Northwell Health

RESEARCH PROTOCOL

Protocol Title:	Assessment of Glycemic Control in Patients with Type 2 Diabetes Mellitus and Late Stage Chronic Kidney Disease
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IRB Number:	17-0531

Guidelines for Preparing a Research Protocol

Instructions:

- You do not need to complete this document if you are submitting an *Application for Exemption* or *Application for a Chart Review*.
- Do not use this template if:
  - Your study involves an FDA regulated product. In this case, use the *Clinical Trial Protocol Template.*
  - Your study has a protocol from a sponsor or cooperative group. In this case, use the *Protocol Plus*.
  - Your study is a registry or repository for data and/or samples, In this case, use *Protocol Template – Registry Studies.* .
- If a section of this protocol is not applicable, please indicate such.
- Do not delete any of the text contained within this document.
- Please make sure to keep an electronic copy of this document. You will need to use it, if you make modifications in the future.
- Start by entering study information into the table above, according to these rules:
  - Protocol Title: Include the full protocol title as listed on the application.
  - Investigator: include the principal investigator's name as listed on the application form
  - IRB Number: Indicate the assigned IRB number, when known. At initial submission, this row will be left blank.
- Once the table information in entered, proceed to page 2 and complete the rest of the form.

↓ Continue to next page to begin entering information about this study ↓

1. PREVIOUS STUDY HISTORY

Has this study ever been reviewed and rejected/disapproved by another IRB prior to submission to this IRB?

☒ No ☐ Yes – if yes, please explain:

2. BRIEF SUMMARY OF RESEARCH

- *The summary should be written in **language intelligible to a moderately educated, non-scientific layperson**.*
- *It should contain a clear statement of the rationale and hypothesis of your study, a concise description of the methodology, with an emphasis on what will happen to the subjects, and a discussion of the results.*
- *This section should be ½ page*

Diabetes control is often assessed by tests of glucose levels over time, such as the glycosylated hemoglobin A1c (HbA1c) and fructosamine. In the later stages of chronic kidney disease (CKD) there is limited data available on the utility of these tests. There are reasons to believe that the tests may be less accurate in this population. Continuous glucose monitoring (CGM) offers an effective method for understanding the totality of glucose exposure and incidence of both hyperglycemic and hypoglycemic excursions. In the proposed study we plan to utilize CGM in patients with late stage CKD stages 3b-5 to 1) determine accuracy of HbA1c and serum fructosamine testing as measures of glucose control in patients with Type 2 Diabetes Mellitus (T2DM), 2) better understand test characteristics in the late stage CKD population (correlation, linear equation, slope, Y intercept, average glucose at different HbA1c levels), 3) develop a preliminary understanding of how test characteristics differ in late stage CKD compared to other patients with diabetes, 4) quantify time burden and number of episodes of hypoglycemia, 4) study hyperglycemic burden and 5) analyze glucose variability. The research staff will explain the study to patients that meet all inclusion criteria. Patients will get time to understand the study, review the consent document, ask questions to the PI, and then provide their consent to participate in the study. On Day 1 of the study, a CGM (Freestyle Libre) device will be placed on patients with CKD 3b-5 which will be worn for 14 consecutive days. Patients will return on Day 14 to remove the CGM device. HbA1c and fructosamine values will be drawn on Day 14 and these results will be compared with average glucose monitoring values as recorded on the CGM device. Incidence, duration, and severity of both hypoglycemic and hyperglycemic events will be analyzed. It is our hypothesis that there will be significant variability in the serum HbA1c values when compared with calculated HbA1c from CGM readings. We also hypothesize that the results will reflect a greater incidence of hypoglycemia in this population by CGM analysis.

3. INTRODUCTION/BACKGROUND MATERIAL/PRELIMINARY STUDIES AND SIGNIFICANCE

- *Describe and provide the results of previous work by yourself or others, including animal studies, laboratory studies, pilot studies, pre-clinical and/or clinical studies involving the compound or device to be studied.*
- *Include information as to why you are conducting the study and how the study differs from what has been previously researched, including what the knowledge gaps are.*
- *Describe the importance of the knowledge expected to result*

- Studies evaluating the accuracy of HbA1c and fructosamine values in patients with T2DM and CKD 3b-5 is scarce. A pilot study by Konya, Nq, Cox, et al., evaluated the accuracy of HbA1c in 15 T2DM patients with CKD3-4 receiving iron or erythropoiesis and concluded that other glycemic markers such as fructosamine or glycated albumin maybe valuable markers in assessing glycemic control in this patient population. Another pilot study by Vos, Schollum, et al., evaluated HbA1c, glycated albumin, and fructosamine in 25 patients with CKD 4-5 matched with T2DM patients with no renal dysfunction. These patients wore a CGM device for only 48 hours. The results of this study indicated that glycated albumin was a better marker than fructosamine and HbA1c in patients with CKD 4-5.
- This investigation is an attempt to add to the current available literature by assessing the accuracy of HbA1c and evaluating if fructosamine and/or CGM data are better tools for short term and long-term diabetes management in patients with CKD 3b-5 (not on hemodialysis (HD)) specifically. Our aim is also to assess the incidence of hypoglycemic and hyperglycemic excursion in these patients by CGM analysis.
- This study allows us to understand which marker (HbA1c, fructosamine, CGM data) is most reliable for diabetes management in patients with CKD 3b-5. Hypoglycemia in this specific subset of patients poses significant risks to increase morbidity and mortality. Improvement in such knowledge of glycemic control will lead to decreased morbidity and mortality in this population.

4. OBJECTIVE(S)/SPECIFIC AIMS AND HYPOTHESES

- *A concise statement of the goal(s) of the current study.*
- *The rationale for and specific objectives of the study.*
- *The goals and the hypothesis to be tested should be stated.*

- The goals of our study is to 1) determine accuracy of HbA1c and serum fructosamine testing as measures of glucose control, 2) better understand test characteristics in the late stage CKD population (correlation, linear equation, slope, Y intercept, average glucose at different HbA1c levels), 3) develop a preliminary understanding of how

test characteristics differ in late stage CKD compared to other patients with diabetes, 4) quantify time burden and number of episodes of hypoglycemia, 5) study hyperglycemic burden and 6) analyze glucose variability.

- It is our hypothesis that there will be significant variability in the serum HbA1c values when compared with calculated HbA1c from CGM readings. It is our hypothesis than the incidence of hypoglycemia will be high in patients with CKD 3b-5.

5. RESOURCES AVAILABLE TO CONDUCT THE HUMAN RESEARCH

- *Explain the feasibility of meeting recruitment goals of this project and demonstrate a potential for recruiting the required number of suitable subjects within the agreed recruitment period*
    - *How many potential subjects do you have access to?*
- *Describe your process to ensure that all persons assisting with the trial are adequately informed about the protocol and their trial related duties and functions*

- We have access to an estimated 300 patients with CKD 2-5 and ESRD on HD at the Northwell Division of Nephrology and Endocrinology and at Winthrop University Hospital's Division of Nephrology clinical practice. Among these patients, we hope to identify T2DM patients with CKD 3b-5 not on HD and aim to recruit 80 subjects for our study.
- The Division of Nephrology and Endocrinology at Northwell and The Division of Nephrology at Winthrop Hospital will have an initial meeting with all research staff to explain the study protocol and design. Moving forward, the PI and assistant investigators will frequently meet with the research staff at scheduled meetings to discuss updates and concerns relating to the study..

6. RECRUITMENT METHODS

- *Describe the source of potential subjects*
- *Describe the methods that will be used to identify potential subjects*
- *Describe any materials that will be used to recruit subjects. A copy of any advertisements (flyers, radio scripts, etc.) should be submitted along with the protocol.*
- *If monetary compensation is to be offered, this should be indicated in the protocol*

- Patients will be recruited from the offices of Northwell Division of Nephrology and Endocrinology and at Winthrop University Hospital's Division of Nephrology clinical practice.
- Among these patients, we hope to identify T2DM patients with CKD 3b-5 not on HD and aim to recruit 80 subjects for our study. Patients will be identified for eligibility by their treating physicians or by prescreening by study personnel of office practice patients.

7. ELIGIBILITY CRITERIA

- *Describe the characteristics of the subject population, including their anticipated number, age, ranges, sex, ethnic background, and health status. Identify the criteria for inclusion or exclusion of any subpopulation.*
- *Explain the rationale for the involvement of special classes of subjects, such as fetuses, pregnant women, children, prisoners or other institutionalized individuals, or others who are likely to be vulnerable. You cannot include these populations in your research, unless you indicate such in the protocol*
- *Similarly, detail exclusionary criteria: age limits, special populations (minors, pregnant women, decisionally impaired), use of concomitant medications, subjects with other diseases, severity of illness, etc.*

- We anticipate recruiting 80 subjects for this study. We anticipate a fair distribution of males and females, Caucasians, African Americans, and people from other ethnic groups. We anticipate that most patients in this age group are relatively healthy with possibly 1-5 past medical health problems.
- Inclusion Criteria: patients who are 18 years and older with the ability to speak and understand English and with T2DM AND CKD stages 3b-5. Vulnerable populations would include elderly and minorities, as listed in section 26 below for vulnerable populations. There are minimal risks of participating in this study for all subjects including vulnerable populations.
- Exclusion criteria: patients with Type I DM, ESRD on HD, hemoglobinopathies, who have received red blood cell transfusions in the last 12 weeks, with hemoglobin <9, current use of acetaminophen on a daily basis, steroid treatment in the prior 12 weeks, greater than 50% change in diabetes medications or new diabetes medications started in the prior 12 weeks, patients who are currently pregnant.

8. NUMBER OF SUBJECTS

- *Indicate the total number of subjects to be accrued locally. If applicable, distinguish between the number of subjects who are expected to be pre-screened, enrolled (consent obtained), randomized and complete the research procedures.*
- *If your study includes different cohorts, include the total number of subjects in each cohort.*
- *If this is multisite study, include total number of subjects across all sites.*

There is an expected number of 80 recruited subjects from all aforementioned sites (Northwell Health Division of Nephrology, Division of Endocrinology, and Winthrop University Hospital Division of Nephrology).
We expect all patients will complete the research procedures

9. STUDY TIMELINES

- *Describe the duration of an individuals participation in the study*
- *Describe the duration anticipated to enroll all study subjects*
- *The estimated date of study completion*

• An individual patient's participation in this study will be for 14 days • We anticipate enrolling study subjects from September 2017 to May 2018. • The estimated date of study completion will be June 30, 2018

10. ENDPOINTS

- *Describe the primary and secondary study endpoints*
- *Describe any primary or secondary safety endpoints*

• Primary End-Points: 1) Correlation between HbA1c and mean glucose concentration measured by CGM; 2) Characterization of hypoglycemic events, number, severity and duration. (Also, a safety end-point). • Secondary End-Points: 1) Correlation between serum fructosamine and mean glucose concentration measured by CGM, 2) Determination of HbA1c and serum fructosamine regression equation, slope, Y intercept, average glucose at different test levels, 3) Number of hyperglycemic events and duration of each hyperglycemic event, 4) Study glucose variability as measured by mean amplitude of glucose excursion

11. RESEARCH PROCEDURES

- *Include a detailed description of all procedures to be performed on the research subject and the schedule for each procedure.*
- *Include any screening procedures for eligibility and/or baseline diagnostic tests*
- *Include procedures being performed to monitor subjects for safety or minimize risks*
- *Include information about drug washout periods*
- *If drugs or biologics are being administered provide information on dosing and route of administration*
- *Clearly indicate which procedures are only being conducted for research purposes.*
- *If any specimens will be used for this research, explain whether they are being collected specifically for research purposes.*
- *Describe any source records that will be used to collect data about subjects*
- *Indicate the data to be collected, including long term follow-up*

• During the initial pre-screening visit, Day 0, the study will be explained to subjects and informed consent will be obtained after all subject questions have been answered by the investigators and the patient had adequate time to review all documentation and understand their role as a

voluntary participant. A chart review will be performed to evaluate baseline, complete blood count profile (CBC), and basic metabolic profile (BMP) completed within the previous 12 weeks that will determine if the subject meets inclusion criteria for the study. If subjects meet inclusion criteria then they will return to the research site on Day 1 to place Freestyle Libre Pro device by the research staff for 14-day monitoring. If baseline laboratory tests were performed prior to 12 weeks from Day 0, then a blood sample will be collected on Day 0 for baseline CBC and BMP laboratory tests that will be billed to the patient's insurance. If subjects meet inclusion criteria based on blood results collected on Day 0, they will be advised to come to the clinic on Day 1 to place a Freestyle Libre Pro device by the research staff. If subjects do not meet inclusion criteria based on blood results collected on Day 0, then they will be excluded from the study.

- The FreeStyle Libre Pro Flash Glucose Monitoring System is a professional continuous glucose monitoring (CGM) device indicated for detecting trends and tracking patterns in persons (age 18 and older) with diabetes. The Freestyle Libre Pro device is FDA approved (PMA# P150021). Participants will use the FreeStyle Libre Pro Flash Glucose Monitoring device according to its approved use, on the back of the arm.
- CGM monitoring will be performed on Day 1 by placing the Freestyle Libre Pro on research subjects for intended use of 14 days.
- Subjects will be advised to return to the research site on Day 14 to remove the CGM device for analysis. On Day 14, blood will be drawn for HbA1c and fructosamine, funded by internal research funds and there will be no charge to the patient. The blood drawn for this research will be approximately 10-15 milliliters.
- There are no drug washout periods. Subjects will continue to take all their medications and/or insulins as prescribed by their doctor.
- Baseline data including age, race, ethnicity, past medical history, home medication list, and diabetes related laboratory data will be collected from Allscripts medical records. No personal identifying information will be collected.

12. STATISTICAL ANALYSIS

- *Describe how your data will be used to test the hypotheses.*
- *State clearly what variables will be tested and what statistical tests will be used.*
- *Include sample size calculations.*
- *If this is a pilot study, state which variables will be examined for hypothesis generation in later studies.*

Patients with less than 7 days of CGM measurements will be excluded from analysis. Arithmetic mean glucose (AMG) will be calculated for each patient from

all CGM glucose measurements. A simple linear regression model will be applied to estimate the relationship between AMG and HbA1c. Once the relationship is established through the model, prediction of mean AMG together with 95% confidence intervals will be calculated at different levels of HbA1c. Influence of factors such as age, gender on the relationship between HbA1c and AMG will be examined through a multivariate regression model. Slopes and intercepts of the regression equations for the individual subgroups will be compared to those of the simple linear regression model. A quadratic regression model will also be applied if the relationship between the two variables is not linear. The same analysis will be performed to establish the relationship between AMG and serum fructosamine. Linear and quadratic regression models will be applied to estimate the relationship between AMG and HbA1c and serum fructosamine. If a linear relationship is established then slope, Y-intercept and correlation coefficient will be calculated. Mean AMG at different levels of HbA1c and serum fructosamine will be calculated. Glucose variability will be calculated as MAGE scores. First all the local maximum/minimum values are determined. The next step is an assessment or maximum/minimum pairs against the standard deviation (SD). If the difference from minimum to maximum is greater than the SD, this variation from mean measure is retained. If the local maximum/minimum is less than 1 SD it is excluded from further calculations. These troughs are retained and summed to achieve the MAGE score.

13. SPECIMEN BANKING

- *If specimens will be banked for future research, describe where the specimens will be stored, how long they will be stored, how they will be accessed and who will have access to the specimens*
- *List the information that will be stored with each specimen, including how specimens are labeled/coded*
- *Describe the procedures to release the specimens, including: the process to request release, approvals required for release, who can obtain the specimens, and the information to be provided with the specimens.*

N/A

14. DATA MANAGEMENT AND CONFIDENTIALITY

- *Describe the data and specimens to be sent out or received. As applicable, describe:*
  - *What information will be included in that data or associated with the specimens?*
  - *Where and how data and specimens will be stored?*
  - *How long the data will be stored?*
  - *Who will have access to the data?*
  - *Who is responsible for receipt or transmission of data and specimens?*
- *Describe the steps that will be taken to secure the data during storage, use and transmission.*

The above data will be stored using Red Cap.

Access to study data will be limited to IRB approved personnel.

Data will be stored according to Northwell Health retention of records policy GR052.

Data received from sites external to Northwell Health will be de-identified, with the link to identity maintained by the home site.

Northwell participant PHI will not be disclosed to any external participating site.

15. DATA AND SAFETY MONITORING PLAN

A specific data and safety monitoring plan is only required for greater than minimal risk research. For guidance on creating this plan, please see the Guidance Document *on the HRPP website.*

Part I – this part should be completed for all studies that require a DSMP.
Part II – This part should be completed when your study needs a Data and Safety Monitoring Board or Committee (DSMB/C) as part of your Data and Safety Monitoring Plan.

Part I: Elements of the Data and Safety Monitoring Plan

- *Indicate who will perform the data and safety monitoring for this study.*
- *Justify your choice of monitor, in terms of assessed risk to the research subject's health and well being. In studies where the monitor is independent of the study staff, indicate the individual's credentials, relationship to the PI, and rationale for selection*
- *List the specific items that will be monitored for safety (e.g. adverse events, protocol compliance, etc)*
- *Indicate the frequency at which accumulated safety and data information (items listed in # above) will be reviewed by the monitor (s) or the DSMB/C.*
- *Where applicable, describe rules which will guide interruption or alteration of the study design.*
- *Where applicable, indicate dose selection procedures that will be used to minimize toxicity.*
- *Should a temporary or permanent suspension of your study occur, in addition to the IRB, indicate to whom will you report the occurrence.*

Not applicable

Part II: Data and Safety Monitoring Board or Committee

- *When appropriate, attach a description of the DSMB.*
- *Provide the number of members and area of professional expertise.*

- *Provide confirmation that the members of the board are all independent of the study.*

N/A

16. WITHDRAWAL OF SUBJECTS

- *Describe anticipated circumstances under which subjects will be withdrawn from the research without their consent*
- *Describe procedures for orderly termination*
- *Describe procedures that will be followed when subjects withdraw from the research, including partial withdrawal from procedures with continued data collection.*

During the monitoring phase, the diabetes medications will not be changed unless indicated by their private endocrinologist or internist, in which case the patient will be withdrawn from the study for fulfilling an exclusion criterion. Furthermore, patients with less than 7 days of CGM measurements will be excluded from statistical analysis due to limited data collection.

17. RISKS TO SUBJECTS

- *Describe any potential risks and discomforts to the subject (physical, psychological, social, legal, or other) and assess their likelihood and seriousness and whether side effects are reversible. Where appropriate, describe alternative treatments and procedures that might be advantageous to the subjects.*
- *Include risks to others , like sexual partners (if appropriate)*
- *Discuss why the risks to subjects are reasonable in relation to the anticipated benefits and in relation to the importance of the knowledge that may reasonably be expected to result.*
- *Describe the procedures for protecting against or minimizing any potential risks, including risks to confidentiality, and assess their likely effectiveness.*

There is minimal risk of infection at the site of CGM device placement. Appropriate antiseptic methodology will be used and advised. There is minimal risk of breakage of confidentiality due to use of Red Caps for storage of data, as outlined above.

18. RESEARCH RELATED HARM/INJURY

- *Describe the availability of medical or psychological resources that subjects might need as a result of anticipated problems that may be known to be associated with the research.*
- *If the research is greater than minimal risk, explain any medical treatments that are available if research-related injury occurs, who will provide it, what will be provided, and who will pay for it.*

Principal investigators and support staff will be available for any anticipated or unanticipated research related problems. This research study does not pose greater than minimal risk to any subjects.

19. POTENTIAL BENEFIT TO SUBJECTS

- *Explain what benefits might be derived from participation in the study, noting in particular the benefit over standard treatment (e.g. a once-a-day administration instead of four times a day, an oral formulation over an IV administration).*
- *Also state if there are no known benefits to subjects, but detail the value of knowledge to be gained*

The CGM data analysis can be provided to subject's endocrinologist if requested by the subject at the end of their participation. The subject's endocrinologist may make medication or insulin adjustments based on the CGM data which may be beneficial to the patient.

20. PROVISIONS TO PROTECT PRIVACY INTERESTS OF SUBJECTS

- *Describe the methods used to identify potential research subjects, obtain consent and gather information about subjects to ensure that their privacy is not invaded.*
- *In addition consider privacy protections that may be needed due to communications with subjects (such as phone messages or mail).*

Subjects will be assigned subject numbers and will be referred by these numbers in all documentations related to the study after their consent and signatures are collected on file.

The Informed consent presentation and discussion will take place in a private area. There will be no mail or phone messages for the patient. Patient will be provided with our office phone number to discuss all matters directly with PI or research staff.

21. COSTS TO SUBJECTS

- *Describe any foreseeable costs that subjects may incur through participation in the research*
- *Indicate whether research procedures will be billed to insurance or paid for by the research study.*

- Subjects will not incur any costs for participation in this study

- On pre-screening visit, Day 0, the study will be explained to the subject and voluntary consent will be obtained to participate in the study. Baseline data including CBC and BMP will be collected from the subject's Allscripts medical record if available from the previous 12 weeks to determine if subject meets inclusion criteria for the study. If CBC and BMP are not available from previous 12 weeks, then blood will be drawn on Day 0 for CBC and BMP and billed to the patient's insurance. Subjects will be called to notify their inclusion or exclusion in the study based on laboratory results collected from blood sample on Day 0.
- Subjects that meet inclusion criteria will be advised to return to the clinic on Day 1 to place a Freestyle Libre Pro device by the research staff for continuous 14-day glucose monitoring.
- On Day 14, subjects will return to remove the Freestyle Libre Pro device and laboratory data including HbA1c and fructosamine will be collected for research purposes and paid by the research study.

22. PAYMENT TO SUBJECTS

- *Describe the amount of payment to subjects, in what form payment will be received and the timing of the payments.*

Subjects will not receive any financial compensation to participate in this study. However, 24 subjects that have consented as per previous initial protocol will receive financial compensation of $200.00 upon completion of their participation.

23. CONSENT PROCESS

If obtaining consent for this study, describe:

- *Who will be obtaining consent*
- *Where consent will be obtained*
- *Any waiting period available between informing the prospective participant and obtaining consent*
- *Steps that will be taken to assure the participants' understanding*
- *Any tools that will be utilized during the consent process*
- *Information about how the consent will be documented in writing. If using a standard consent form, indicate such.*
- *Procedures for maintaining informed consent.*

Consent will be obtained by study physicians or study trained personnel

In the state of NY, any participants under the age of 18 are considered children. If your study involves children, additional information should be provided to describe:

- *How parental permission will be obtained*
- *From how many parents will parental permission be obtained*
- *Whether permission will be obtained from individuals other than parents, and if so, who will be allowed to provide permission. The process used to determine these individual's authority to consent for the child should be provided*
- *Whether or not assent will be obtained from the child*
- *How will assent be documented*
- *Whether child subjects may be expected to attain legal age to consent to the procedures for research prior to the completion of their participation in the research. If so, describe the process that will be used to obtain their legal consent to continue participation in the study. Indicate what will occur if consent is not obtained from the now-adult subjects.*

N/A

If the study involves cognitively impaired adults, additional information should be provided to describe:

- *The process to determine whether an individual is capable of consent*
- *Indicate who will make this assessment*
- *The plan should indicate that documentation of the determination and assessment will be placed in the medical record, when applicable, in addition to the research record.*
- *If permission of a legally authorized representative will be obtained,*
  - *list the individuals from who permission will be obtained in order of priority*
  - *Describe the process for assent of subjects; indicate whether assent will be required of all, some or none of the subjects. If some, which subjects will be required to assent and which will not.*
  - *If assent will not be obtained from some or all subjects, provide an explanation as to why not*
  - *Describe whether assent will be documented and the process to document assent*
  - *Indicate if the subject could regain capacity and at what point you would obtain their consent for continued participation in the study*

N/A

If the study will enroll non-English speaking subjects:

- *Indicate what language(s) other than English are understood by prospective subjects or representatives*
- *Indicate whether or not consent forms will be translated into a language other than English*
- *Describe the process to ensure that the oral and written information provided to those subjects will be in that language*

- *If non-English speaking subjects will be excluded, provide a justification for doing so*

No

24. WAIVER OR ALTERATION OF THE CONSENT PROCESS ☒ N/A

Complete this section if you are seeking an alteration or complete waiver of the consent process.

- *Describe the possible risks of harm to the subjects involved in this study and explain why the study involves no more than minimal risk to the subject:*
- *Explain why the waiver/ alteration will not adversely affect the rights and welfare of subjects*
- *Explain why it is impracticable to conduct this research if informed consent is required*
- *If appropriate, explain how the subjects will be provided with additional pertinent information after participation. If not appropriate to do so, explain why.*

No

Complete this section if you are obtaining informed consent but you are requesting a waiver of the documentation of consent (i.e., verbal consent will be obtained). *To proceed with a waiver based on these criteria, each subject must be asked whether they wish to have documentation linking them to this study.* ***Only complete subsection 1 OR subsection 2.***

SUBSECTION 1

- *Explain how the only record linking the subject to the research would be the consent document.*
- *Explain how the principal risk of this study would be the potential harm resulting from a breach in the confidentiality*
- *Indicate whether or not subjects will be provided with a written statement regarding the research.*

N/A

SUBSECTION 2

- *Describe the possible risks of harm to the subjects involved in this study and explain why the study involves no more than minimal risk.*
- *Confirm that the research only involves procedure for which consent is not normally required outside the research context.*
- *Indicate whether or not subjects will be provided with a written statement regarding the research.*

N/A.

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25. WAIVER OF HIPAA AUTHORIZATION ☒ N/A

Complete this section if you seek to obtain a full waiver of HIPAA authorization to use and/or disclose protected health information.

- *Describe the risks to privacy involved in this study and explain why the study involves no more than minimal risk to privacy:*
- *Describe your plan to protect identifiers from improper use or disclosure and to destroy them at the earliest time.*
- *Indicate why it is not possible to seek subjects' authorization for use or disclosure of PHI.*
- *Indicate why it is not possible to conduct this research without use or disclosure of the PHI.*
- *Indicate if PHI will be disclosed outside NSLIJ Health System, and if so, to whom. Note: PHI disclosed outside NSLIJ Health System, without HIPAA authorization needs to be tracked. Please see guidance at www.nslij.com/irb for information about tracking disclosures.*

No

Complete this section if you seek to obtain a partial waiver of the patient's authorization for screening/recruitment purposes *(i.e., the researcher does not have access to patient records as s/he is not part of the covered entity)*

Note: Information collected through a partial waiver for recruitment cannot be shared or disclosed to any other person or entity.

- *Describe how data will be collected and used:*
- *Indicate why you need the PHI (e.g.PHI is required to determine eligibility, identifiers are necessary to contact the individual to discuss participation, other)*
- *Indicate why the research cannot practicably be conducted without the partial waiver (e.g. no access to medical records or contact information of the targeted population, no treating clinician to assist in recruitment of the study population, other)*

N/A

26. VULNERABLE POPULATIONS:

Indicate whether you will include any of these vulnerable populations. If indicated, submit the appropriate appendix to the IRB for review:

☐ *Children or viable neonate*
☐ *Cognitively impaired*
☐ *Pregnant Women, Fetuses or neonates of uncertain viability or nonviable*

☐ *Prisoners*
☐ *NSLIJ Employees, residents, fellows, etc*
☐ *poor/uninsured*
☐ *Students*
☒ *Minorities*
☒ *Elderly*
☐ *Healthy Controls*

If any of these populations are included in the study, describe additional safeguards that will be used to protect their rights and welfare.

All patients will be treated fairly and all information will be confidential. There is no greater than minimal risks to all subjects in this study.

27. MULTI-SITE HUMAN RESEARCH (COORDINATING CENTER)

If this is a multi-site study where you are the lead investigator, describe the management of information (e.g. results, new information, unanticipated problems involving risks to subjects or others, or protocol modifications) among sites to protect subjects.

Yes, this is a multi-site study but each site has an assigned lead investigator at that site. All information will be confidential and results will be shared between sites; however, each assigned lead investigator will be responsible to submit protocol modifications to their institute's IRB and address unanticipated problems at their site after discussing it with all investigators from all sites.

28. REFERENCES/BIBIOGRAPHY

Provide a reasonable list of references directly related to the study. Any diagrams for new medical devices or brief reprints from journals might also prove useful.

1. Incidence, Prevalence, Patient Characteristics, and Treatment Modalities. United States Renal Data System. Available from https://www.usrds.org/2016/view/v2_01.aspx
2. Rabkin R, Ryan MP, Duckworth WC. The renal metabolism of insulin. Diabetologia. 1984 Sep;27(3):351-7.
3. Castellino P, DeFronzo RA. Glucose metabolism and the kidney. Semin Nephrol. 1990 Sep;10(5):458-63
4. Miedema K (2005). Standardization of HbA1c and Optimal Range of Monitoring. Scandinavian Journal of Clinical and Laboratory Investigation. 240: 61–72
5. Ly J, Marticorena R, Donnelly S. Red blood cell survival in chronic renal failure. Am J Kidney Dis. 2004 Oct;44(4):715-9
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