

Statement of Support for WUman's Illuminate

Kansas 2017 InnovateHER Challenge

Wichita State University, WSU Ventures has selected the WUman's Group, Illuminate as the winner of the Kansas 2017 InnovateHER local competition and recommends their advancement to the final round of the Challenge in Washington, D.C. Illuminate stood out to the judges of the 2017 Kansas InnovateHER Challenge because of the potential impact this product can have on the lives of women and children.

Illuminate is an application used to prevent postpartum hemorrhaging (PPH) by encouraging active management methods throughout the third stage of labor via suggested courses of action based upon individual patient information stored within Illuminate. Funding from 2017 InnovateHER Challenge would enable further research, develop and pilot Illuminate in regional Birth Care Centers in Kansas.

Many families do not realize the complications that can occur during and after child birth—many which can be fatal. According to the World Health Organization, excessive bleeding during labor claims an alarming 100,000 lives around the world each year; leaving many newborn babies without mothers. This condition, of excessive bleeding within the first 24 hours of delivery, is known as postpartum hemorrhage. It is the number one cause of maternal death globally.

Illuminate will assist in drastically reducing the maternal mortality rates in the United States. It will assist in solving the lack of active management during the third stage of labor, common to U.S. hospitals, thus reducing the post-partum hemorrhaging deaths. The Illuminate application will achieve this by reducing the amount of time nurses spend on indirect patient care activities and give them the ability to keep track of each patient's risk factors, based off of patient history, vitals and red blood cell counts.

Illuminate will give alerts on important tasks that are easily forgotten. These alerts are especially important when dealing with high risk post-partum patients who need to be monitored closely so that action can be taken quickly if PPH is identified. Illuminate allows nurses to be completely aware of their high risk patients, and remind them when high risk patients need re-evaluation, which is often (every 5 minutes). This reduces the number of people needed to manage a patient with a high risk of PPH. Most importantly, standard protocols or actions will be suggested based off of the stored patient information. The device transfers this data to other nurses instantly, without the need for physical dialog. This is most important for nurses that are changing shifts.

WUman's Group has developed a prototype of the Illuminate application using the Axure software. The application starts with a screen that has a selection for each patient. The next screen shows the different stages of labor that were found important to monitor. These stages include check-in, early labor, active/transitional labor, labor and post labor. Each of these categories has a checklist to ensure the patient is in the intended stage of labor. There are many different methods used to categorize the patient into high, medium or low risk categories. Keywords captured from the patient's electronic file show what risk level - low, medium, or high - the patient starts out in (during check-in). Depending on the stage of labor, keywords, vital sign values, or red blood cell count/hemoglobin levels, Illuminate can elevate a patient into an updated risk level differing from the check-in level. Certain standard protocols are suggested based upon what risk level category the patient falls into at any given time.

Three PPH severity levels are included in Illuminate. A low level blood loss course of action (on the cusp of PPH) would include uterine massage and medications. A medium level blood loss suggested action could include a balloon tamponade. High blood loss level actions include uterine sutures, or in highly severe cases, a hysterectomy.

All of these protocols serve the purpose of cutting off blood flowing from the uterus or compressing the vessels leaking blood, reducing the risk of mortality caused by PPH. Through six months of observation in a local hospital and research, WUman's Group was able to establish that these are common courses of action used nationwide.

Depending on the progression of labor and the current risk level, the program will alert labor and delivery nurses to re-evaluate vital signs, blood loss visualization and hemoglobin levels every 5-15 minutes.

The complications that arise for postpartum hemorrhage are worldwide for pregnant women, however the initial Illuminate prototype will be developed in partnership with Wesley Birthing Center in Wichita, Kansas, and then will be expanded to include other hospitals and birthing centers throughout the region. The end market includes not only the United States and other developed countries but also developing countries through partners like Bill and Melinda Gates Foundation targeting the fourteen million women who experience postpartum hemorrhage, and in particular the more than 100,000 who die from it each year.

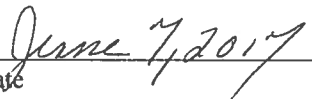
Although the population that is affected by the development of the product is expecting mothers, ultimately they are not the

target customer. The target customer for this product includes any medical facility that has a labor and delivery department, primarily hospitals or birthing centers. While the nursing staff are considered the end user of the product, they do not play a major role in the decision to purchase a product. Therefore, the primary focus when marketing this product will be the administration staff, such as a hospital purchasing agent or a business manager, and physicians as they make the decisions on what products to purchase. However, to successfully market the product to the hospital administration, the end users, nurses and doctors, must also be targeted to ensure that the product meets their requirements. Receiving approval from the nurses and doctors will assist in marketing the device to the hospital administration staff. There are currently 34,000 obstetricians in the United States, which comprises 5% of the total number of physicians. Nurses have a 10:1 presence to doctors, so it was extrapolated that the current market potential is approximately 370,000 people in the United States alone. Although there are some competing devices on the market, Illuminate differentiates itself from competitors by proposing a user-friendly program that will simplify a nurse's job and assist in clear decision making. WUman's Group anticipates to capture 50% of the currently 345 registered birthing centers in USA within five years. However, they expect this number to grow as the number of birth centers has increased by 76% from 2010 to 2017.

Illuminate is being launched by three Bio-medical Engineering students, all with an education and various experiences and strengths that will contribute to the success of the business. The current team also includes two advisors, a clinician from a Wichita, KS Birthing Center and a Bio-medical Engineering professor from Wichita State University with experience in both academia and industry.

Please accept our nomination of the WuMan's Group, Illuminate, to the final round of the 2017 InnovateHER Challenge.


Debra Franklin, Wichita State University, WSU Ventures


Date