Parental Permission/Research Informed Consent

Title of Study: **E**valuating the utility of the 's**M**art" In**P**en **W**ireless-**E**nabled system to imp**R**ove glycemic control in pediatric type 1 diabetes (**EMP**o**WER** Study)

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Funding Source: Pilot and Feasibility Grant from the Michigan Diabetes Research Center (NIH Grant P30-DK020572)

When we say "you" in this consent form, we mean you or your child; "we" means the doctors and other staff.

Key Information about this Study

You are being given this form to decide if you want to take part in a research study. Participation in this research study is voluntary (your choice). Participants younger than 18 years of age will be given an assent form with information about this study, so that they can also freely decide whether to take part in this study. The study is looking at the use of the "smart" insulin InPen to lower hemoglobin A1c (HbA1c) in adolescents and emerging adults with uncontrolled type 1 diabetes (T1D). The InPen and its associated application (InPen App) helps with calculating insulin doses for food and high blood sugar and provides reminders to test blood sugars. The InPen App also stores information about your blood sugars, meals (amount of carbohydrate that you eat), and insulin doses in a report that can emailed or faxed to your diabetes care team. There are no physical risks of participation in this study except technical problems that may occur using the InPen and/or its application (InPen App). There is the risk of a loss of confidentiality due to the collection of personal identifying information. Study participants may benefit from the study directly if glucose levels decrease after using the InPen. In addition, information from the study may help other pediatric patients with type 1 diabetes in the future. If you do not want to be in the study the alternative is that you can continue using your current insulin pen device to give multiple daily injections or you can switch to the InPen device and not be part of this study.

Purpose

You are being asked to participate in a research study using the "smart" insulin InPen device to help lower hemoglobin A1c (HbA1c) in adolescents and young adults with uncontrolled type 1 diabetes (defined by a HbA1c greater than or equal to 8%). You may qualify for the study because you give several doses of insulin during the day, but your diabetes is still not controlled. This study is being conducted at Wayne State University, the Wayne Pediatrics Clinic, and other sites in Michigan. The estimated number of study participants to be enrolled at Wayne State University and the Wayne Pediatrics Clinic is 14 as well as about 20 from other sites in Michigan. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study, teens and young adults with uncontrolled type 1 diabetes will be asked to use the "smart" insulin InPen device for 6 months to determine if it helps to decrease hemoglobin A1c.

What are some reasons why teens and young adults with type 1 diabetes have uncontrolled diabetes?
Research studies have shown that teens and young adults with type 1 diabetes are more likely to have uncontrolled diabetes if they miss doses of insulin at meals and snacks. Some teens/young adults may have difficulty calculating insulin doses and may give too much or too little insulin, which can cause low or high blood sugar levels. Also, some teens/young adults forget to test their blood sugars and will miss several doses of insulin throughout the day which can cause high blood sugar levels. If these problems continue as teens with type 1 diabetes get older, then as young adults they will have uncontrolled type 1 diabetes and an increased risk of complications. Studies have also shown that African American and Hispanic teens with type 1 diabetes are less likely to use diabetes devices that have advanced technology (i.e., devices that use apps that have reminders and allow for easier tracking and calculating of insulin doses) which can also contribute to uncontrolled diabetes.

The InPen has been approved by the FDA for adults as well as children of all ages with diabetes and uses insulin that is commonly given at meals and snacks. The InPen has an associated App that is free on Apple iOS and Android devices that helps with calculating insulin doses and reminding patients to test blood sugars. The InPen App stores diabetes information that can be emailed or faxed to your diabetes team for review which can also help to improve your HbA1c.

What are my responsibilities if I decide to take part?
Before any study procedures are done, you will be asked to read and sign this consent form. If you agree to take part in this study and the study team determines that you qualify, there will be 6 visits over 24-32 weeks (about 6-8 months).

Your diabetes team will assist with helping you obtain the InPen device and insulin cartridges through your insurance company. To use the InPen and its specific application, you will also need to use a personal smartphone, for example Apple (iOS 10 or higher including iPad) or Android device (Android Operating System 6.0 and greater) daily that will not be provided by the study. Your diabetes team will provide training for you to use the InPen. The InPen only gives doses of short-acting insulin (for example, Humalog, Novolog, or Fiasp) for food and to correct high blood sugars; therefore, in addition to using the InPen device, you must continue to use your long-acting insulin pen for Lantus, Basaglar, Toujeo, Tresiba, or Levemir as prescribed by your diabetes team.

During the study we will obtain information about your diabetes from your medical record including basic health information, HbA1c, glucose levels, carbohydrate intake, insulin doses, and any illnesses that occur during the study. You will also be asked to email or fax your InPen reports to the study team while you are in the study. No additional laboratory testing is required to participate in this study.

You will need to inform the study doctor and/or study staff of all of your medical conditions or allergies you may have, and any medications (prescribed or obtained over the counter) you may be taking. The study doctor will use this information, your medical history, and the screening procedures to see if you can continue in this study. Your race and ethnicity will be recorded by the study staff. This is necessary to find out how it affects the treatment of diabetes.

Study Procedures:

Visit 1/ Baseline (4 to 8 weeks before Visit 2):

This visit will happen 4-8 weeks before the InPen Training Visit/Visit 2. Since you will be receiving the InPen as part of your normal care for your diabetes (standard of care) the exact timing of this visit will depend on when your insurance approves the InPen and when you receive the InPen and supplies. You will remain on your current diabetes medications while you are waiting for insurance approval and receipt of the InPen and supplies. The visit will take about 1-3 hours to complete, and the following activities will happen:

- You will sign this consent form.
- A member of the research team will review inclusion/exclusion criteria for the study and your medical record/history to see if you qualify for the study.
- Your demographic information, weight, height, and BMI will be collected from the electronic medical record.
- A member of the research team will collect information on all medications that you are taking including those that you take over the counter.
- Your glucose data, including the type of glucometer(s) and continuous glucose monitor(s) (CGM) you use as part of your routine care, HbA1c measurements during the last 6 months as well as your current insulin doses will be obtained from your electronic medical record.
- You will be asked about your overall health and any illnesses or injuries you have experienced.
- You will complete a questionnaire about math skills used in diabetes.
- The estimated time to complete this visit is 2 hours.

Visit 2/InPen Training:

- A member of the research team will review all medications that you are taking including those that you take over the counter
- You will be asked about all glucose devices (including glucometers and CGMs) you are using as part of your routine care.
- You will be asked about your overall health and any illnesses or injuries you have experienced.
- You will be trained to use the InPen device and on how to send an InPen report to your diabetes team.
- You will be asked about your diabetes supplies for treatment of hypoglycemia and management of hyperglycemia.
- You will be asked if you have a backup plan and supplies if the InPen stops working.
- The estimated time to complete this visit is 1-2 hours

Visit 3 (Week 8):

This visit will be done via telephone.

- A member of the research team will call you and ask about all medications that you are taking including those that you take over the counter.
- You will be asked about all glucose devices (including glucometers and continuous glucose monitors (CGM) that you are using as part of your routine care.
- You will be asked to fax or email your InPen report showing data from the last 2 weeks for research review only. The research study team will NOT adjust your insulin doses or share your

InPen report with your diabetes team unless necessary to do so for your health and safety.

- You will be asked about your overall health and any illnesses or injuries you have experienced.
- You will be asked about your diabetes supplies for treatment of hypoglycemia and management of hyperglycemia.
- You will be asked if you have a backup plan and supplies if the InPen stops working.
- The estimated time to complete this visit is around 30-60 minutes.

Visit 4 (Week 12)

This visit will be done via telephone.

- A member of the research team will call you and ask about all medications that you are taking including those that you take over the counter.
- Your weight and height collected as part of routine care at your most recent clinic visit for diabetes will be obtained from the electronic medical record.
- You will be asked about all glucose devices (including glucometers and CGMs) you are using as part of your routine care.
- You will be asked to fax or email your InPen report showing data from the last 2 weeks for research review only. The research study team will NOT adjust your insulin doses or share your InPen report with your diabetes team unless necessary to do so for your health and safety.
- You will be asked about your overall health and any illnesses or injuries you have experienced.
- You will be asked about your diabetes supplies for treatment of hypoglycemia and management of hyperglycemia.
- You will be asked if you have a backup plan and supplies if the InPen stops working.
- The estimated time to complete this visit is around 30-60 minutes.

Visit 5 (Week 16)

This visit will be done via telephone.

- A member of the research team will call you and ask about all medications that you are taking including those that you take over the counter.
- You will be asked about all glucose devices (including glucometers and CGMs) you are using as part of your routine care.
- You will be asked to fax or email your InPen report showing data from the last 2 weeks for research review only. The research study team will NOT adjust your insulin doses or share your InPen report with your diabetes team unless necessary to do so for your health and safety.
- You will be asked about your overall health and any illnesses or injuries you have experienced.
- You will be asked about your diabetes supplies for treatment of hypoglycemia and management of hyperglycemia.
- You will be asked if you have a backup plan and supplies if the InPen stops working.
- The estimated time to complete this visit is around 30-60 minutes.

Visit 6 (Week 24)

During your routine diabetes clinic appointment, you will also meet with a member of the research team.

- Your weight and height collected during routine care at your most recent clinic visit for diabetes will be obtained from the electronic medical record.

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Parent/Guardian Initials

- You will be asked about all medications that you are taking including those that you take over the counter.
- You will be asked about all diabetes glucose devices (including glucometers and CGMs) you are using as part of your routine care and glucose data will be obtained from the electronic medical record.
- Your InPen report showing data from the last 2 weeks that is collected as part of routine care of diabetes will be obtained from the electronic medical record.
- You will complete 2 questionnaires. One questionnaire is about math skills used in diabetes, and the other questionnaire is about your experience with using the InPen.
- You will be asked about your overall health and any illnesses or injuries you have experienced.
- You will be asked about your diabetes supplies for treatment of hypoglycemia and management of hyperglycemia.
- You will be asked if you have a backup plan and supplies if the InPen stops working.
- The estimated time to complete this visit is 2 hours.

Benefits

The possible benefits to you for taking part in this research study with the InPen are that the InPen may make it easier to calculate insulin doses and to give more accurate doses of insulin. The InPen may make it easier to keep track of insulin doses to help prevent hypoglycemia and getting reminders to give insulin may help keep your blood sugar under control. Finally, the InPen may make it easier to share personal insulin and glucose data with your diabetes healthcare teams which may help improve diabetes control. Information from this study may also provide insights to help other teens and young adults with improving management of diabetes and lowering hemoglobin A1c.

Risks

The study is collecting data on standard of care treatment. By taking part in this study, you may experience the following risks: The InPen device could malfunction, or the InPen App could stop working or no longer be accessible to you which could lead to high blood sugars due to lack of insulin. You may experience increased thirst or urination, nausea or vomiting if blood sugars remain elevated for several hours. To address this risk each participant will have a specific back up plan with specific insulin-dosing instructions along with a prescription for insulin pens that can dispense rapid-acting insulin to manage your diabetes until the issues with the InPen can be resolved.

As a part of the study, you will be taking basal insulin and use all other medications, e.g. glucagon the emergency medication for hypoglycemia, that are part of the normal treatment for your disease or medical condition.

<u>Side effects of Insulin analogs:</u>

Insulin (rapid-acting analogs: Humalog, Novolog, and Fiasp) will be used in the InPen device. You will continue to use your current pen device to administer long-acting analogs: Lantus, Basaglar, Levemir, Toujeo, Tresiba). Insulin analogs lower blood sugars and may result in hypoglycemia if the incorrect dose is given or the correct dose is given too soon after a previous injection of insulin was administered. Alternatively, if insulin is stored incorrectly (allowed to freeze or get above 86^{o}F) it will not work properly and can cause hyperglycemia which, if untreated, can progress to diabetic ketoacidosis.

Side effects of Glucagon
Glucagon is a hormone that reverses the effects of insulin and is used as standard of care therapy for all patients with type 1 diabetes who take insulin. Glucagon causes nausea, vomiting, and headaches.

There are known risks to women who have uncontrolled type 1 diabetes who may become pregnant and to their unborn babies. Therefore, to take part in this study, a medically acceptable form of birth control is advised for female participants. Medically acceptable birth control may include the following methods: barrier protection—such as condoms, intrauterine devices (IUD), abstinence (not having sex), etc. Oral contraceptives may be used but should not be the only means of protection. No birth control method completely eliminates the risk of pregnancy. If you should become pregnant while participating in this research study, you should discuss this with the study doctor so that your choices and options can be explored and discussed.

If at any time during the study, there is concern that child abuse has possibly occurred this information must be released/reported to the appropriate authorities.

There is the risk of a loss of confidentiality due to the collection of personal identifying information.

There may also be risks involved from taking part in this study that are not known to researchers at this time.

Alternatives
The alternative is to not participate in this study.

Study Costs
You will be receiving the InPen and supplies as part of your normal care (standard of care). You or your insurance company will be charged for the following items: InPen device, insulin medications, and all other diabetes medications and supplies that you use as part of your normal diabetes care/standard of care. You are responsible for paying for any insurance co-pays and any deductibles due under your insurance policy, and any charges your insurance company does not pay.

Compensation
For taking part in this research study, you will be paid for your time and inconvenience in the amount of $25 per study visit. The total amount of compensation available for completing all 6 study visits is $150. If you are not a U.S. citizen and/or not a U.S. taxpayer 30% of the compensation will be withheld by WSU before the check is disbursed.

Research Related Injuries
In the event that this research related activity results in an injury, treatment will be made available including first aid, emergency treatment, and follow-up care as needed. Care for such will be billed in the ordinary manner to you or your insurance company. No reimbursement, compensation, or free medical care is offered by Wayne State University, Wayne Pediatrics, the study sponsor, or any other facility involved with this study. If you think that your child has suffered a research related injury, contact the PI right away at (313)448-9600.

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Confidentiality
All information collected about your child during this study will be kept confidential to the extent permitted by law. Your child will be identified in the research records by a code name or number. Information that identifies your child personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.) may review your records.

When the results of this research are published or discussed in conferences, no information will be included that would reveal your child's identity. Data from this study may be used for future research and analysis.

It is important that your personal doctor is aware that you are in a clinical research study because it could impact your health or the way your doctor manages your care. With your permission, we will notify your personal doctor that you are taking part in this study. Please review and complete the information below:

☐ I agree to allow the research team at Wayne State University/Wayne Pediatrics to contact my personal doctor to let them know I am participating in a clinical research study.

_____ _____
Initials Date

☐ I do not agree to allow the research team at Wayne State University/Wayne Pediatrics to contact my personal doctor to let them know I am participating in a clinical research study.

_____ _____
Initials Date

Name of Primary Care Provider: _____

Telephone Number: _____

Voluntary Participation/Withdrawal
Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you decide to take part in the study, you can later change your mind and withdraw from the study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. If you have any side effects that are very serious or if you become ill during the research study your child may have to drop out, even if you would like to continue. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because it is part of the

research plan that people who develop certain conditions or do not follow the instructions from the study doctor may not continue to participate.

Questions

If you have any questions about this study now or in the future, you may contact Dr. Colleen Buggs-Saxton or one of her research team members at the following phone number (313) 448-9600. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call the Wayne State Research Subject Advocate at (313) 577-1628 to discuss problems, obtain information, or offer input.

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Parent/Guardian Initials

Consent to Participate in a Research Study:
To voluntarily agree to take part in this study, you must sign on the line below. If you choose to take part in this study, you may withdraw at any time. You are not giving up any of your legal rights by signing this form. Your signature below indicates that you have read, or had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

_____ Name of Participant	_____ Date of Birth
_____ Signature of Parent/ Legally Authorized Guardian	_____ Date
_____ Printed Name of Parent Authorized Guardian	_____ Time
_____ *Signature of Parent/ Legally Authorized Guardian	_____ Date
_____ *Printed Name of Parent Authorized Guardian	_____ Time
_____ **Signature of Witness (When applicable)	_____ Date
_____ Printed Name of Witness	_____ Time
_____ Signature of Person Obtaining Consent	_____ Date
_____ Printed Name of Person Obtaining Consent	_____ Time
_____ Signature of translator	_____ Date
_____ Printed name of translator	_____ Time

* Both parent's signatures should be obtained however both are **required** for level 3 studies

** Use when parent/guardian has had consent form read to them (i.e., illiterate, legally blind, translated into foreign language).

IRB-22-03-4472
JUN 26 2022
APPROVED
WAYNE STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

Continue to HIPAA Authorization on next page

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Parent/Guardian Initials

HIPAA Authorization

A federal regulation, known as the "Health Insurance Portability and Accountability Act (HIPAA)" gives you certain rights concerning the use and disclosure (sharing with others) of your Protected Health Information (PHI). This regulation provides safeguards for the privacy and security of your information. Your permission (authorization) is required for the use and sharing of any protected health information collected as part of this research study. If you are not willing to sign this authorization to use and/or disclose your PHI by the research team, you will not be eligible to take part in this research study.

The principal investigator (PI) and her research team will use your medical records and information created or collected as part of this research study. Your PHI is important for the PI and her research team in order to collect information about you during the study, to be able to contact you if needed, and to provide treatments to you during the study, if required. The PI may send out your study related health information to the sponsor or other entities involved in this study.

Your medical records, which may contain information that directly identifies you, may be reviewed by representatives from groups identified below. The purpose of these reviews is to assure the study is being conducted properly, that data is being obtained correctly or for other uses authorized by law. These reviews occur at the study site or in the PI's research office and can take place anytime during the study or after the study has ended.

The PHI that will be "USED" for this research includes the following: name, address, elements of dates, telephone numbers, fax numbers, email address, medical record number, web URLs, internet protocol (IP) addresses, and any unique identifying numbers or characteristics or code.

The PHI that will be "DISCLOSED" or shared with others for this research includes the following: elements of dates and any unique identifying numbers or characteristics or code.

Your study information may be **used** or **shared** with the following people or groups:

- The PI, co-investigators, and key personnel of WSU and Wayne Pediatrics associated with the research project
- WSU's Institutional Review Boards (IRB)
- Other collaborating academic research institutions, which include: Ascension St. John Children's Center Pediatrics & Specialties (Endocrinology Clinic).
- The study Sponsor or representative, including companies it hires to provide study related services, which include: National Institutes of Health, University of Michigan Diabetes Research Center.
- Federal agencies with appropriate regulatory oversight (e.g., FDA, OHRP, OCR, etc.) may review your records

Once your information has been released according to this Authorization, it could be released again and may no longer be protected by the HIPAA regulations.

This Authorization does not expire. The research team may need to correct it or provide missing information about you even after the study has ended, and your medical records may be needed to assist in this process.

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- During your participation in this research project you will not be able to access that part of your medical record involved in the research. This will be done to prevent the knowledge of the research results from affecting the reliability of the project. Your information will be available to the treating physician should an emergency arise that would require for him/her to know this information to best treat you. You will have access to your medical record when the study is ended or earlier, if possible. The PI is not required to release research information that is not part of your medical record.

You may withdraw (take back) your permission for the **use** and **disclosure** of your PHI for this research at anytime, by **writing** to the PI at the address on the first page of this form. Even if you withdraw your permission, the PI for the research project may still use your PHI that was collected prior to your written request if that information is necessary to the study. If you withdraw your permission for use of your PHI, you will also be withdrawn from the research project. Withdrawing your authorization **will not** affect the health care that will be provided by the Detroit Medical Center and/or the WSU School of Medicine Practice Plans.

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Parent/Guardian Initials

Authorization to use and disclose PHI

- By signing this document, you are authorizing the PI to **use** and **disclose** PHI collected about you for the research purposes as described above.

_____ _____
Signature of participant Date

_____
Printed name of participant

- For participants unable to give Authorization, the following individual is acting on behalf of the research participant (e.g., children, mentally impaired, etc.).

_____ _____
Signature of authorized representative Date

_____ _____
Printed name of authorized representative Relationship to the participant

_____ _____
Signature of person obtaining Authorization Date

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Printed name of person obtaining Authorization

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