



Ing. A.S.N. (Alex) Vernooij PDEng

## Biomedical Engineering

**PDEng Program:**  
Qualified Medical Engineer

**Company:**  
Leiden University Medical Centre (LUMC)

**Promotor/Supervisor:**  
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**Current employment:**  
Qualified Medical Engineer at the Instrumentation Department of LUMC

## ConCord

### Making the Aeration, Breathing and then Clamping approach as safe as possible

After the birth of an a term (gestational age 37 weeks or more) baby it is common practice to wait a couple of minutes before clamping the umbilical cord. This allows the blood in the placenta to flow to the baby. The benefits of this have already been known for many years.

A lot of premature babies (less than 35 weeks of gestation) need resuscitation directly after birth. Therefore the cord is cut quickly and the baby is transferred to a neonatal resuscitation table.

A new resuscitation table ("ConCord") that allows both late cord clamping and immediate restitution was required.

We first investigated the requirements, performed risk analyses and developed a new Standard Operating Procedure (SOP). We designed and built the ConCord that allows the neonatologist to resuscitate the premature baby according to the international guidelines without clamping the cord.

A premature baby can now benefit from late cord clamping and immediate resuscitation. Besides that, mother and baby do not have to be separated from each other.

A first clinical study (safety and feasibility study) is now being performed with the ConCord. We are also validating, with partners, the business potential of the ConCord to start a company with this (patented) invention.

