Student Project Brief: *pregnancy*

What is the health condition being addressed?

Pregnancy

What are the important facts about this condition and its management?

Once pregnancy is confirmed, expecting families need to plan and manage their pregnancy for the upcoming 9 months. Families need to digest a lot of information, make a lot of decisions, need to monitor their health, attend appointments, do tests and deal with anxiety and uncertainty.

What are the problems to be solved and that existing technologies do not solve?

NOTE: ideally we want the students to do research on problems themselves. Our overarching problem statement is:

How can we make planning & managing pregnancy in Australia cheaper, better and/or more patient-focussed by means of digital technology?

This can be split out in problem statements for our different stakeholders:

Who are the prospective users of this technology?

Patients. How does the patient journey look for patients? What are the most important positive events and what are the negative events? And how can we make the patient journey better?

Some problems that we've already identified:

- Families are overwhelmed by the amount of information and decisions that have to be made. They get bombarded with information and feel like they don't have enough time/support/knowledge to make the right decisions.
- Families have anxiety about the health of their baby. Is everything going all right? Am I doing the right things? A healthcare professional is only seen once every 2-4 weeks.
- Pregnancy is expensive. An obstetrician consultation can cost up to $400 dollar. Patient need to pay more and more out of pocket and private clinicians see a lot of patient moving to the public system, instead of the private system, partly due to cost.
- Pregnancy information is not personalised towards the individual family. All the information is generic and not tailored towards the situation of the expecting family.

Public clinics. How can we help private/public clinics that manage pregnancy and birth to improve their practice?

Some problems that we've already identified:

- Healthcare professionals don't have enough information. Vital parameters are only measured during consultations. High-complexity pregnancies can only be detected during the consultations, symptoms cannot be picked up earlier.
- Can we predict/prevent high-complex pregnancies?
- Can we prevent still birth?
- Can we monitor and track high-complex pregnancies better?
- Administrative burden on healthcare professionals is high. When the expecting families come in, a battery of tests and measurements have to be done on the mother. Questionnaires need to be filled in, blood pressure needs to be measured and many more. This doesn't leave much time to actual talk to the family, to resolve their anxiety.
- Can we optimise patient satisfaction and referrals?

Private clinics. *How can we help private/ clinics that manage pregnancy and birth to improve their practice?*

- Same as public clinics, + ..
- Patients pay between $2,000 - $10,000 out-of-pocket for a normal pregnancy in a private clinic. Can we offer better value for money for our private patients? Can we offer extra services, with limited costs, so that they're more inclined to go private over public

Private insurance companies: *How can we help insurance companies that insurance private pregnancy and birth to improve their service offering?*

- Same as private clinics, + …
- Can we reduce the costs of private pregnancies for insurers?
- Can a private insurance company offer a service that differentiates them from their competitors in the domain of pregnancy?

Who are the prospective users of this technology? Any notable characteristics?

- Obstetricians, midwifes, expecting families (father/mother)

Who are the other stakeholders?

- Families
- Private and public clinics
  - o Midwives
  - o Obstetricians
  - o Practice managers
- Insurance companies
- Medicare

Are there any technological, organisational or other contextual constraints upon design?

Hardware Constraints

- We will only use off-the-shelf hardware. No new devices can be created.

Software constraints

- We're experienced in the following technologies. Ideally, we use these technologies for the solutions:
    - Mobile app development (iOS, Android)
    - Web development (websites, portals, dashboards, etc)

Organisational constraints

- We're good in behaviour change applications. We've extensive experience with implementing behaviour change mechanism to keep people motivated for a long-time. Our adherence and engagement rates are very high
- No flying cars or equivalent. We're looking for solutions that are feasible to build by ourselves, since we want to go to market with these solutions. So when you pick your problems, pick them wisely. We can't build 100 functionalities in one application, it needs to be realistic and commercially viable. For example: We won't build something that takes 2 years development time and can only be sold to to 200 obstetricians per year.
- Value for money is important: how can we create as much value with limited funds and resources?
- Somebody needs to pay for it. We don't want to rely on subsidies to fund this project. Who is willing to pay for this solution to make it sustainable?