**Value Propositions for mothers in prenatal and pregnancy period**

[1] <https://www.nichd.nih.gov/health/topics/pregnancy/conditioninfo/prenatal-care>

Healthy pregnancy is considered as one of the best methods to promote a healthy birth [1]. A correct procedure during this essential period includes processes as planning for reproductive life of mother, vaccinations and infections, understanding family health history, supplying necessary vitamins, controlling health conditions, avoiding harmful habits, avoiding using stimulants, and psychological preparation [1]. This application incorporates features assisting mothers in all these aspects.

**Value 1: Planning for reproductive life of mother.**

[4] https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1542-2011.2011.00057.x

[5] https://www.guttmacher.org/regions/asia/viet-nam

[6] https://vietnamnet.vn/en/contradictions-in-birth-trend-in-vietnam-2187346.html

[7] <https://healthystartepic.org/wp-content/uploads/2018/03/rep_life_planning508.pdf>

[8] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4449999/#:~:text=Unintended%20pregnancy%20increases%20the%20risk,by%20incidence%20of%20unplanned%20pregnancy>.

Women have the ability to determine the timing for their pregnancies and the desired number of children they wish to have. A reproductive life plan would act as a valuable tool guiding them in making these decisions. This plan is to ensure that mothers are on track with their goals [4]. Additionally, planning pregnancy would lead to healthier pregnancies, positive birth outcomes, and overall health and well-being for women and their partners [7]. This also avoid unintended pregnancies (i.e., unwanted pregnancies) and abortions. In 2022, it was reported that over 60% of pregnancies were unintended (2.1 million out of 3.7 million pregnant women), and the abortion rate was approximately 45% [6]. Unintended pregnancy is likely to increase the risk of low birth weight and indicate the infant growth [8].

The application is designed to assist mothers in creating a customized reproductive life plan based on their preferences and needs. Besides, the application would offer functions tracking and monitoring their progress towards their setting goals.

**Value 2: Providing guidelines for vaccinations and infections during pregnancy.**

[9] https://www.cdc.gov/vaccines/pregnancy/hcp-toolkit/guidelines.html

[10] <https://www.cdc.gov/vaccines/parents/by-age/pregnancy.html>

Mothers are advised to receive specific vaccinations at different stages of prenatal and pregnancy period. This is to encourage the protection of both themselves and their child from potential severe diseases [10]. It is important to note that there is no evidence of negative impacts of inactivated virus, bacterial vaccines, or toxoids in fetus. On the contrary, the benefits of receiving vaccinations for expectant mothers outweigh these theoretical harmful effects [9].

The application provides guidance to mothers on the recommended timing for each vaccination, ensuring they have the necessary ones at the appropriate stages of pregnancy.

**Value 3: Booking online medical appointments for mother.**

[11] <https://raisingchildren.net.au/pregnancy/health-wellbeing/tests-appointments/appointments-during-pregnancy>

Antenatal appointments play a vital role in enabling doctors and expectant mothers tracking the development of the child and detect the potential health risk that might develop. Besides, these appointments allow mothers to address their concerns about pregnancy, labour, birth and early parenting [11].

The application offers online booking services for mothers. They have the flexibility to select the date, time, and preferred medical center from the list within the application for their appointments. This feature allows mothers to save time and avoid waiting, making the process more convenient for them.

**Value 4: Recording medical history for mother (Prenatal records).**

[12] <https://www.informedhealth.org/prenatal-care-and-maternity-records.html>

After each check-up appointment, essential information regarding the child's development is recorded, known as maternity records. It is recommended for expectant mothers to bring these documents with them to their appointments throughout the stages of pregnancy [12]. In Vietnam, paper-based maternity records are more commonly used than digital ones.

The application includes a prenatal record feature that involves all maternity records for expectant mothers. These records can be captured by scanning the paper-based maternity records or synchronizing with the data from collaborating medical centers. This helps expectant mothers avoid the risk of misplacing important documents and reduces their worries regarding the management of these records.

**Value 5: Analyzing the medical condition of mother.**

[13] <https://medlineplus.gov/healthproblemsinpregnancy.html>

[14] <https://www.nhs.uk/pregnancy/trying-for-a-baby/planning-your-pregnancy/>

[15] <https://diag.vn/en/medical-information/prenetal-screening/>

Each pregancy obtain potential risks. These risks are affected by the following factors: health conditions of mothers before and during the pregnancy stage, health issues occurred in the last pregnancy, pregnancy with more than one baby and pregnancy when over 35. These can affect health of both pregnant women and their fetus [13]. Expectant mothers need to understand the conditions of themselves to deliver a healthy pregnancy. To understand, there are two required process including prenatal testing and controlling health risks [14].

Approximately 1.73% of infants are born with birth defects. These defects not only impact the development of children but also have an effect on the mental health of the parents. Therefore, prenatal screening is important as it reduces the risk by identifying potential health problems. Early detection allows for timely treatment, increasing the chances of successful recovery [15].

Parents can schedule appoinments for this testing via the application. After receiving the test results, the application can record and analyze them, use this information to personalized a pregnancy plan aligning with the specfic conditions and needs of the parents.

**Value 6: Providing guidances during prenatal and pregnancy process.**

[16] <https://www.pregnancybirthbaby.org.au/health-during-pregnancy>

[17] <https://www.pregnancybirthbaby.org.au/healthy-diet-during-pregnancy>

[18] <https://www.pregnancybirthbaby.org.au/exercising-during-pregnancy>

[19] <https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-stages-and-changes>

Throughout the prenatal and pregnancy journey, there are several precautions regarding diet, exercise, avoidance of certain substances, and the use of supplements for mothers [16].

Pregnant mothers pretend to experience weight gain during pregnancy. However, excessive weight gain can cause a higher risk of complications for both the mother and the baby. Therefore, maintaining a healthy diet is required. The diet could include external supplements providing mothers and their babies necessary vitamins, ensuring that they develop healthily. The application will utilize the recorded data collected from mothers to create a personalized diet plan or it can also assist by scanning and tracking the dietary recommendations provided by healthcare professionals. Additionally, the application would further help mothers monitor their food intake and mealtimes effectively.

Exercise is another need for pregnant mothers. Doing exercises in an appropriate way would help mothers prepare for their labour [18]. The application would offer a selection of exercises recommended for mothers, customized to each stage of pregnancy. These exercises will be designed to promote a healthy body while preparing for childbirth. By following these tailored exercise recommendations, expectant mothers can maintain their physical well-being throughout their pregnancy journey.

Mothers also need to avoid stimulants and unhealthy habits during pregnancy [1]. The application would notify mothers by sharing relevant news and information related to the potential consequences of engaging in these activities. This feature aims to gain awareness of mothers, helping them to protect the health of themselves and their baby.

The application also notifies mothers about the changes occurring in their bodies during pregnancy. These changes are significant and often unexpected. By informing mothers about the potential symptoms and transformations of their bodies, the application aims to provide support in strengthening their emotions and feelings [19].

**Value 7: Prepare mental health for mothers.**

[44] <https://www.marchofdimes.org/find-support/blog/take-care-your-mental-health-during-pregnancy#:~:text=Mothers%20who%20are%20depressed%2C%20anxious,Poor%20nutrition>

Depression, anxiety, and other mental health issues could lead

**Value 8: Connecting mothers together.**

[20] <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-023-06089-0>

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**Value Propositions for husbands and relatives of expectant mothers.**

**Value 9: Connecting mothers with husbands and relatives.**

[21] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8486935/>

[22] <https://www.unicef.org/rosa/stories/10-healthy-practices-expectant-mothers-and-fathers-follow-and-after-birth>

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