later it changes to “Draft form”. Once it is in the draft form it then can be emailed to PI of the study with a screenshot and brief message. Then, PI can send it to IRB. Shannon was going to go over the studies that needed new mods to be added for IRB review but she couldn’t and told us that this will be tomorrow’s project which is on Thursday.

June 29, 2017/ Thursday

Started day earlier than yesterday. Checked my emails. Got email from Dr. Mathew with few more revisions. He has asked me to do these and then I can send it to my advisory committee. We got the revised consent forms as well. Since yesterday we made a few revisions on the consent form like there were names of the other hospitals that are not going to be part of the recruitment. Shannon took them off. Shannon also revised the names of all study personnel and students for answering any questions for the patients. The first part of the morning I spent doing the revisions on my proposal that Dr. Mathew has asked me to do it. I completed the revisions asked and sent it to the entire advisory committee.

June 30, 2017/ Friday

Day was started as usual. Reached office early to prevent the traffic hassles. I went over my emails. Dr. Mathew email me informing that he has submitted the IRB request to add me. So, we are in
the waiting window period. At UT Southwestern, I have been added by IRB. Yesterday, on Thursday, Dr. Ava made a round and checked on me and Sean. It is always great to see her. She signed our journals and also gave some advice about informed consent. For example, we must know how to re-direct talkative patients back to research survey as they can get deviated and want to carry on with conversation. It was a great pointer to keep in mind while dealing with such patients. Today in the office was potluck ice cream & dessert party. Everyone was told to wear blue, red or white. I brought home made rice pudding desert. Shannon gave me training on how to enter the data and all information on new study protocols. I got to learn to log in to eIRB and go to manage new studies. Then it directs you to fill out all the pertaining information for the study. Shannon also showed me how she keeps record of all the current studies and other studies status in the Excel sheet. There were lots of steps involved and I want to honest that I want to work myself to get the hang of it. Shannon added me to this new study so I can log in and edit it. I think this is good way to practice learning and actually get the steps to follow.

Week 6

July 3, 2017/ Monday

Not very many people were in the office today. I came to work and left a little earlier than the usual days. Everyone starts to get in the mood for the long weekend. I got my revisions back from Dr. Caroline Rickards. I went over the suggestions and edits that were asked by Dr. Caroline. I started making notes of the corrections needed to be done. Tomorrow, is a holiday so will work on completing notes and then finally incorporate all the changes into the proposal. So far, as by Dr. Stephen, we are right on time for the deadlines and not behind in submitting the proposal. This is good to know.
Tuesday – Holiday July 4 / OFF FOR LONG WEEKEND

July 5, 2017/ Wednesday

All day worked on the revisions asked by Dr. Rickards. Shannon help me in all this process especially in the biostatics part of the research proposal. Got sad news about Dr. Mathew’s dad who passed away. I wrote condolence letter to Dr. Mathew and emailed. This is tough time for Dr. Mathew and I pray that he and his family finds peace to get through this.

July 6, 2017/ Thursday

I came very early as I had to leave early today. This morning I sent the proposal to the whole committee with the final revisions. Worked on my journal for rest of the day. I also made copies of the consent form packets both in English and Spanish.

July 7, 2017/ Friday

Today I went to family practice doctor as a walk in to check if they can adjust me in the schedule for my TB skin test. It was very crowded and I had to wait forever. I couldn’t get in as well. I will have to come back again. I worked on my journal and read a few articles on health literacy. I took off today and couldn’t go back to work. Although I worked on revising my proposal again to myself and made notes.

Week 7

July 10, 2017/ Monday

The day started with checking the emails & catching up after the weekend. I am still waiting on my monitor and computer. I also sent the disclosure document to Dr. Mathew and now we are waiting to get approved by the UNTHSC IRB. First half of the morning Shannon wanted me and Sean to make PDF packets for our study. This packet is for the TEMRAP students as they are
going to start recruiting the patients. I made one folder of all the documents for the study that includes:

- Protocol
- Inclusion/Exclusion criteria
- Data collection sheet
- Two consent form to participate in the study
- Two HIPAA authorization form
- Demographics
- Short Assessment of health literacy in English & Spanish (SAHL-E/S)
- Flash cards for SAHL-E
- Newest Vital sign in English & Spanish (NVS-E/S)

Printed all the documents in one sided paper only and then scanned all of these into one place. Saved it and sent it back to Shannon.

July 11, 2017/ Tuesday

Day started at 7.30 am. This morning I went to attend IRB class. Class was hosted by Barbie Holt. Topics she went over were

- Good Clinical Practice (GCP)
- Initial Study Submission
- Informed Consent
- Compliance program
- Velos & eIRB

This class was great review of few topics of the IRB CITI training modules. She talked about what is good clinical practice (GCP) and how is it so important. GCP is an international ethical and
scientific quality standard for the design, conduct, performance, monitoring, auditing, recording, analyses and reporting of clinical trials. GCP is everything as it covers all the aspects. GCP is so very important because GCP compliance provides public assurance that the rights, safety and well-being of human subjects involved in the research are protected. Class went till 12.00pm. This class was in the north campus of southwestern hospital opposite to Clements hospital. So, I had to park in the building next to it which is the Chase building. Class was on the 14th floor. After the class was over I came back to work place in my ED building.

Today, we also had weekly research team meeting. Since Sean & I were in the class we missed about half of the meeting. They were almost closing down with reviewing all the ongoing studies. My TB test will be expiring soon. I am trying to find a time to get it done sometime this week. Dr. Mathew is still in India. I emailed my condolences. So, I emailed my disclosure form to Dr. Gwirtz and cc to Dr. Singh and Stephen Mathew along with Dr. Caroline Rickards. I also went ahead and emailed MS proposal form to all advisory committee and Dr. Singh too. I am waiting to hear back from them as what is the next step.

July 13, 2017/ Wednesday

Day started with checking on emails. I got the MS evaluation of Research proposal form filled and printed. I do need to get signature of all the committee members. I emailed everyone on board as to what is the good time that I can come by and get them to sign on the form. For UNT I am planning to drive there one day this week to Fort Worth depending on availability of the professors. KB showed me and Sean today how she does the IRB application submission. Great review of the application submission showed by Shannon. KB also gave me and Sean the notes from the training class she got which shows the steps to the application submission to Velos/eIRB study registration and also steps to how to request performance site approval. The title of the study that was being
submitted for IRB application was “To assess initial understanding of trans venous pacing (TVP), simulation with Low-cost alternative simulation model retention of learning 1-3 months after the simulation.” Later in the afternoon, I attended a department meeting. Today’s meeting was about the DISC Self personality test score that everyone was supposed to take. DISC is the evaluation of behavioral styles. Goal of this meeting was to go over what all it means and how to accomplish the great work place environment with different types of personality and their approach to work differently. KB showed me how to do IRB submission. She also gave me a cheat sheet that she got when she was trained. Shannon gave a task to write background section for a study. The study was to lower the rate of patients who left without seen by physician in ED due to several reasons.

July 13, 2017/ Thursday
Got some literature from Shannon that she provided for the start of the background part. Made copies for myself and Sean. Started reading on the lit part. Also went over the checklist for the IRB credentialing if anything is missing.

July 14, 2017/ Friday
In the morning, went to UNT Fort Worth to get signatures. After I got the signatures, I submitted the papers to Derrick. Got done by afternoon and then returned back to UT Southwestern. Met Dr. Gwritz and Dr. Caroline Rickards. Started working on writing the initial draft for Shannon.

Week 8

July 17, 2017/ Monday
Reached office and started my day with usual email checking. I had a nice surprise this morning at work. I got the computer at my desk. Gail asked me to check to see if I can log in. I tried several
times, but I couldn’t. I am sure this will be fixed as well. So, I spend the morning reading more papers and finally writing the draft for the background. I emailed Shannon for her feedback. She told me she will review it later in the afternoon. In the meantime, I started writing on the daily journal. I tried couple of more times to log in, but couldn’t. Then, I called the help desk and talked over the issue but they unfortunately couldn’t fix it. Shannon tried to log in from my computer to check if it let her log in. Well, she couldn’t log in either. So, Shannon filed a report and an IT guy told us on the phone that he has to come personally to check on the issue. Late in the evening he came over and checked and gave us the solution. He told us that this computer needs to reimage. He stared and told me to let it run and tomorrow morning I could log in. It will run all night and will stop by itself once complete. After he left, I stayed back a little late as I came late in the morning.

I finished reading the article that I started this morning. Title of the article was “Minimizing ED Waiting Times and Improving Patient flow and Experience of Care”. This study was conducted at Cambridge Hospital ED. There was pre-interventional & post-interventional analysis done to assess the impact done by the reengineering the ED patient experience by improving things starting from patient check in to disposition. ED crowding has become an epidemic. This can negatively impact patient care due to increased demand and less resources. So, by developing a patient care timeline for each ED visit. By carefully organizing ED patient flow could minimize the patient waiting time in ED. By managing the laboratory turnaround time also helped improved long waiting times in ED for the patients. Transfer of the admitted patient to inpatient within 30 minutes of ED. Expediting the completion of the admitting orders by inpatient and lastly decreasing inpatient length of the stay by effective discharge planning.
July 18, 2017/ Tuesday

Today’s first thing was to check the computer to see if it lets me log in and it did. Running to reimage did help restore the computer issue I was coming across. So finally, I don’t have to bother Sean and Shannon each time I need to print. Then as usual I checked my emails. Dr. Stephen Mathew is not back yet. He emailed that he will be back to work on Monday July 24. Rest of the morning I went back to reading the literature review for Shannon study. Finished reading on couple of more articles. As Dr. Caroline suggested that I should start working on my final report, I took that advice and started drafting initial final report. As the study will progress will get data analysis report and will incorporate the results, discussion and conclusion towards the end of the study.

Late afternoon Shannon had a chance to review the background that I wrote for her new study proposal. Sean helped out in formatting the rest of the protocol. Shannon put together both of our parts that we did and created a protocol and emailed to both of us. It was great practice for me. I enjoyed working on the writing background section for Shannon. Gail called a quick meeting for all of us to discuss about TEMRAP program orientation sessions for fall classes. There are going to be two sessions in August. Shannon, KB and Gail were trying to come up with the best plan to accommodate with talk sessions, tour of Parkland hospital, to get Badge done at parking office, another tour to the ED department office. I am excited to help out in any way possible. From greeting to handling chores for the orientation day. I offered my help to Gail and Shannon. Still waiting on IRB approval from UNTHSC. Also waiting on Kathryn to approve me as research credentialed. Following is another article from the literature review with its concise summary.

“Effectiveness of Resident Physicians as Triage Liaison Providers(TLP) in an Academic Emergency Department. “
Concise summary: ED crowding is associated with bad and negative effects on patient quality of care. This was a retrospective study which was done to compared the operational performance at an urban cost-effective ED during and post TLP periods. It showed that both residents and attending physicians TLP’s did improve door to provider (DTP) time and patient satisfaction and LWBS percentages. The downside of the study was some studies have suggested that the TLP is not a feasible choice due to high labor costs, increased staffing needs.

July 19-25, 2017/ Wednesday, Thursday, Friday, Monday & Tuesday

I took off these days with Shannon’s permission. Since we were in waiting period for IRB approval and for research credentialing so she gave me permission to take off these days. I got to spend family time during this internship in summer and I really appreciate Shannon for granting me these days off. I also wanted to extend my thank you to Sean Harla for keeping me posted and also specially for dropping off my research proposal form to Carla at UNT.

Week 9

July 26, 2017/ Wednesday

Came back from the holiday. I had lot to catch up so I started day with checking my mail. Huge thanks to Sean who dropped off my research proposal form along with his own to Carla at UNT Fort Worth and keeping me posted. I tried to log in to my desk computer but for some reason it didn’t work. It kept saying there is an error about no input. So, I went to Shannon and we called the help desk. They couldn’t fix it over the phone and told me that they will send someone to look at it. I had emailed Dr. Stephen Mathew about intent of graduate form. I needed to get his signature and drop it off to Carla before Friday July 28, 2017. Dr. Mathew replied me back and told me that
he is available on Thursday July 27, 2017 from 10-4 pm. I informed Shannon about this and asked her permission to make trip to Fort Worth. Shannon gave me to enter the data from VAS study. It is like coding. Shannon showed me how to enter and how everything has code designated for. One another thing learned in addition to IRB application submission. At least will be of some use to Shannon in her work load, hopefully. There is one more study Shannon wants me and Sean to work on. This study has been pending approvals and Shannon wants us to look into the EPIC and pull out the data. So, she can start the work on this study. This will require our training by the study sponsor at Vanderbilt university, which can be done over on the phone. Sometime next week will do the training first and then we can be eligible to pull out required data from EPIC for this particular study. At the same time Shannon will create a new mod to add me and Sean to study as well. I received email from Kathryn Kocurek to submit documents for IRB credentialing. I had emailed her all the documents earlier, but she gets lots of emails for credentialing for so many students a day that it is very overwhelming for her. Shannon suggested its good idea to just resend all required documents again. I am hoping to hear back from her soon. Sean gave me the copy for the IRB approval from UNTHSC. Now I only need okay from Kathryn so I can start observing/shadowing Shannon or KB or Mario doing the consent process in real life.

July 27, 2017/ Thursday

This morning I had an appointment at my doctor office to get the TB skin testing done. It took couple of hours of wait. After that I had to go to Fort Worth to get Dr. Mathew signature on the Intent to Graduate form. So, I made trip to Fort Worth and met Dr. Mathew. He signed the form and helped me make copy of it. I then went to CBH building and dropped the form at Carla office. Almost half of the day was gone. So right after dropping the form, I drove back to UT Southwestern and came back to work. Reached office around 1.30 pm. I kept Shannon informed about the day.
So, I will get my TB test read on Saturday. So, will email the results to Kathryn and then she will send my application to parkland. Looking forward to starting with the clinical stuff of the study as to recruit patients and taking consent.

July 28, 2017/ Friday

Started my day at work with the normal routine. That is to check on the emails. Yesterday was a bit hectic not at work but just driving around from Frisco to Fort Worth and from Fort Worth for Dallas and then back to Frisco. Dr. Mathew showed me how to do Endnotes and create library yesterday. So today I practiced on it and wanted to get my hands on so I could start using Endnotes for the citations in my proposal and for future writings. Today, I spent most of my day at Parkland hospital shadowing Mario Puente. He is working on screening and recruiting for his study which is morphine and or fentanyl use in trauma patients affecting blood platelet levels. So, for that they are collecting blood samples before and after these drug is administered. The eligibility criteria and the patient population setting is challenging recruitment. The criteria most coming in as a roadblock is that a patient can’t be taking any other pain killer like NSAID’s or Tylenol. As most of the patients who comes to ER hurting has tried some kind of pain killer drug at home already that puts the subject in exclusion criteria and cannot be enrolled even if they are given fentanyl or morphine in the ED.

Week 10

July 31, 2017/ Monday

First thing first. Checked on my emails. I had received the email from Kathryn confirming that UTSW credentialing has been approved and completed. Shannon asked me to now get in touch with Kelly Clark for Parkland credentialing process. I emailed her and cc Shannon as well asking if she could guide me through with the next step in this process of Parkland credentialing. Kelly
replied back that she will have to wait on the P number from HR department and once she gets that she will email me and then I can be enrolled for parkland training. Parkland has its own training module that needs to be completed for the getting access into parkland Emergency department. I will be look out for my P number to arrive. Today another important thing is done. “Thesis Defense date.” So, there was an exchange of few emails to my committee members and Sean’s committee members for the final date and time of the defense. And everyone agreed and was available for November 10 from 1-3 for Sean and then from 3-5 for my defense. Little butterflies but am glad that we got this out of the way ahead of time and also works out great for keeping a set final date so things can run in orderly fashion. I will organize my study practicum keeping the deadline of defense in mind. The next thing is to email Derrick to book the room for that day. I am planning to do that this week. Shannon gave me project for chest pain study. I started to work on entering data from the Chest pain study to Excel. Shannon gave me the file which had all the data collected for the study by the recruiters and the data was all de-identified. So, I put in demographics and survey reports. I also learned to make the heading and put in code for each section. There was data collected for 62 patients. I completed 55 subject entries. Most of my day was busy with working on Excel. Around end of the day received another email from Dr. Stephen Mathew to confirm and accept the invitation of my defense on November 10 from 3-5.

August 1, 2017/ Tuesday

Had to finish my 7 left entries of the data from the chest pain study. The aim was to do it first thing in the morning and hand over the completed project to Shannon. It sure was accomplished. In the morning, we had Research meeting with Dr. Ahmed Idris and research staff. I attended the meeting with Shannon. The research team went over the ongoing clinical trials with Dr. Idris and discussed
if anything requires attention or improvement in the any of the study going. They also discussed the few unexpected adverse events happening with one of the cardiac arrest study. There was discussion about ordering bracelets and necklace as tags for the patients/subjects that do not want to participate in the study for them to wear it all the time that in the event they are in ED, there is something clearly warns the paramedics or EMT’s that not to recruit this patient and should be getting the regular emergency care that is required to treat. Many instances have occurred where there was lack of proper communication and patients were recruited who didn’t want to otherwise. There were few ideas about the engraving words like OPT OUT EMERGENCY RESEARCH. I am appreciating all the knowledge I am acquiring in real world of clinical trials. Since I were waiting on the P number I started making copies and packets of consent and surveys for my study. Shannon asked me and Sean to go to bookstore and order the lab coat. She paid for the lab coats. That was very kind favor of UTSW department to do this for the interns that is me and Sean. We both filled form for the embroidery that says our name and department number. It had options for the color of thread. Pretty cool I think. The lady at the bookstore told us that it will take 2 weeks to get the lab coat back with embroidery done.

August 2, 2017/ Wednesday

Got P number. Yay. Received email from parkland. Got email to complete parkland training modules. Tried to log in and start working on it. But couldn’t log in. Then called Help desk and they helped log in but it would not load the modules. It didn’t work. Then I tried chrome and Firefox but it will not even let me log in. Worked all day on solving log in issues with Parkland. Finally, he created a ticket to send someone in for the check on this. Kept waiting for it all day. I wanted to get started with modules so I could get closer to start on my study recruitment. Well
patience is the key. I am a bit concerned regarding the time left to recruit for 400 patients, collecting & analyzing the data, interpreting results and making the final report. I would like it to be done good amount of time ahead the deadlines so committee members also have enough time to revise and send me to do corrections. This morning I also sent an email to Derrick to book room for my defense. He responded pretty quickly and booked room 240 in CBH for my defense day November 10, 2017 from 3-5 pm. So far regarding all the deadlines I believe I am good with it. The challenge is going to be in coming months of starting the study and recruiting the patients. I am anticipating pretty hectic months.

August 3, 2017/ Thursday
I started my day with talking to help desk for resolving my issue with Parkland log in. Tried several times with no success. Half day went by working and talking to them to fix the log in problem. Then one of the IT guy asked me to log in at another computer to see if that works. I tried logging in at Sean laptop. It actually worked. Now the problem is that it is my personal computer that is the issue. So as advised I had few pending updates to run. So, I tried to update my laptop and then shut it down for a while. I restart and tried logging in and it finally worked. I then uploaded and worked on first two modules. It took about few hours to complete.

We also had meeting with Dr. Idris. First time Dr. Idris talked to me and Sean about our projects. So, he asked as what studies are you participating and if any way he can be of any help we should ask him. Dr. Idris asked few questions to me regarding my study of “Association of health literacy and numeracy with the management of diabetes.” I answered that it is survey based studies and we will enroll subjects at the exam room. The research team then went over on their ongoing research projects. There was a talk about community consultation. It is required as first thing before IRB
approval. Then provide results & resubmit the IRB application for the approval. Once approved then have to inform community as well. Community consultation can be done in several different ways such as emails, handouts, phone call, opt out bracelets or necklaces. Module 1. CIA - Clinical Quality Training - Non-Physician
Module 2. CIA 2017 Code of Conduct

August 4, 2017/ Friday
Did the third module it took all day unbelievable. It was about 6 hours long for me. As I took breaks in between. Module name was “The CIA-GC-Compliance & Ethics Program and Code of Conduct & Ethics Training v2”. Next module I finished over the weekend at home. Last two modules I could not access and download on my personal computer so have to wait till Monday to work from office desk top. Friday, all day was spent doing the training.

Week 11
August 7, 2017/ Monday
Today was day to finish my Parkland training. The last two modules were not working on my laptop. Sean had to go to Parkland to do these last two training modules. I wanted to log in and try it on the desk top if it would be able to load those modules. These last two modules definitely didn’t work on my laptop. If it were working I were planning to finish it over the weekend. That’s why I waited for Monday to try it on the desk top at work. I was successful and I didn’t have to go to Parkland. So, I completed my Parkland training and was excited to get closer to getting credentialing done at Parkland. It took about 4 hours to finish them. Then, I received the email confirming that its done but I need to now do training on EPIC to get access to the epic system that
contains confidential patient information and their MRN. I started on those modules in the afternoon. For some reason or so I finished one module and it didn’t save it. Help desk has advised to use Chrome but apparently chrome didn’t work out for the EPIC training modules. I emailed Kelly about completion of my Parkland training and also sent her all the completion certificates for the training in a file as pdf. Kelly has requested a copy of proof from Shannon that I have been added to the study. She said that screenshot of email from IRB should work. I asked Shannon if she could send me the copy of that email from IRB. Shannon sent it to me and Kelly.

The next thing I am waiting on is completing the EPIC training and that will grant me the access to Parkland and EPIC. We were expecting to get it all done by last weekend but it is definitely a process. A process where Parkland is training every new comer so well until they themselves feel confident to start working. There is lots of learning about Parkland and its atmosphere at work, patient care and so much more through this training. By doing training I am already feeling a part of Parkland family.

August 8, 2017/ Tuesday

First thing today I started to work on was the EPIC training module. I logged in through internet explorer instead of Chrome. I completed my modules of EPIC training. Right after completing the training I got email saying it’s all done. Today was research meeting. I got to attend these meetings with Shannon and it makes you feel part of the research team. Great learning points while the team discuss on the ongoing clinical trials and appreciating everyone about their part of work they do. Dr. Idris is very encouraging to all the team members. One study TXA is almost done enrolling the subjects. ESETT is study that is in process of launching and it is about seeing effect of three drugs given in event of status epilepticus unresponsive to standard benzodiazepines. ESETT is an
adaptive analysis trial. NIH loves these adaptive analysis trails as they cost less, & gives answers rather quickly. Community consultation has been done for this study as required component. Dr. Idris was telling the team that with the several community consultations and other experience talking to public, it is rather clear that more denial to participate in study or any clinical trials are to Drugs than Procedures. The exact reason is not known may be its because of drugs seems always more experimental and they hear horror stories by media? Shannon has prepared a spread sheet for the study and Dr. Idris really acknowledged and thanked Shannon for organizing huge data in spread sheet. He found it very helpful. After the training, Shannon talked to me and Sean about the study she needs our help. The name of the study is Influence of STEMI T2E on T2T. Tomorrow we are going to be trained as to how to extract the data for this study from EPIC. Rest of the day I worked on my journal and going over health literacy and diabetes reading.

August 9, 2017/ Wednesday

Today is training for Influence of STEMI T2E on T2T study. I am excited to help Shannon on this study. The training is from 2.30-4.00 pm. I tried to print from my desktop, but seems like it is not working. So, I asked Amy to help me. She saw that I don’t have access to O drive. Amy told me to ask Shannon for access to O drive and then only she will be able to add the printer. In the meantime, I am reading the health literacy and numeracy at CDC site.

I am going to attend the staff meeting in few minutes. Staff meeting was from 1.30-2.30. Colby Walker did the manager assimilation follow up. He asked all the staff if there is anything on his behalf that needs to be changed. He asked for an honest opinion about him from the staff. I thought it was pretty cool. We also discussed the DISC results and employee engagement action plan. This is conducted by Joanie Riley. All the staff has been divided in small groups and given
responsibility for a particular action such as communication team, dress code team etc. Communication team had put together list of DO’s and DON’T for the office environment which is explaining the Office communicating etiquettes. It was amazing. That list will be sent to the whole staff by communication team. After this each function leader gave updates in their department. Beth Bailey who is manager of education division of EM told us that they are getting ready for the residents interviewing starting in November. The whole team is working hard and in process of planning and organizing events. At Research end, Shannon McNabb and her team is also getting ready for the new TEMRAP students for fall. They are having orientation session in August 16 and August 21. Sean and I have offered our help at orientation. Shannon announced that she is going to hire new study coordinator and asked if anyone they know is interested should forward her resume for potential candidates. She will be posting it soon on the site. I have shown and talked to her about my interest in working with them. Shannon told me that she will help me guide as how to apply for the job. As soon as the meeting ended me, Sean and Shannon had another meeting to attend. The meeting was online and on the conference call. This meeting purpose was to train me and Sean for STEMI study that Shannon needs help with. Dr. Maame Yaa A.B. Yiadom (MD MPH at Vanderbilt University) is the Principal Investigator of the study. This is multi centered study. Dr. MaYa conducted the training herself. She helped us learn about heart attack and cardiac catheterization. She trained us how to use RedCap software for data entry. Training went on for 3 hours and it was worth it. Glad to be part of this project. Hopefully can help Shannon on data extracting. Looking forward. It was long day but felt great as new learnings and experiences.

August 10, 2017/ Thursday
Today came to work at the same time in the morning. Checked my emails. Had received email form Dr. Maya from Vanderbilt university. She sent the presentation slides for me and Sean to go over again if we have any questions and also to look over the videos showing cardiac catheterization procedure. Dr. Maya asked us to complete the test subject entry for us to practice on REDCap. Yesterday, during the training we created a test subject and Dr. Maya walked us through the data entry for each instrument on REDCap. After I completed the data entry for each instrument for test subject, Dr. Maya want us to sign on Delegation of Authority form confirming that we have completed the training with them. I will ask Shannon. In the afternoon, Me and worked together on Shannon desktop practicing on REDCap data entry. We filled in new case report. We worked for couple of hours on this. Shannon helped us fill in gaps and keep teaching about how and where to find information of each instrument.

August 11, 2017/ Friday

In the morning, we had staff meeting on technology. It was about how to use Microsoft power point touch feature. How to connect your laptop in conference room smart board. After the meeting, I logged into the REDCap and entered all the data we extracted from the EPIC. This was another practice session. After this we need to sign the delegation of authority form. This will complete the training into EPIC and REDCap. I am a bit worried about my study. As not much time is left for the final defense. We are done with all the training and paperwork required from our side. Now only waiting for final approval and then we can start recruiting subjects for study and start collecting data. It was a slow Friday today.
Week 12

August 14, 2017/ Monday
Today worked from home. I was under the weather and didn’t want to spread germs. Today Shannon asked Credentialing office if Sean and I have anything pending that needs to be submitted. Anna Barden who is the director at research compliance office replied that we have to submit a written request explaining why do we need access to parkland ED in detail. I will ask Shannon tomorrow regarding how to send in the request and what is the appropriate way to explain that we are intern and doing our project for short term.

August 15, 2017/ Tuesday
Came back to work at usual time. Gail had placed a copy of TEMRAP student orientation schedule for August 16. Everyone busy planning and scheduling the events and welcoming the fall TEMRAP students. Looking forward to tomorrow orientation. Practiced data extracting from epic and put it in red cap. Finally, I completed with signed the delegation of authority form.

August 16, 2017/ Wednesday
Today was the first orientation for the fall TEMRAP students. Sean and I had volunteered to help Gail. We came early in the morning to make sure we are there for Gail if she needs any kind of help with about 100 students coming for orientation. The very first thing to take care was ID cards for all new TEMRAP students. Gail asked us to escort group of students after they are done with their photo taken to the orientation presentation room. After all the students got done with ID cards Gail started the orientation with her opening presentation. Gail presentation was about dress code and rules to follow in the Emergency room. She went over these issues in detail. Next presenter was Mario and KB. They also went over how to page the team when they find the potential subject for the study. Mario also explained that what not to page about patient such as patient name and
other personal health information. Dr. Ava also welcomed the new students and went over professionalism in Emergency room. During orientation, TEMRAP students were also given CPR presentation and demo. After that Shannon talked to the new TEMRAP students and went over research credentialing process and asked them to be patient. Shannon introduced Sean and I to the new TEMRAP students. It was very kind gesture. Students were also given tour of ER as well. The orientation went very smooth. In the end Shannon stayed back with students who had questions.

August 17, 2017/ Thursday

Today was day to shadow KB. She showed me first how to screen for my study in Epic. Every time we screen patient and click to learn more information about that subject we have to note the information in our source document. This is very important in case of we ever get audited. We should have proof and reason why we clicked to look into patient chart. We screen using our inclusion and exclusion criteria. Based on inclusion criteria, we include eligible subjects in the study. After we screen, KB and I went to emergency room to approach screened subject to get consent and recruit if they would be willing to participate. KB was going to do the consent and recruiting for my study today and I observed her through the whole process. When we got to the pod where the potential subject was in Emergency room, KB told me to introduce myself to them and tell them that I am from ED research department. Tell them briefly about the study and ask for their permission if it's okay to go talk to the potential subject. Most of the times they are okay with it unless patient is surrounded by provider or other team of health care. I was very excited to learn how KB will be taking consent and deliver the surveys. I was watching her with all my attention so I don't miss out anything. The first screened subject didn't want to participate. We respected her decision and thanked her for letting us come and talk to her. After that we approached the second
potential screened subject. We entered the room and introduced ourselves. KB went over the study and ask if he would be interested to participate. Subject said yes and KB went over the consent form and HIPAA authorization form. After that KB asked the subject if he has any questions before he signed. Subject signed both the consent form and HIPAA authorization form. KB wanted to go ahead and make copies of the consent form and HIPAA authorization form to give it to subject before we conducted the surveys. We came back inside the room and handed the copy to subject to keep him for his record. Then KB conducted demographics form. After the demographics KB went over short health literacy skill test which is 18 words with a key and distracted word. Subject was supposed to tell which one he thinks is closely related to the word given. Subject had choice for saying I don't know in case subject don't know the answer. After the health literacy survey, KB conducted Newest vital sign (NVS) to check numeracy level. In the end, we thanked the subject for his time and participation in the study. We came out from the subject room. KB told me to always check all the paperwork before I go back to office. Make sure I am not missing any paperwork and that signature and time and date is right and at correct place. We both reviewed all the paperwork. Then we headed back to office. Once we go to office, Shannon told me that every time someone enroll someone they ring bell. Although it was KB who took consent and recruited but it was for my study and I were shadowing her to learn, we both rang the bell. Later in the day, KB showed me how to enter the recruited subject information in the Velos and also in Epic on subject chart should be included as research patient. It was great day of learning. I want to thank KB for teaching step by step in detail. It was great help. Tomorrow KB is going to watch me taking consent and conducting surveys.
August 18, 2017/ Friday,

Reached office and checked my emails. Today was my turn to do all the work by myself doing screening, taking consent and enrolling while KB watching me if I am doing it the right way. Before I started screening, I made few more study packets for both English speaking and Spanish speaking. KB sat with me in my cube and she told me to start screening. As my study is about management of type 2 diabetes and association with low health literacy and numeracy, I screened keeping inclusion and exclusion criteria we have for my study. Few key pointers that I could look in Epic was patients admitted with very high HgA1c and coming in with chief complaints of hyperglycemia. Most of patients coming to ER didn't have diagnosis of type 2 diabetes. But if I dig deeper in the notes of the patient somewhere there is always a mention of medical history of diabetes. Well that's the whole point of screening. We short list potential subjects. And in doubt we always ask the provider to confirm the diagnosis. We got one potential subject screened. KB came with me to ER to watch me if I learned from her yesterday. I was kind of excited to do this part of the job. I wasn't nervous but at the same time didn't want to mess up anything. I guess it's all part of process and practice. I went to pod with KB. I introduced myself as member of research department from ED. And asked the provider gently if it's okay to go talk to the patient. Provider told us to go right ahead. And she also said if I have any questions regarding this patient don't hesitate to ask. I went in patient's room with KB. I introduced myself and mentioned about study. I asked the subject if he is interested in participating. Subject said yes. I told him before I go ahead and enroll you I have to go over the consent form and HIPAA authorization form with him and once he signs both these forms we can enroll him for the study. He agreed and gave me permission to go over the consent form and HIPAA authorization form. After reading to the subject I asked if subject had any questions. Subject then signed both the forms. I made copy of the consent form
and HIPAA authorization form to keep for his record. I asked demographics questionnaire from patients and it took less than a minute. Then I told subject that we are fine with one and only two surveys to go. Before I went ahead with short health literacy skill survey (SAHL), I told subject what to expect. Subject showed interest in going for this survey. We completed SAHL survey. The last survey was NVS questionnaire based on fake ice cream label to check on the numeracy. Subject was very cooperative. I completed both surveys along with demographics. I thanked subject for his time and for participating in the study. Since subject understood that he doesn't have any direct benefit from this study but he felt very good about helping future patients. I came out from subject's room. I checked all the paperwork to make sure all dates and signs are at correct places and I am not missing any important information. Finally, time came when I was to know from KB if I did okay? To my surprise, KB told me that I did an “EXCELLENT” job. It was great to hear these words and feedback. After reviewing all documents, we both went to office and then she told me to enter all the information by myself. I entered the information to Velos and added subject as Research participant in Epic. I again got to ring the bell. Later in the day I made more copies of study packets to be ready to recruit for the next time.

Week 13

August 21, 2017/ Monday

Reached office a bit early today than usual. First thing I did today was to work on flash cards for my SAHL survey for Health lit and T2D study in Spanish version. It took about an hour do complete this. Week 13. I am going to even start coming earlier than 8.30 to start screening and enrolling as many subjects as I can. Today I planned to make flash card for my study survey of
health literacy in Spanish (SAHL-S). It took a bit longer than I anticipated. I made these flash cards
in the exact format as for English version of health literacy survey (SAHL-E). Both are in
landscape lay out. I also made few more study packets ready in Spanish and English for this week
enrollment so they are ready to go. After this work, I started screening on epic for the patients to
enroll. I got two potential subjects with Type 2 diabetes. Both potential subjects met the inclusion
criteria. Today was the first day I had to do this process all by myself under no supervision.
Shannon is so encouraging and wished me luck. I went to Parkland ED. My badge still didn't work
but I could get in with permission at front desk. I went in the pod where the potential subject was
admitted. I introduced myself to the provider and nurses at the work station. I asked for their
permission to go talk to the patient. Before entering the room, I opened the blind of the patient
room to check if patient is sleep or is being attended by a nurse or other resident,
physician/provider. Patient was alert and lying down. I knocked the door and entered in the room.
Again, I introduced myself to the patient and confirmed patient first and last name. I asked if it's
okay for me to tell them about my study and if they would be interested to participate. Patient said
yes and I gave an overview of the study. Then I asked patient is willing to participate and patient
agreed. Before I could enroll them in the study I told them that they have to sign the consent form
and HIPAA authorization form. I read it to them and asked them if they have any questions before
they sign. Patients willingly signed the consent and HIPAA authorization form. Then I conducted
health literacy survey (SAHL-E) and numeracy (NVS) survey after demographic form. After I
completed the study survey I made copy of the consent and HIPAA form for the subject to keep it
for their records. It also had Dr. Derricks (PI of the study) phone number if they have any questions
regarding the study. I thanked the subject for their time and participation in the study. And came
out from the room. After I came out from the room, I checked the whole study packet to see if
anything is missing. Then I filled in the appropriate information on data collection sheet. I also put in the date for the 30 days follow up visit to ED. There was another potential subject in another pod at ED that I screened on epic in the office. So, I went to that pod and nurse told me that patient left. So, couldn't enroll that subject. Then I went back to UT medical center building to our ED office. Shannon asked me to ring the bell as I enrolled another subject. Yay. Thanks to Shannon for all her wisdom and guidance. Hoping to keep learning. Shannon discussed about the timeline with me and Sean. We will make a draft for each of our study timeline and try to follow that. I have a 30 day follow up so keeping that in mind, I am looking at roughly 5 weeks to enroll. I emailed Dr. Mathew and Dr. Caroline and update them about start of the study.

August 22, 2017/ Tuesday

Today day was busy day. I reached office and logged on to epic. Started screening subjects. I screened 3 potential subjects on epic for my study. Gathered my study packet and copies for Spanish and English version of both surveys and consent forms along with demographics. I went to approach the first subject in the pod. Started with Introducing myself to the providers and nurses and asked about my screened subject. Got green signal to go talk to the subject. This subject preferred language was Spanish. For this we requested the nurse to page for an interpreter for us to take consent for this subject. This was my first attempt at preferred Spanish language subject with interpreter. KB was in ED with Sean. So, she told me that she can observe while I take consent and enroll this subject. The whole process was pretty much similar like for English speaking subject, except, I took pauses in between and let the interpreter translate for the subject. It went smooth and subject gave the consent and agreed to participate in study. I enrolled this subject and interpreter conducted both surveys SAHL-S & NVS-S. I made copy of the consent form and gave it to the patient to keep. Original consent form was kept in the subject packet. I came out of the
room saying thank you for their time and to participate in the study. Then I went to the other pod to approach to my second screened subject. This subject was English speaker and diagnosed with Type 2 Diabetic. Met the inclusion criteria. Subject was very cooperative and was happy to be part of this study. Subject did show a concern about how difficult it is to everyday look for portions of every food and all nutrition value bring diabetic. Subject even said wish there was diabetic diet and diabetic sections of food row just for patients with diabetes so they don't have to worry about portions. So, this was my second subject for the day I enrolled. The third screened subject had Type 2 diabetes and came in to ED with chief complaints of hyperglycemia. On the ED notes the HbA1C was sky high. Subject had poor control of the diabetes. But I couldn't enroll that subject as the subject was homeless. After I enroll the subjects I went back to office. The next step is to enter the enrolled subjects for my study in Velos. KB showed me the steps to enter the patient in velos. Then I also added Follow up date for each subject enrolled and put it in my calendar. So far, I enrolled 5 subjects for my study in 4 days. Today I got to ring the bell twice at Shannon’s desk. Yay!!!!Made more study packets for tomorrow.

, August 23, 2017/ Wednesday

Today I enrolled two Spanish subjects for my study. I spent most of my day at the ED. For both of my Spanish subjects I used interpreter. The process is although same as for the English consent and enrolling but when the interpreter is involved it takes a bit more time. This is expected as I have to take pause in between and wait for the interpreter to translate for the subject. Since it is ED the interpreters keep getting calls all the time from the providers and from the OT, so one of the interpreter told me to schedule the meeting ahead of time to be present for the consent and surveys. I didn't think it will work out for our study as by the time we get an interpreter patient can be discharged from ED or gone for X-ray or may be admitted to the hospital. Well after I finished
enrolling both the subjects I went back to office and discussed interpreter concern. Shannon talked
to the interpreter coordinator and explained her about our study requirement as an interpreter.
Shannon told her that we don't want to discriminate between Spanish subjects for their language
barrier. So, we were given a choice to take consent by interpreter on the video call.
Shannon has put in the request and will wait on IRB approval if we can use the interpreter on video
call for our study. I filled the data collection sheet with all the information required and put in the
enrolled subject entry to Velos. Made more copies for the Spanish and English study packets ready
for the next day recruiting. And called it a day.

August 24, 2017/ Thursday

Today I went to ED right after dropping my stuff in the office. I quickly screened and got study
packets. I enrolled two subjects. After enrolling I entered the subjects in Velo. So far, I enrolled
total of 9 subjects and I thot its good idea to start putting the dataset in excel spread sheet. I entered
all my 9 subjects. I wanted to make sure that subjects I enroll should be entered in all the places it
is required. Shannon helped me with excel spreadsheet. After I finish the work I made more copies
for tomorrow.

August 25, 2017/ Friday,

Another round of orientation for our fall TEMRAP students. Me & Sean were helping Gail get the
students get badges and escort them to room where they will get the presentation about dress code
and program itself. Today I couldn't enroll subject as were at orientation session. Dr. Miller gave
CPR demonstration to the TEMRAP students. Gale went over the policies and dress code. Mario
went over HIPAA breach and cell phone policies around patients in ED. Came to work in the
morning at normal time. Today I didn’t enroll any subjects. Also, Shannon helped me with my xl
spreadsheet for my study as well today. I wanted to start working on it so I can enter data for my
study and not get behind on this. Shannon created the demographics sections along with codes for each one of the category. I had enrolled 9 subjects so far in one week. I entered data for all of my 9 subjects in the spreadsheet. Now I can keep entering data as I enroll. I worked on making more copies of study packets. I found paper protector for my flash cards and I reprinted the flash cards for my SAHL-E & SAHL-S surveys and put it in protector and back in binder. This was more of an easy step for me as its easier to flip the flash card and smoothly while conducting questions from the flash cards to subjects. Without the paper protector, the page was ripping and it was not as smooth action to turn around the pages. I wanted it to look more professional. I am ready for the weekend. I am so looking forward for the next week to enroll more subjects and continue working on my project. I am loving my job. Thanks to Shannon for making this work so much fun as her guidance and mentorship helped learn things in right way. Once you do things in right way, and know what you are doing makes you feel content.

Week 14

Monday August 28, 2017

Today I couldn't go to office because I was trying to accommodate few families because of Harvey. These families had gone to vacation to Canada and due to hurricane Harvey, they couldn't get flights back to Houston. They extended the flight but couldn't get any flights but only to Dallas. Their houses got all flooded and all roads and train commute was all shut off. It was quite chaotic and overwhelming with 20 people with kids and a grandmother at home. The grandmother got sick because she needed refill on her blood pressure medicine. Shannon was very considerate and told me to take care of Harvey victims.

Tuesday August 29, 2017
Today was good day and I started my day by screening patients on epic and then went to ED. I enrolled two subjects today. One of the patients had come to ED due to renal complications and had been diagnosed with chronic renal failure which will require Dialysis. The other type 2 diabetic had come because he was losing his vision slowly and getting worse. So far, my experience in enrolling for my study about health literacy and numeracy with Type 2 diabetes management does seem to have some association. But I do saw that patients have tend to have low numeracy than health literacy. Lots of the patients had adequate health literacy but low to none numeracy levels. At this time, it is too early to say about any association.

Wednesday August 30, 2017- Friday September 1, 2017

Today one of the Harvey victims who's staying at my house got sick. This was the second person getting sick in 3 days. I was trying to keep things sanitized for the rest of us hoping no other person gets sick. Shannon gave me permission to take care of things and try to be supportive for these people in need. Glad we are able to help. On Thursday third member of their family got sick. It was getting overwhelming. I got a bit worried about the little kids they have and for my kids as well. These people were trying to find the routes that were open to go to Houston but most of them were closed. Roads, trains and flights were on hold until otherwise. I couldn't recruit patients for these days and this made me really sad as well. As I couldn't be at both places at the same time. So, I tell myself that this is life and its surprises. It's not always as you planned.

Week 15

Week 15 start was long weekend. I was still having Harvey victims at my place. In spite of all the precautions and being careful, I couldn’t save myself from bot getting sick. Got my little girl, my husband and I fell sick and that was indeed made me stressed. I couldn’t take this at this time of
my internship. I kind of panicked but Shannon was very supportive and she calmed me down. She told me everything will be alright. She told me not to stress and work on getting better. Got flu and sick with acute tonsillitis & sinusitis. Went to see the doctor and also got doctor note. It was mixed with some virus so couldn’t come to and definitely didn’t want to spread the germs.

Week 16
Sept 11, 2017/ Monday,
I was still not feeling too great but definitely not miserable. I went to work and recruited one Spanish subject. I screened two subjects and both were Spanish preferred language speaking. I used interpreter for both of the subjects. One of the subjects were very confused and was having no to none vision. She didn't have her glasses and kept asking for Spanish consent form even though the consent form we have her was in Spanish. Since the subject couldn't understand and was very reluctant either due to blurry vision or she couldn't read the Spanish consent form, we couldn't enroll her. The second subject we enrolled had come in for right leg pain. She agreed to participate. She had diabetes and also had some blurry vision. But she could read the health literacy flash cards just fine. After the subject was recruited I entered in the Velo and did the data entry on excel spreadsheet. So far, I have 12 subjects enrolled. Looking forward to more enrolling this week.

September 12, 2017/ Tuesday,
Another day to recruit one more subject. Stayed late in the evening. I screened three subjects. Went to ED and started with the first one. First subject was in L pod and I found out that patient was altered mental status. So, couldn't recruit for our study as subject couldn't give verbal consent. I went to next pod and asked the provider for my screened subject. Provider told me that she just
got discharged from ED and have been shifted to ward. Patient had diabetes with chronic renal disease. Patient also had diabetic ketoacidosis without coma. I approached my final screened subject and got her to sign the consent and enrolled her. The subject was very friendly old age female. She had diabetes for all her life she said. Got diagnosed with DMII in her late thirties. She was very happy to be part of the study. She understands that her participation will not affect her directly but she will be helping out future diabetes patients to help manage their disease effectively by simpler tools and education about diabetes. After the subject finished the surveys I made a copy of the consent form and HIPAA authorization and gave to the subject to keep it for her records. The subject was wise old lady and was very spreading her wisdom by telling me stories and experiences. It took a bit longer than other subject for the whole recruitment and surveys but I felt she needed someone to listen to her and few minutes I gave her made me feel quite content. So, out of three screened I got one subject enrolled. I entered subject information in the Velos and excel spreadsheet. Later in the day I gave few hours to revise my time line for final report and PowerPoint presentation.

September 13, 2017/ Wednesday

Today was long day at work. But got lots of work done. Screened two subjects. So, went to ER to recruit. First subject was Spanish speaking. And I would require an interpreter for the Spanish subject. I went to pod and asked the nurse if they could page an interpreter for me. Staff is very supportive and helpful. We just need to be cautious not to interrupt the flow of the emergency room and not to disturb provider in providing their standard care of treatment to the patients. It's an emergency room and it's always busy with new admissions and patient’s needs. So, I try to be very careful and ask only when it is appropriate and it's not taking them away from their important work. The nurse paged the interpreter. After an hour of wait, I told nurse that I am going to go to
the other pod to recruit another subject. As two Interpreter came but they told me that they are very busy and my study is going to take 15-20 minutes of the time and they cannot give that much time to one call. And they said they will send somebody else. But no one came. So, I had to move on to my next screened subject. I checked on that subject from the provider and found out that patient had been admitted to ward and been moved. I returned to check on my first Spanish speaking subject in the pod if I got any call from interpreter. The nurse paged again for the interpreter. I waited another hour and a half. Finally, after waiting for two and half hours I finally got an interpreter. Now the question was what if subject don't want to participate. I approached the subject along with my interpreter. We explained the study to him and asked if he would like to participate. And yay!! He did say yes. He signed the consent form and HIPAA authorization form. I conducted the health literacy survey and NVS which is the newest vital sign survey for checking the numeracy with a fake ice cream label questionnaire. Demographics survey was also conducted. Subject was given the copy of the consent form to keep it with him. Like for other subjects I entered the data into the excel spreadsheet and entered subject information into Velos. I am trying my best to enter data and subject information as I recruit so that I don't have any pending work. It helps me being organized and not miss any important information. I stayed late in the evening at work. After the subject recruiting and data entry, I worked on my journal. I also started working on my PowerPoint and final report brainstorming. Had a great day at work. Learning each day more and feeling accomplished by end of the day. Shannon has been the greatest mentor anyone can ever ask for. She is awesome. Look forward to Thursday to recruit more subjects.

September 14, 2017/ Thursday,
Screened patients in epic. Recruited one eligible subject. Collected data and entered data in excel spreadsheet. Today Shannon helped Sean and I do the numbers for our studies. We wanted to evaluate the rate of recruiting per day and see if we will be able to reach the power or not. We wanted to keep the committee posted about this so it is not that of a big surprise at the end.

September 15, 2017/ Friday,

It was long Friday but fun Friday. Sean, Mario, Shannon & I had gone for team lunch. Today I didn't recruit as I was working on extracting data from epic for STEMI study for Shannon. Today Shannon asked me and Sean to do presentation on our studies for TEMRAP student leaders so we could train them how to screen, consent and enroll. I made copies of study packets for the TEMRAP student leaders. I went over the whole process and gave them a descriptive presentation.

Week 17

September 18, 2017/ Monday

Screened 20 patients on Epic so far. Five of them fully fit in the inclusion criteria. I went to ER and approached the first screened subject. Patient was having pain and he was confused. Since the patient was confused and not in state that he could give informed consent. Therefore, I could not take consent so that made him ineligible. After this I went to the next pod to check the status of my second screened subject. This subject had Spanish as preferred language. I introduced myself and asked the nurse if it is oaky to approach the patient at this time. She gave me permission and so I asked her gently to page an interpreter for me. As always, I had to wait. One interpreter came and told me he is very busy so I will ask my office to send you some other person for you. Well after waiting for about 40 minutes (Luckily way less time than 2 hours) I finally got an interpreter ready to help me out for my study survey. I enrolled the subject and thanked the subject and
interpreter. Right after this I walked right to next pod to approach my third screened subject. I found out by the providers in the pod that subject left the ER. Next subject was English speaking women and doctor told me that she got pain medicine and she is knocked out. Well I could not enroll and there was no point if patient is not understanding about what’s written and being read in consent and HIPAA authorization form. It was time to go to the last screened eligible subject for the day. Another Spanish speaker. Couldn’t do it without the interpreter. So, I requested the nurse to page an interpreter for me. I waited for an hour but it was worth it all. I enrolled my second subject for the day. Great day. Spent almost all day in ER. Came back to office and entered all the data collected. I also added patient in Velos. Called it a day.

Tuesday September 19, 2017

Worked all day on STEMI. Also had research meeting. Attended the meeting. Dr. Idris went over all the studies that are active and asked the research team if there is anything anyone needs to talk about. I did not enroll today. Shannon needs some help with STEMI study in data extracting. The deal was that we give at least work on two days of week on this data extracting. Shannon is very kind and told us to focus on our study. But she has so many deadlines on her plate and Sean and I want to help her in that. Shannon is planning to work on the weekends in the office. I will company her too. Today Sean and I worked together on STEMI study as Sean been working on few MRN and Shannon has not sent me the MRN to work on yet. I reminded her in the evening and sent her the email. She finally sent me list of MRN to work on. So, tomorrow I can work myself on those for her.

Wednesday September 20, 2017

Worked all day on STEMI. Today I started working on MRN list that Shannon has provided me. I got into a problem accessing scanned documents in Epic. I couldn’t download the scanned
documents that are pertinent to extract information for study. I had to call Parkland help desk. They told me that they will add me to get the access. But it will take 6 hours to sync to the computer. I couldn’t extract all the data required but filled in rest that I could find access to. I will check on Thursday if the issue has resolved or not. Internship is going at a very fast pace now since we credentialed. It is absolutely fun when there is action and activity happening that creates learning environment.

Thursday September 21, 2017

Screened more patients in the Epic. I found five eligible subjects who fit in the eligibility criteria for my study. I went and approached all of them. Three of these screened subjects are still in waiting room so cannot enroll them. I will check on them in Epic after I take care of my two eligible subjects. One of them refused as the subject was in distress and lots of pain. I had to call in nurses for him as he requested me to call for help as his pain intensity is getting stronger in his chest and legs. This subject had uncontrolled diabetes and come in with chest pain and cellulitis of the legs. He was not able to breathe as well. He had oxygen mask on him which he took it out. I could not enroll him. Well I went to my next screened subject, who was Spanish speaker. I requested the nurse to page an interpreter for me. Well I had to wait a little bit which is totally okay with me. Interpreter finally came and I was able to enroll this subject. This subject was 57 years old male with type 2 diabetes. He was non-compliant with his medicines and diet according to her daughter. Subject had very poor vision and was developing diabetic retinopathy. Subject also had foot amputation due to his poor glucose control. He had developed end stage renal disease and was on weekly dialysis. His health literacy was low and no numeracy skills. While I was in the ER, one of the provider told me that there is a patient with type 2 diabetes and she is on the bed in the pod and waiting to be in the room. She got transferred from some other pod. She was
given pain medicine for her abdominal pain. Physician told me that I could approach her. She was right there waiting to be in the room. I approached but her husband told me that he would not want her to be disturbed. So, I had to respect that and could not enroll her. I came back to office and first checked back on my three potential subjects that were still waiting to be seen. Unfortunately, they were still in waiting room. Then I entered data for my today’s enrollment and entered subject in the Velos. After doing that I started on one month follow up revisits of the subjects in the Epic. Shannon showed me how do record that. So far, I did follow up revisits on my first 4 subjects enrolled back in august. I have started to feel one month follow up is not realistic as I didn’t see lots of office visits for the patients I were following up but no ER revisit. Shannon thinks that it’s better to extend the follow up period to 3 months and she will have to resubmit a mod to IRB for this. Shannon might do this modification for the next students who will take over the study after I am gone. Here is one limitation of my study right there, too short of follow up time.

Friday September 22, 2017

I enrolled three subjects today. One of them was my Spanish subject. Today I didn’t have to wait long time for the interpreter. Although she had to leave in the middle of my study survey to attend another call. She did come back quickly and I only had to administer numeracy survey. The other two subjects I enrolled were English speaking. So. I didn’t need help from interpreter. I had one more potential subject. I went to check on that subject in another pod. The provider there told me that he has been discharged. The provider also told me there was another type 2 diabetic just arrived in that room but he is schizophrenic and homicidal. These two are exclusions for our study. Today I also had to restock my study packet. So. I made copies for both Spanish and English versions. I also entered my data collected in my spreadsheet. Entered patients in Velos as well.
Week 18

September 23, 2017/ Monday

Back in office the same time in the morning. It was time to follow up on few subjects I enrolled last month. So, I went in Epic to record that information. There has been no ED revisit of my first 9 enrolled subjects a month ago. I looked into their SAHL and NVS score again to find what is the pattern. The very first subject for my study had adequate health and numeracy level scoring. For SAHL subject had 15 and on NVS subject had score of 5, which shows adequate health and numeracy levels. This subject had 0 Emergency visits. But subject had follow up 4 visits in this month and subject attended all these visits. One visit was No show and this is in addition to three other office visits. Almost all subjects I was doing a month of follow up check had not returned to ED but they all had several office visits. I think one moth follow up is too short of a window. As some of these subjects have been admitted to Emergency department and also from ED if they are worsened specially diabetics with ulcers and renal disease leading to end stage renal disease gets admitted to hospital and get transferred to ward. As we are not following up for the subjects who gets admitted to the hospital so it is not sure how many days they been in the hospital. Well, I will continue to recruit and collect data. One more very interesting thing that coming to the notice from study is that most of the subjects even with low education level are able to do well on health literacy but NVS is turning out to be badly scored even with having great health literacy score. It is interesting when you actually do the study and see the results and associations and sometimes it turns out to be expected and sometimes it’s a total surprise, saying that definitely it leads to many new roads. It tells you limitations of your study as well. Tremendous amount of learning privileges and I am grateful for each day at internship.
September 26, 2017/ Tuesday

Tuesday was busy day. I looked up in EPIC for my previous subjects whose one month follow up date was toady and I recorded the number of their revisits to ED. I also enrolled two new subjects. Collected data from my new subjects and entered in the system.

September 27, 2017/ Wednesday

I had to finish few of UNT work today. Got an email from Carla reminding it’s time to submit our Intent to Defend form. Filled that and I will have to now schedule a day to go to UNT Fort Wort to get all advisory committee signatures and will hand it to Carla. I also did training for parkland. It was Abuse and Neglect. Another training mandatory was on Emergency Operations Response Plan 2017. I also submitted the disclosure statement for UNT that Dr. Mathew had reminded Sean and I to complete. Time is coming pretty soon for the real date for Defense. I am starting to get a bit nervous and overwhelm. I have started to work on my deadlines and final report and power point for the presentation.

September 28, 2017/ Thursday

Worked on looking into details of health literacy and numeracy topic. Watched related videos on it. Today I worked from home. Needed some time to catch up and put together stuff for upcoming thesis. I think it is the right time to start concentrating on the writing and reading to get ready for the defense. Shannon emailed us today to make packets for our studies with instructions to keep it in Emergency in a locker for TEMRAP students. So, on Friday this is the first thing I would be doing.

September 29, 2017/ Friday

Worked on making Study packets and two separate binders for TEMRAP students. I included the instructions how to go over inclusion and exclusion criteria for selecting potential eligible subject
for the study. Patients with diabetes must be presenting with complications associated with T2D and they should have been diagnosed with T2D. T2D patients can present with variety of symptoms associated with diabetic related complications. Patients can present with chest pain, shortness of breath and palpitations if their diabetes is complication to cardiac failure. Patients could present with just weakness in arms or legs that could be potential signs and symptoms of peripheral neuropathies. One commonly presenting symptom of the enrolled subjects by me was flank pain. These patients were on the dialysis and had chronic renal failure. Some could present with hyperglycemia or syncope episodes. Lots of these long-standing diabetics were coming in presenting with blurry vision which is sign of developing retinopathy. Sometimes patients even present with nausea and vomiting. On getting more history it shows that either they skip the medicine dose or skip a meal and can lead to change in their blood glucose levels to fall or go up leads to syncope, nausea and vomiting etc. By saying this means that Diabetic patients who presents to Emergency room can have a range of non-specific signs and symptoms. While looking into inclusion criteria, we must be very careful of the exclusion criteria as well. Patients can be typical potential subject for our study but if patient is female we have to make sure she is not pregnant. We can either do it in EPIC while prescreening and if still not sure I would ask the provider before enrolling her in the study. We want to make sure patient with T2D is not under use of any current drugs that can cause Psychosis. We cannot enroll homeless as we will have no way to reach them out for our follow up recidivism data. I also included in the binder results and scoring for SAHL & NVS surveys. I made flash cards for SAHL-E/S for both binders. Then I included extra 4 study packets for each English and Spanish version ready to use to enroll subjects.

Saturday September 23, 2017
This weekend Shannon is working to catch up on STEMI study. I had promised and volunteered to help Shannon and give her company on Saturday. I had decided to stay overnight. On Saturday, I finished the one MRN I was working on for STEMI study. Thereafter, I worked on drafting power point for my thesis presentation. Sean and Mario were also with us helping out for Shannon in STEMI study. We all had dinner together. After Sean and Mario left, Shannon and I stayed back and worked all night working on STEMI and other catching up on work. It was great experience. Shannon is my inspiration. She stayed in the office all weekend working for Dr. Maya’s multicenter unfunded STEMI study. I am really glad that I had this opportunity to work with Shannon and learn so much in my internship. She is awesome mentor anyone can ask for.

Week 19

October 2, 2017/ Monday

Started with my Final report. I am going to start working on each section and will try to send it to my major professor Dr. Stephen Mathew from now on so he could do the revisions. We have to send in our final report to the whole advisory committee two weeks prior to the defense. I also have to start working on summarizing the daily journal as well. Today I am working on the background section for my final report. Shannon also emailed stat expert to analyze data for mine as well as Sean’s study. I revised my first three reference articles. Made notes of what I found different after study actually started. I had few questions to ask from Shannon. Later in the afternoon, got an email from Shannon that we can meet with the Biostatistician on Tuesday at 3.30 pm. I am really excited to look at the results of my study. Once I get the data analyzed, I will schedule a day and time to go meet with Dr. Mathew.

October 3, 2017/ Tuesday
In the morning, we had research team meeting with Dr. Idris. Today we had scheduled the meeting with the Biostatistician, Beverly Huet at 3.30 pm. We reviewed the protocol with Beverly. Briefly went over the aims and hypothesis of the study. I showed her my data and she was happy to see clean data. Thanks to Shannon who help me put in and code each demographic element and other data. Beverly told us that she can have the data analysis ready before she goes to her vacation from 16 October onwards. We are expecting to have results of our data by October 15, 2017. I emailed Dr. Stephen Mathew and updated him on analysis report.

October 4, 2017/ Wednesday

Today we had Emergency Department staff meeting. Today’s meeting was quite interesting. We did a little exercise about creating a super smart fictitious Emergency employee by bringing four best traits that each person with a group of four can bring it to table. Then we were told to create this unknown totally imaginary perfect employee and make a report. The point of this exercise was that how each employee has something to offer and this helps making a great team. In the meeting, lots of employees were acknowledged to go above and beyond to work for some special projects.

Today Dr. Deborah Derricks introduced me to third year medical student and he is fully credentialed and would help me enroll for my study I am so excited. I would want to do more enrolling myself but since now the time constrains of writing thesis report and getting ready for defense and all the formalities before that making me spend most of my time on these. Today, Sean and I made a timeline for our defense presentation. We divided the work and created time table to finish our power point presentation, journal summary, final report, analysis of report and also decided to do mock presentations for practice to each other.

October 5, 2017/ Thursday
Today I started working on my power point slides. I watched videos on health literacy of their round table discussion on health literacy hosted by Institute of medicine (IOM). This discussion had lots of pioneer’s speakers that shared their thought on health literacy and the kind of work they had done on past and planning to continue doing so in future. This session is from September 2012 and it was being hosted in New York.

Friday October 6, 2017

Today was all day working on my thesis work.

Week 20

October 9, 2017/ Monday - October 10, 2017/ Tuesday October 10, 2017

Worked on my thesis. I worked on completing Journal summary and Internship experience.

October 11, 2017/Wednesday

Enrolled 4 subjects today. Two Spanish and two English speaking. It was long day at work. Even though I have submitted my data for analysis, I am going to continue to enroll for the study as much as I can. It will not be a huge number as I have only few weeks to left for my defense and have deadlines coming to submit stuff related to my dissertation.

Week 21

October 16, 2017/Monday

Today all day I worked on my data analysis report. Completed the demographics analysis and wrote it in my final report. I sent it to Shannon for my first edits. Also started on results section and writing SAHL results. Regarding demographics, majority of my enrolled subjects were of some Hispanic origin. There were not striking difference between gender although males tend to have more of T2D in my pool of sampled data. Data in demographics also indicated that most of
the enrolled subjects had annual income less than 10,000 annually and were uninsured. SAHL scoring was skewed to the left, which means median is smaller than mean. % had adequate health literacy showing in SAHL survey. I was supposed to go meet Dr. Mathew but he's having a deadline for grant submission. I will see him either Wednesday or Thursday depending on his availability and will go over the data. I also have few questions regarding the Defense day as how many copies of my presentation should I bring? I have to ask the committee about any dietary restrictions as Sean and I planning to cater the food on defense day for our advisory committee.

October 17, 2017 Tuesday

In the morning, we had regular research team meeting. ESETT study has started and community consultation for ESETT October 7, in Spanish fest was quite a success. This Saturday is upcoming Asian fest and another community consult will be conducted for ACCESS study. Community consultations are great way to find out what people think of particular research and if they would be willing to take part. They are given to opt out option and bracelets are given who choose not to be part of study. In the afternoon Shannon and I went over my drafts for demographics and results of SAHL scoring.

October 18, 2017 Wednesday

Today in the office worked on initial revision done by Shannon on my demographics and Results section. I created pie charts to know health literacy level among Hispanic vs Non-Hispanic. I set up meeting with Dr. Mathew for Thursday to go over few questions for the defense day.

October 19, 2017 Thursday

Today I went to Fort Worth and met with Dr. Mathew. It was wonderful meeting with Dr. Mathew. He went over the format that is required for the final thesis report. I also asked him about his advice
on catering for advisory committee. Should Sean and I should bring lunch or snacks. We also went over the time line for the day of the defense.

October 20, 2017/ Friday,

Worked on thesis all day. Did first corrections to Shannon's revisions. First thing I did was to change the format to according to the template sent by Dr. Mathew.

Week 22

October 27, 2017/ Monday –Friday

This week implemented all the corrections by Dr. Mathew and Shannon. The whole focus was to complete the project report by the end of the week and send it to the advisory committee by Monday. Sean and I made a road map for the next two weeks before my defense. I scheduled the mock interview session with Dr. Mathew. I emailed asking Dr. Caroline Rickards if I could meet with her before the defense. Shannon and Dr. Pierce also agreed to keep a practice session before the defense. Shannon has told us that for next two weeks that Sean and I don’t need come to office but we may come just to practice our presentations. There are no words that can express the thank you to Shannon and Dr. Pierce for helping us prepare for our defense.