

# The Empowerment Equation

## Executive Summary

### **Community Partner**

Dr. Tracey Vogel

### **Student Consulting Team**

Archit Arora

Pavi Bhattar

Sprina Wu

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## **Background**

The Empowerment Equation is a developing organization dedicated towards helping trauma survivors through childbirth. The organization helps to facilitate learning between providers and patients to establish preliminary work and a plan for the childbirth process. The organization offers solutions and suggestions for wrongs and rights in the labor and delivery experience to patients and providers within a supportive and inclusive environment. With the help of The Empowerment Equation, providers and their patients can create a trauma-informed care plan to reduce the traumatic experiences a patient may have during childbirth.

## **Project Description**

### **Project Opportunity**

The Empowerment Equation does not have a reliable way to monitor or record patient information postpartum. Our community partner records information with pen and paper and inputs them into Microsoft Excel spreadsheets. However, patient information, such as past trauma history, missed hospital visits, frequency of hospital visits, delivery date, providers, and more, is critical to the organization to identify patients in need. The organization's current information systems do not meet our community partner's needs because there is no reliable way to maintain and use the information she is collecting.

### **Project Vision**

Our project vision was to create a fully-functioning, protected, secure and centralized data storage system, for digitalized patient tracking and progress from prepartum to up to a year past postpartum, as well as the development of digital screening tools for patients to fill out, to shift away from paper forms. This package would be easy-to-use and well documented to ensure that our community partner will be able to continue using this solution without technical expertise. Having the capability to track risk factors in patients allows our community partner to make any necessary interventions and help prevent the development of disorders in these patients.

## **Project Outcomes**

The key outcomes of this project are: (i) the database that stores patient information regarding trauma and delivery trauma that serves as a patient tracking system; and (ii) the Labor Angel Postpartum Screening Tools made on Typeform to collect patient data after delivery. The database tracks risk factors at each stage of the birth process that our community partner can query to find at-risk patients and reach out to them if necessary. The functionalities of the database were determined by discussions in our weekly community partner meetings and were iterated upon at each meeting through discussion and demos. The Labor Angel Postpartum Screening Tools are part of collecting patient data after delivery where these tools are sent in text messages from the database. Our community partner would then import the Typeform data into the database to track patient scores on each of the screening tools.

## **Project Deliverables**

Our final solution for transitioning The Empowerment Equation from manual, paper recording to an automated, technical solution and ensuring the tracking of all to-be mothers and mother patients included a fully-functioning, protected, secure and centralized data storage system hosted with FileMaker Pro, comprehensive database design and process documentation for future Epic database integration, and a collection of screening tools hosted on Typeform to assess the development of disorders such as postpartum depression and PTSD.

## **Recommendations**

Our current solution meets the immediate need for Dr. Vogel to track risk factors for all of her patients and efficiently reach out to them if they are at risk for developing postpartum trauma. In the future, there are two main steps that can help The Empowerment Equation scale and better track patients. First, Dr. Vogel would need to further discuss with Epic on how the current patient tracker can get information about patients. Second, once Dr. Vogel establishes that there are a significant number of patients who develop trauma postpartum and wants to expand to other hospitals, it would be better to use a different database (ex. MySQL, DynamoDB) in order to meet the scale of incoming patients and further automate much of the processes including sending texts and importing data.

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## **Student Consulting Team**

**Archit Arora** served as the quality assurance lead and one of the client transition managers. He is a third-year student majoring in Information Systems with a minor in Computer Science. He will be interning as a Software Development intern at Amazon Web Services this summer.

**Pavi Bhattar** served as the project manager. She is a third-year student majoring in Information Systems with a minor in Human Computer Interaction. This summer, she will be interning at Microsoft under the artificial intelligence and research group.

**Sprina Wu** served as client relationship manager and as one of the client transition managers. She is a third-year student majoring in Information Systems with a minor in Human Computer Interaction. She will be interning at Amazon this summer for software development.