

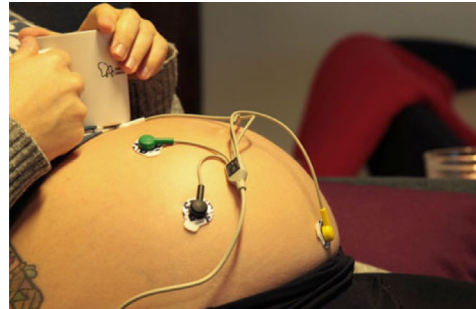
Telemedical solution for pregnancy complications

– clinically integrated home monitoring



Summary

Pregnant women experiencing complications are offered home-monitoring options in Denmark. Home monitoring is offered to pregnant women with preeclampsia, premature drainage or other complications or medical conditions. Admitted pregnant women make self-monitoring today as well as using the same technology. The solution will replace many hospitalisations and hospital visits, benefitting pregnant woman and hospital staff.



Main effects of the solution

Many hospitalizations for women with premature drainage before week 37 of the pregnancy can be avoided because pregnant women will be able to self-monitor their pregnancies. Some of the usual outpatient visits are replaced 1:1 by telemedicine.

For such complications there is an estimated potential of reducing hospitalizations by 5,850 days across Denmark.

Users

Users of the solution are pregnant women experiencing following complications:

- Increased complicated blood pressure.
- Preeclampsia with chronic hypertension.
- Mild to moderate preeclampsia.
- Premature drainage before the 37th week of pregnancy without regular contractions.
- Pregnant women with previous severe preeclampsia.

These pregnant women would otherwise often be hospitalized. It is estimated that there are 2,600 women with these five types of complications at a national level.

Quotes/Testimonials

"This is my first child, so I was absolutely devastated when things went wrong in week 28. I really believe that being able to stay at home made a difference for me. My water broke prematurely, and I would normally have had to be hospitalised or to visit the hospital daily for measurements to be taken. I have been able to take the measurements at home in the morning, finish everything within an hour and then get on with the things I needed to do. I've always had a lifeline to the hospital, so I've felt safe taking the measurements at home. I don't know if this is because Lone (the midwife) explained so much to me in the beginning, including how to take measurements, and because I've had a direct number to the hospital. I've never felt anxious about taking the measurements at home."

– Patient

Elaboration

Needs and challenges

Women with pregnancy complications must visit a hospital for a check-up. These check-ups are often time consuming for both the patient and healthcare staff. This solution enables women to take the measurements themselves at home and hospital staff can then focus on the patients that need a physical meeting.

Solution and function

Pregnant women take their measurements at home before 09.00 and the midwife or nurse at the hospital examines the data. Measurement discrepancies will be discussed with the obstetrician.

The telemedical equipment package comprises:

- A tablet.
- A blood pressure device.
- Test strips for measuring protein in urine.
- CTG device for measuring contraction activity and foetal heart sound.
- Pregnant women with premature drainage before week 37 of pregnancy also receive a CRP meter for measuring infection parameters particularly relevant to this target group.
- Scales.

For pregnant women with premature drainage before week 37 of pregnancy, the procedure is for them to be admitted for observation for around three days, after which they will receive telemedical monitoring instead of remaining at the hospital.

Implementation

The workflow in the hospital department has been redesigned so that telemedicine services replace hospital visits, rather than telemedicine services being added to the existing set-up.

Nurses and midwives have been trained in the use of telemedical equipment and pass on their knowledge to pregnant women. The staff already know which results they must be aware of and will therefore not require any further training in terms of treatment.

Economy

Costs are primarily driven by costs for healthcare professionals in connection with the coordination and control of the telemedicine being performed. There are also costs related to training pregnant women with complications in the use of telemedical equipment, as well as costs related to running and maintaining telemedicine.

Cost in terms of implementation relate to project management and the training of health professionals. Investment costs amount to around 25% of all costs over a 5-year period. The business case estimates a net savings potential of DKK 18 million over five years.

Communication

Pregnant women and health professionals communicate through mandatory follow-up meetings and via phone if any of the results give cause for concern. In the event of undesirable results, the woman in question will be told to visit her midwife/obstetrician at the hospital.

More about effects

During the implementation phase, the organization successfully reduced the number of hospital beds for pregnant women with complications by 44%.

The introduction of telemedical home monitoring for pregnant women with premature drainage before week 37 of pregnancy enables an average reduction in hospitalization time of 22 days of admission per procedure. For the other sub-target groups, the introduction of telemedical home monitoring enables a cost reduction of 45% per outpatient control as a result of less time spent per individual control.

Pregnant women with complications are satisfied with the telemedical solution as it contributes to a greater level of safety and flexibility in the process. In addition to a greater degree of safety and flexibility, the telemedicine solution also requires greater skills and the opportunity for pregnant women to assume greater responsibility for their own treatment.

Learning and tips

Users will need to be trained in how to take measurements, all of which are fairly basic. The health care already know what results is alarming and can act on the basis of this knowledge.

Further information

- [Telemedicine for pregnant women with complications »](#). (movie and text in danish)
- [A report about the solution](#) (PDF in danish)

Context

The solution can be used for all pregnant women who have at least one of the five complications mentioned above in order to reduce the number of visits to the hospital and the number of hospitalizations.

It can be used in any setting, as long as pregnant women have access to the necessary equipment, which will be provided by the hospital.

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