A FRAM analysis in a Department of Obstetrics at the County Hospital Ryhov (sotuthern part of Sweden)

(labor ward)

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PhD Psychology

FRAMily Munchen

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2013

Kungliga Tekniska Högskolan

KTH

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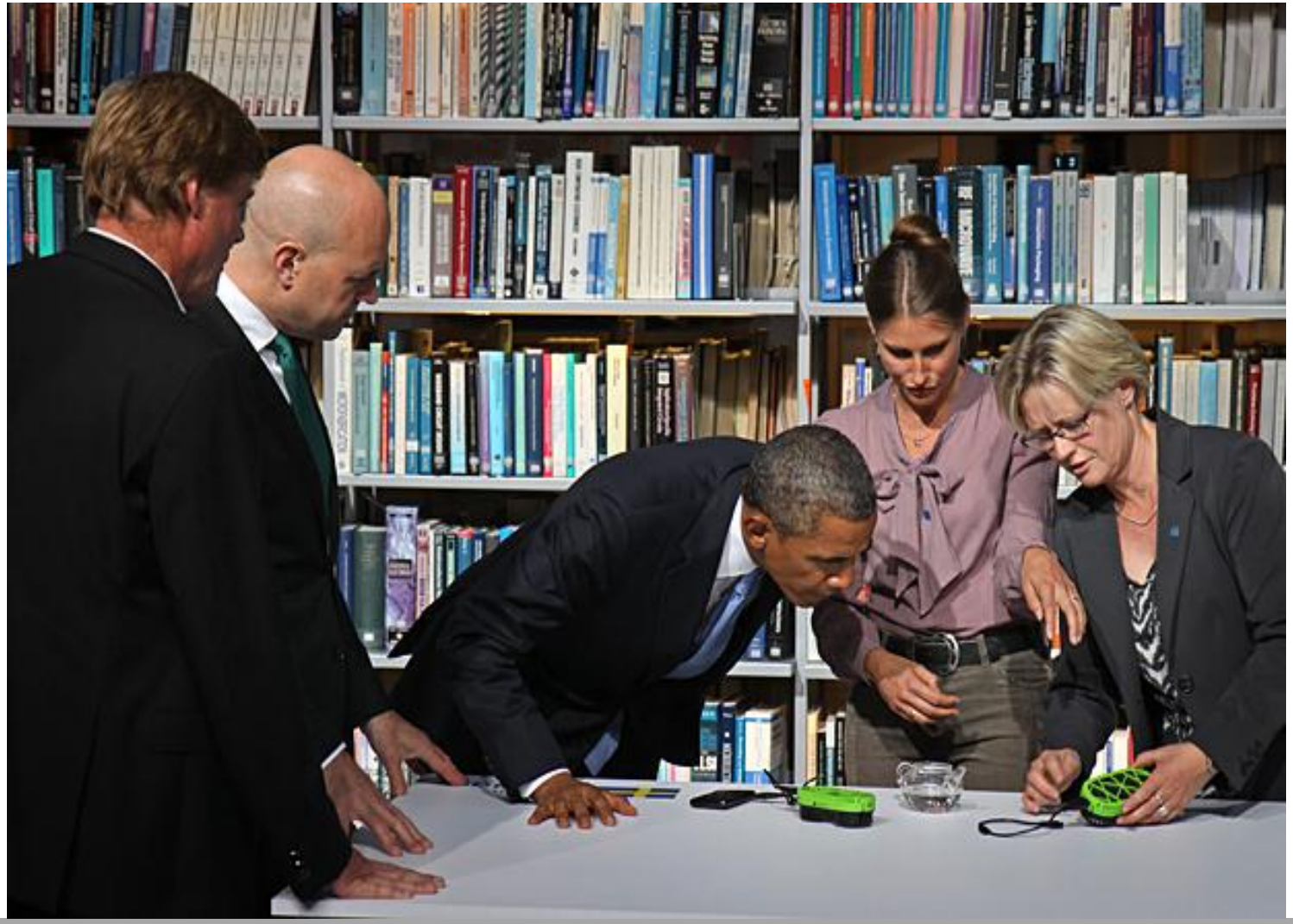
U.S. President Barack Obama visited the Royal Institute of Technology on Wednesday last week. Together with the swedish Prime Minister Fredrik Reinfeldt, he visited KTH's research in renewable energy.

President Barack Obama



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The FRAM analysis was performed by:

- **Helen Alm**, Human Factors Specialist with previous experience of FRAM*, Business Division Nuclear Power - Nuclear Safety Vattenfall
- **Sanny Shamoun**, PhD D, patient safety researcher, KTH Patient Safety
- **Berit Axelsson**, Qulturum Center for improvement at the County Council of Jönköping, Sweden
- **Axel Ros**, MD, PhD D, Chief Medical Officer, the County Hospital Ryhov in Jönköping, Sweden
- Professor **Erik Hollnagel** and Professor **Richard Cook** supported and guided the work with the analysis.

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- The project was funded by **Qulturum Center for improvement** at the County Council of Jönköping and the **Swedish Patient Insurance** (LÖF)

Department of Obstetrics

(approximately 2200 children are born every year)

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- Is the place in a hospital where babies are born.
- Giving birth, and being borne, is one of the most natural thing in life.
- It is however also dangerous.
- In a matter of seconds giving birth can turn from not needing any medical assistance at all into something really dramatic, becoming difficult, dangerous, requiring medical actions and lots of resources so that a baby can be safely born.

Department of Obstetrics

- High interactive workstation.
- Highly trained professionals of different professions (midwives, nurse assistants and physicians)
- Teamwork in the care of patients, the mothers-to-be.
- Both simple and sophisticated technical support are used.
- The workload is often high and can change quickly.
- Each delivery can be regarded as complex in itself
- The staff has to assist many deliveries at the same time.

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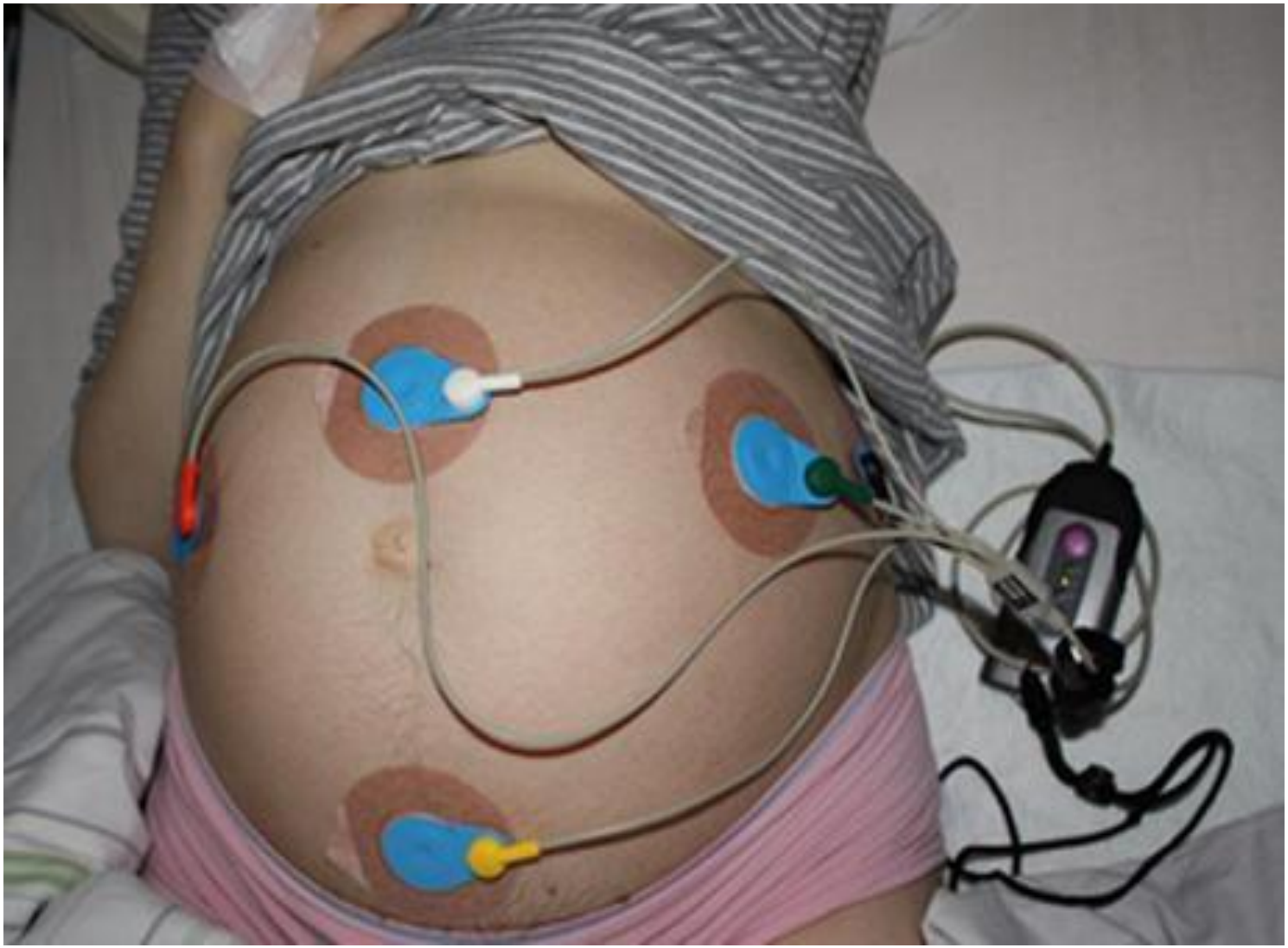

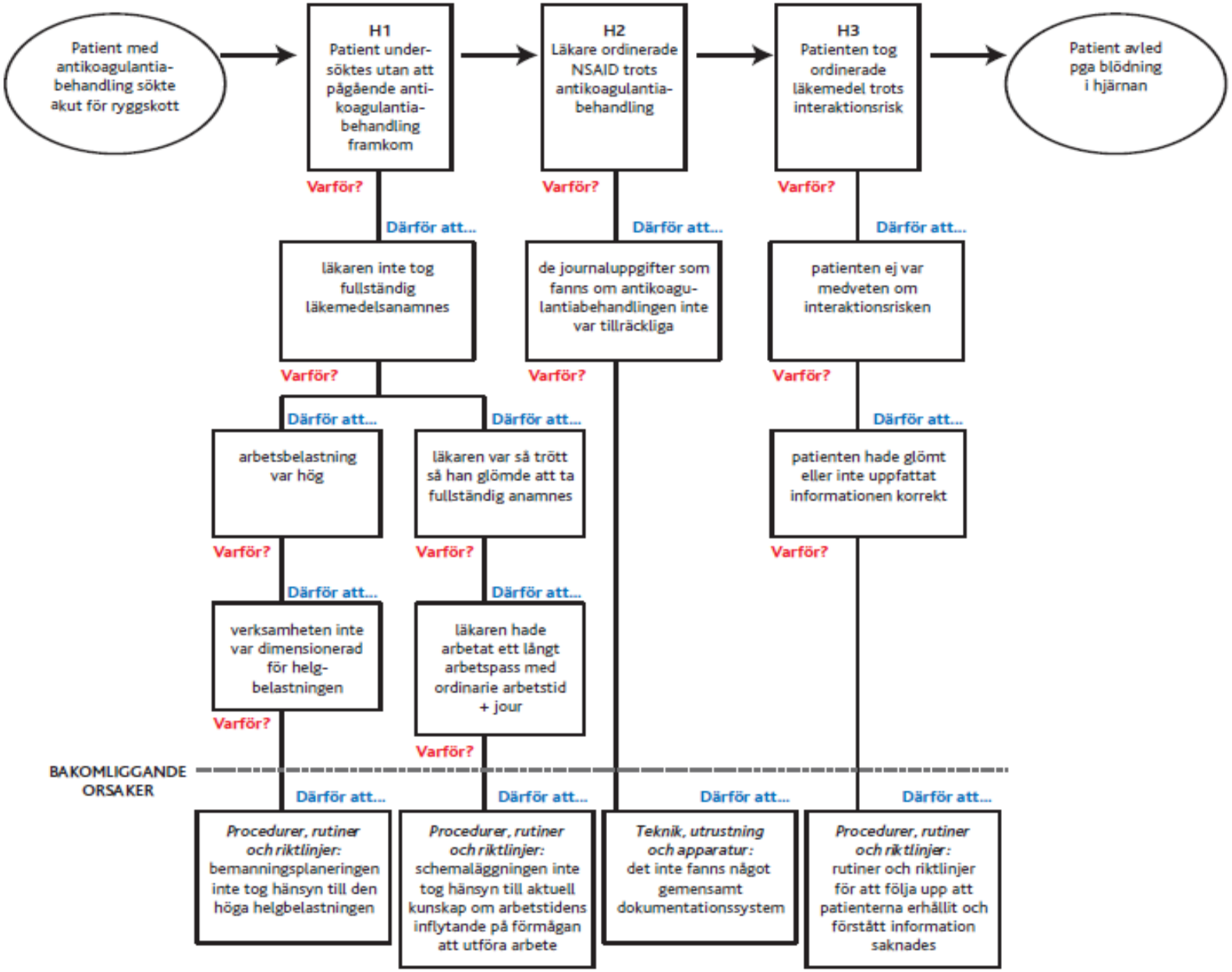

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What have we done?

- Start-up meeting with the professors (x2)
- interviewed both staff and management (2 days)
- Observations (1,5 working shifts,
- Looked through cases (previous accidents)
- Looked at practice (procedures and documents)
- Instantiations were performed in the analysis group and also tested together with staff.
- Concluding discussions and presentation with professors and management in the OB
- Scope of work so far 15 days

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“Four” steps

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0. Define the purpose of the current analysis. Risk or accident?
1. Identify and describe the functions
2. Identifying variability
3. Examine the combined variability
4. Implications of the analysis - what to do?

“Four” steps

0. Define the purpose of the current analysis. Risk or accident?

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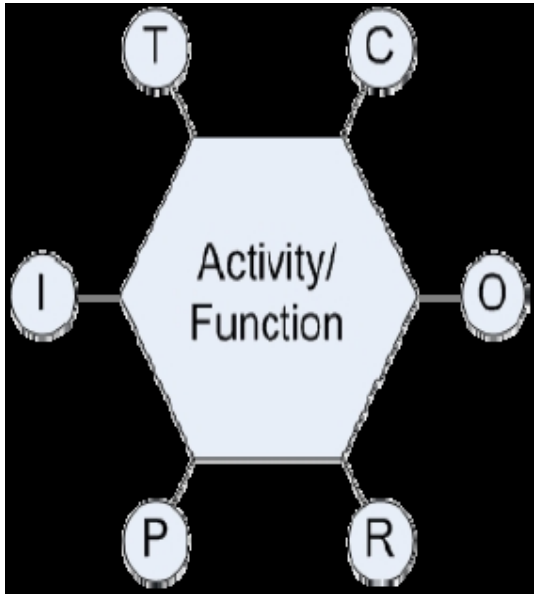
A FRAM analysis can be useful in understanding the risks in the work in a department of obstetrics and what could be the most valuable measures to achieve higher patient safety.

In this pilot Study FRAM is used as a riskanalysis

“Four” steps

1. Identify and describe the functions

Functions of interest:(work-as-done)



- Connect CTG
- Monitoring mother and child
- Distribute the patient to team
- Deal with the absence of staff
- Preparing the delivery room
- ...Total 21 functions were described

  and each function was described by the six aspects

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Function: Distribute the patient to team

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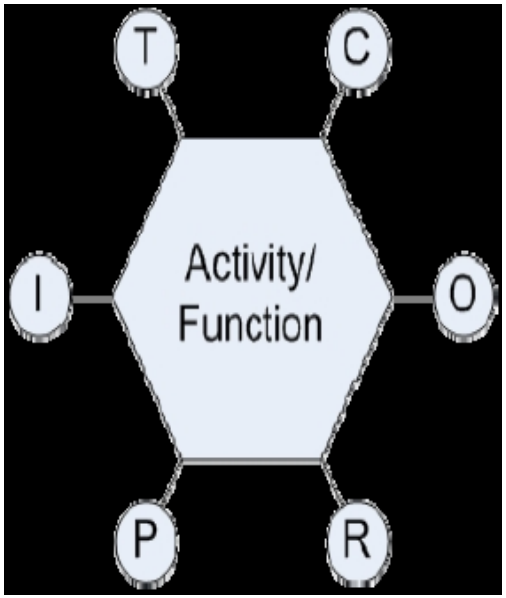
The patient comes "knocks on the door"



Patients assigned to midwife/team

Risk assessment

Staff with appropriate skills at OB

21 Functions were defined

[Kopia av FRAM analysis form 24 juni.xls]

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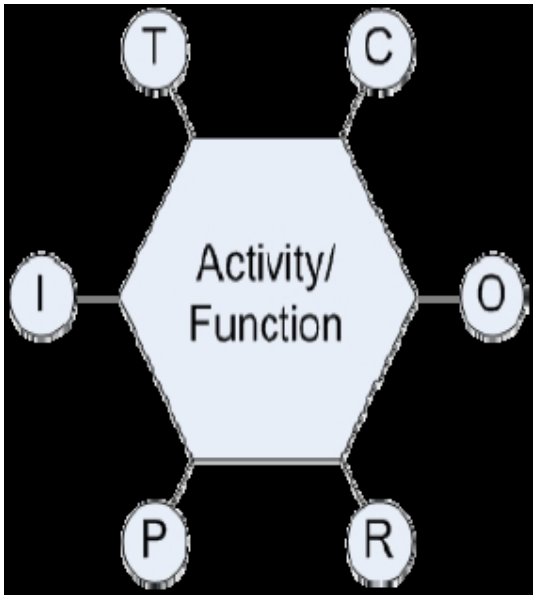
The patient comes in "knocking on the door"

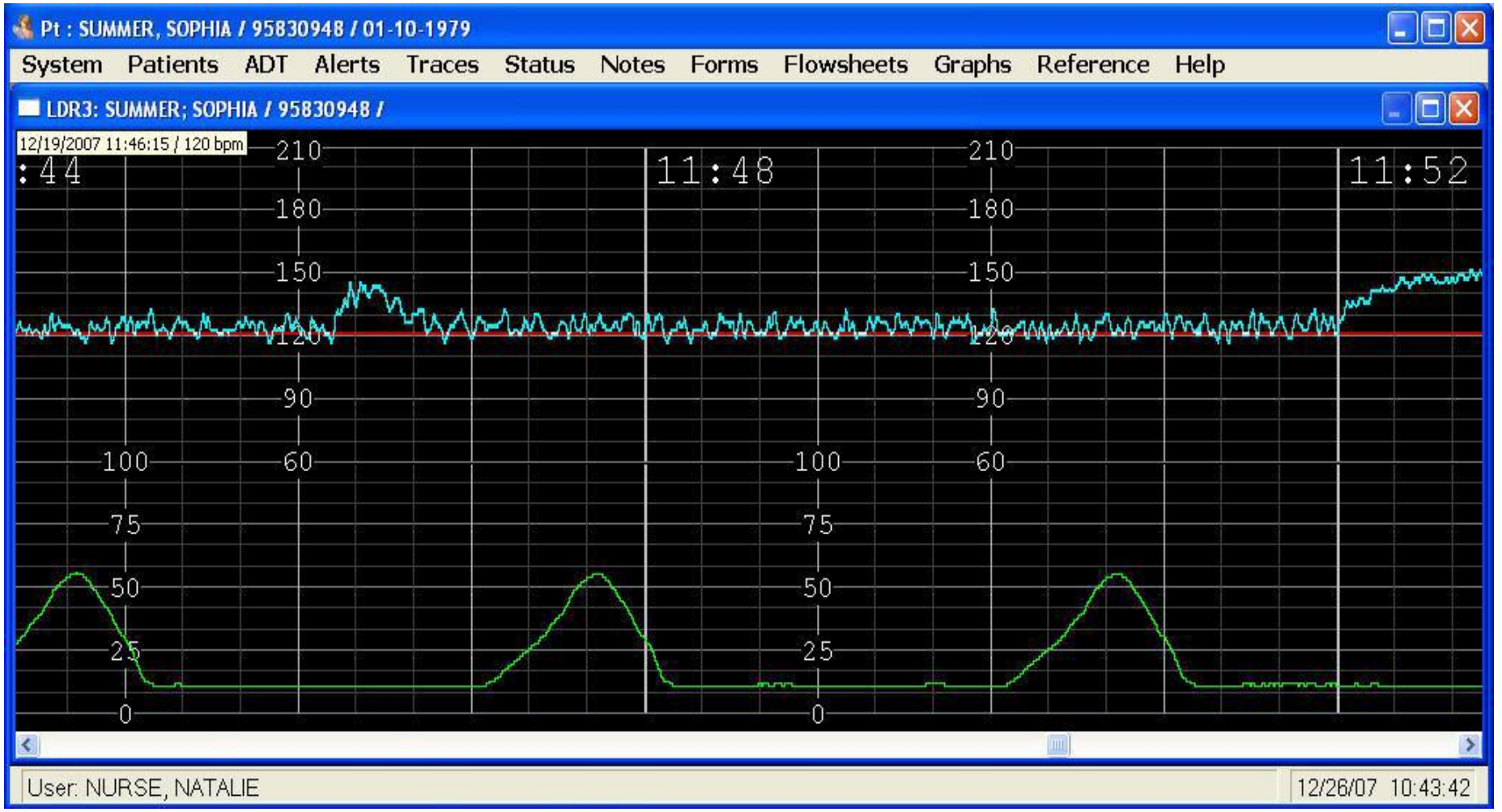


Patients assigned to midwife/team

Risk assessment

Staff with appropriate skills at OB

	A	B	C	D	E	F	G	H
1	SCOPE:							
2			Background Function		Foreground Function		POTENTIAL VARIABILITY	ACTUAL VARIABILITY
3	**FUNCTION TITLE** (Should be a short, distinctive label)	Övervaka mamma och barn						
4	**FUNCTION DESCRIPTION** (A free-text description of the function, may include who does what and when)	Att skapa kunskap om mamma/barns tillstånd i vilket ingår att göra klinisk undersökning (patogramet), smärtskatta (VAS-skal), CTG-registrering Perseption)						
5	**INPUT:** That which is taken in, or operated on by a function, and used as basis for the output. The 'signal' that activates or starts a function.	Patienten tilldelad BM/team						
6		Beslut om fortsatt övervakning						
7		Ny BM tar över ansvar						
8								
9								
10								
11							SIMPLE DESCRIPTION -	Perception
12	**OUTPUT**: The result of the function, what is produced or manufactured. The output represents a change of state – of the system or of one or more output parameters.						**Tid**	
13							**Precision**	Kunskapen finns men man uppfattar den inte eller att kunskap finns
14								
15							**Vad som kan påverka**	Worst case: ny kunskap som man inte uppfattar eller som man up
16							stress	
17		Mer/uppdaterad kunskap om mamma/barns tillstånd, förlossningsgrogression					Fysisk och psykisk	
18							Kommunikation med	
19	**PRE-CONDITIONS** Conditions that must be satisfied before a function is carried out.						arbetslagetssamarbete	
20							erfarenheter, kunskap	
21								
22								
23		Patienten har fått rum						
24								
25								
26	**RESOURCE**: That which is needed and consumed while a function is carried out. **Execution conditions:** That which is needed but not consumed (e.g. competence).							
27								
28		Riskbedömning						
29		Personal med advekat kompetens på förlossningen						
30		Information på lappar						
31		(Borde även vara information från journal?)						
32								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"Four" steps

2. Identifying variability - All (?) Functions performed by humans is potentially varying!

- Functions performed by the (single) person
  -
  -
  -
  -
  -
- Functions performed by the group of people / organizations
  - communication
  - trust / confidence
  - Organizational memory
  - Organizational culture
  - Regulatory / supervisory

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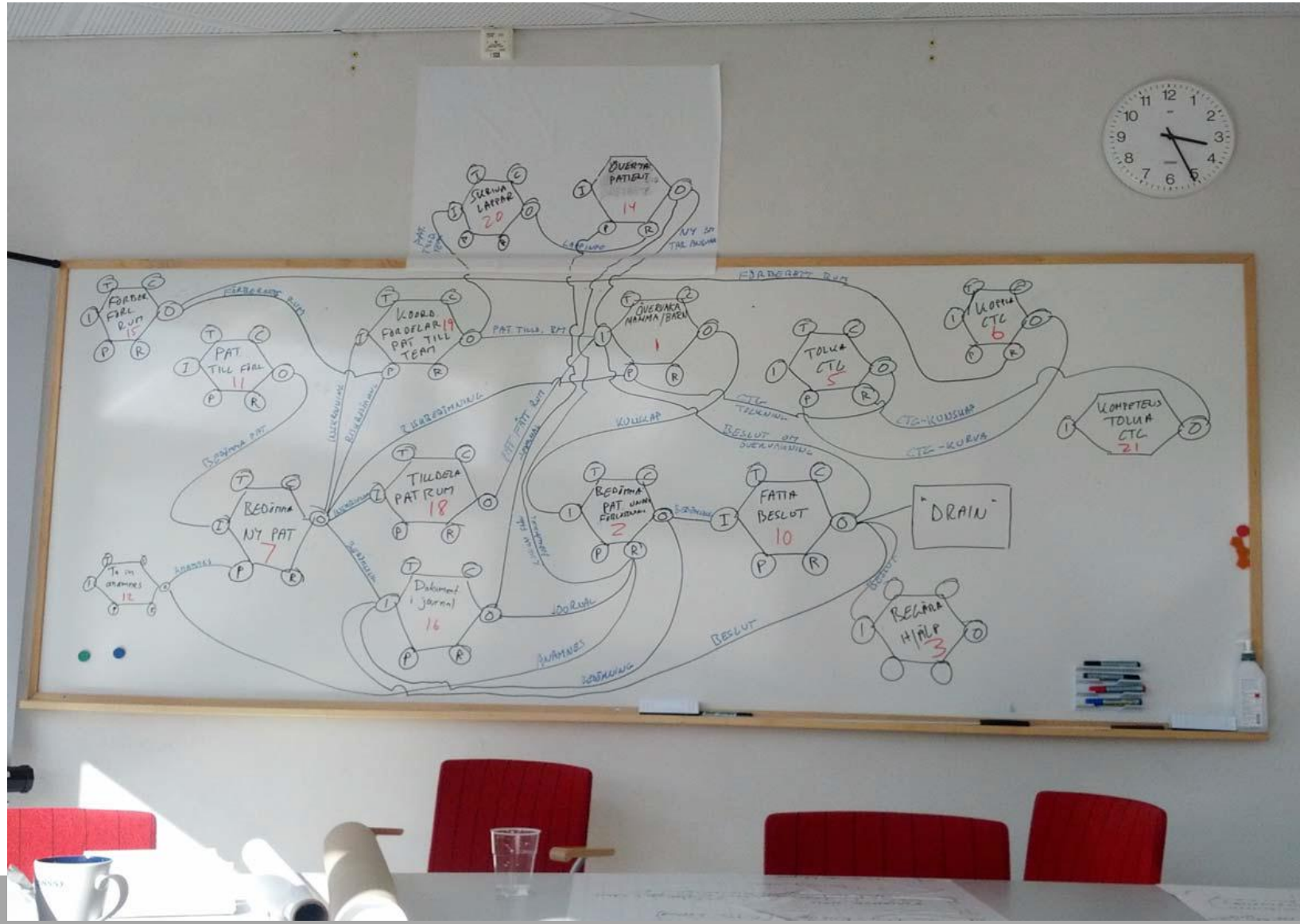
3.Examine the combined variability



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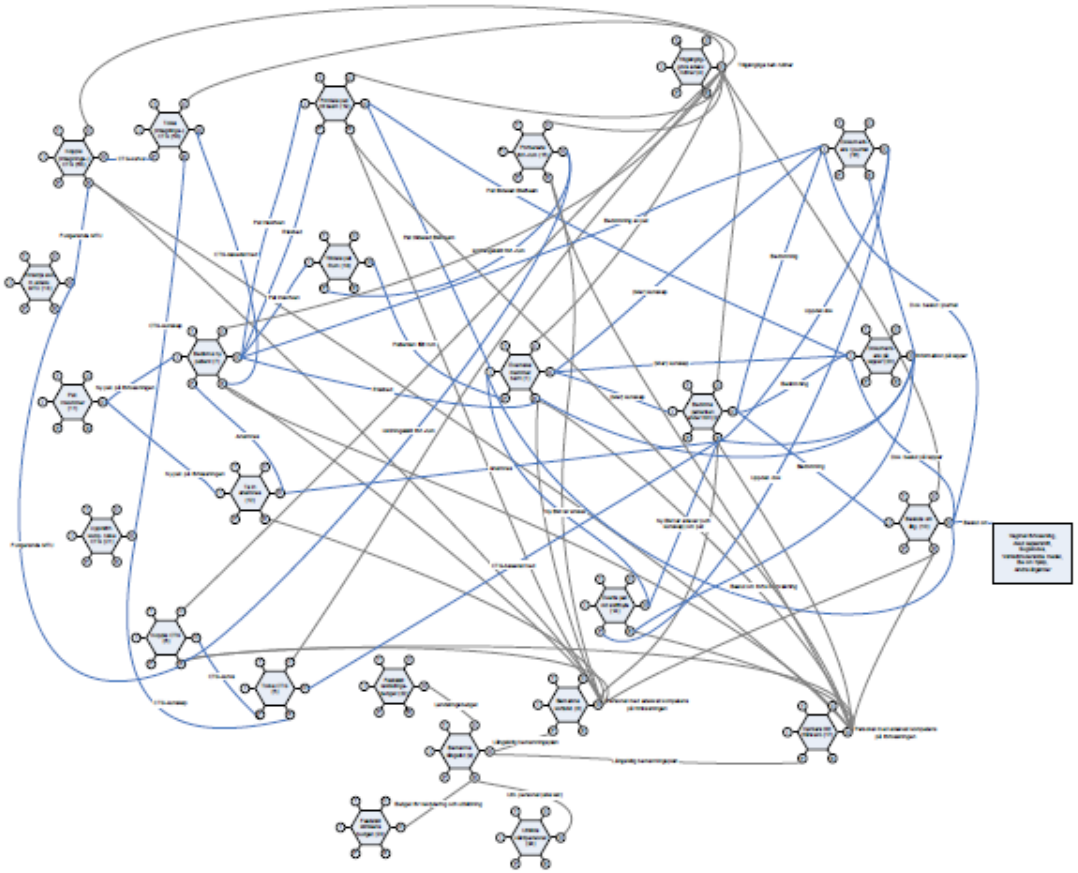

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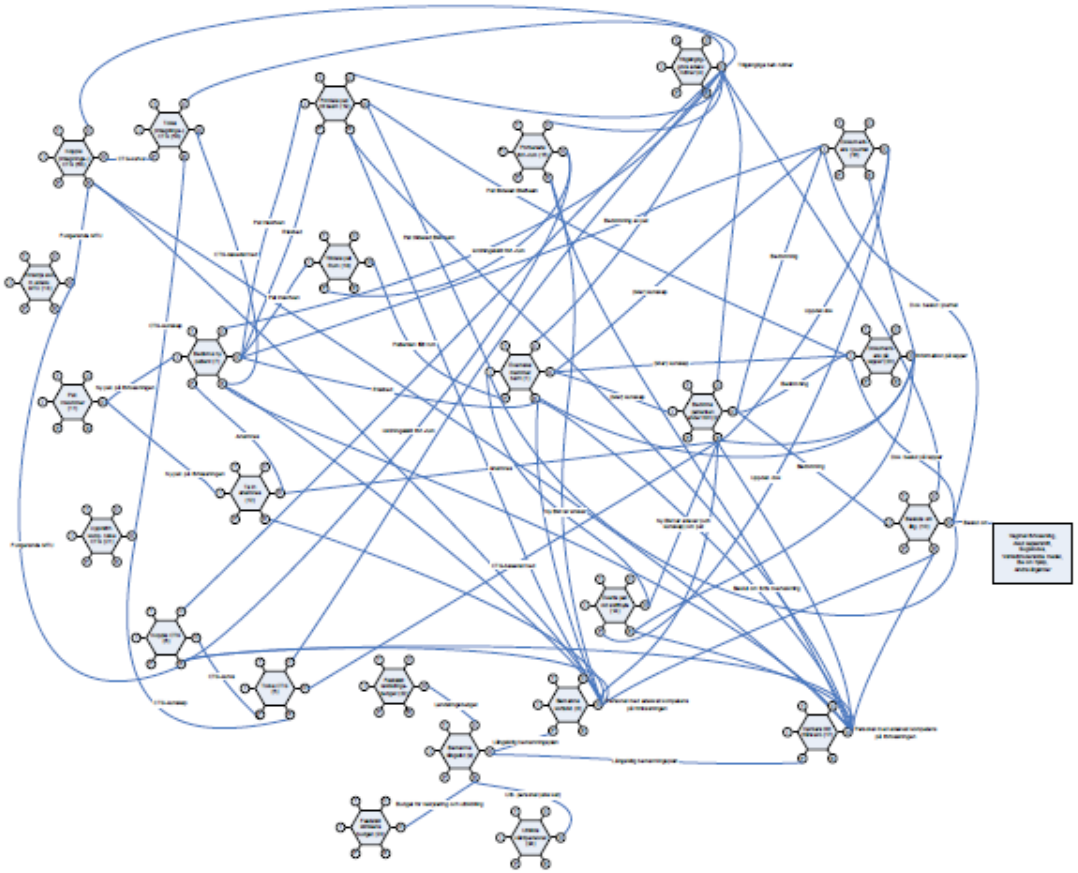

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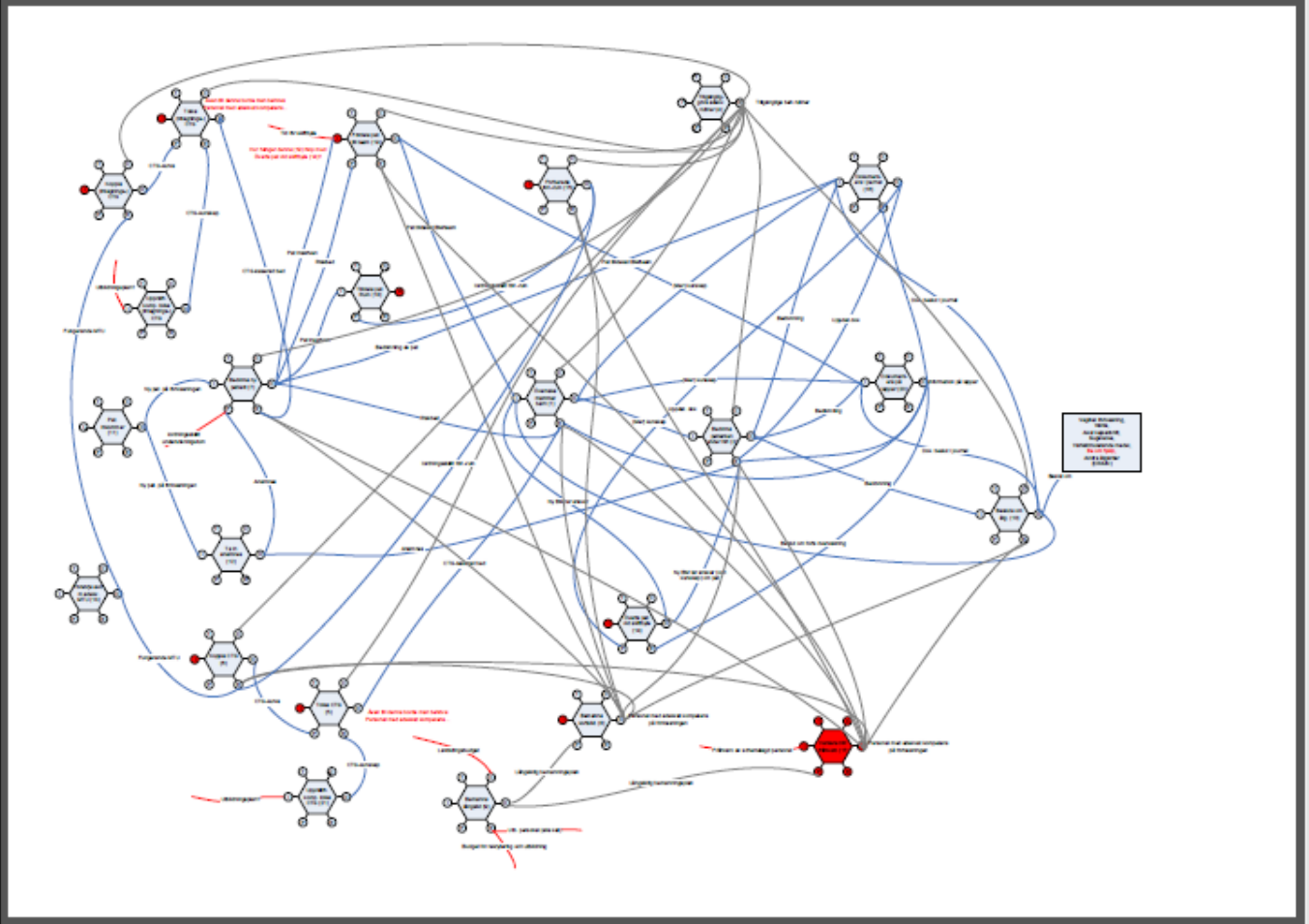

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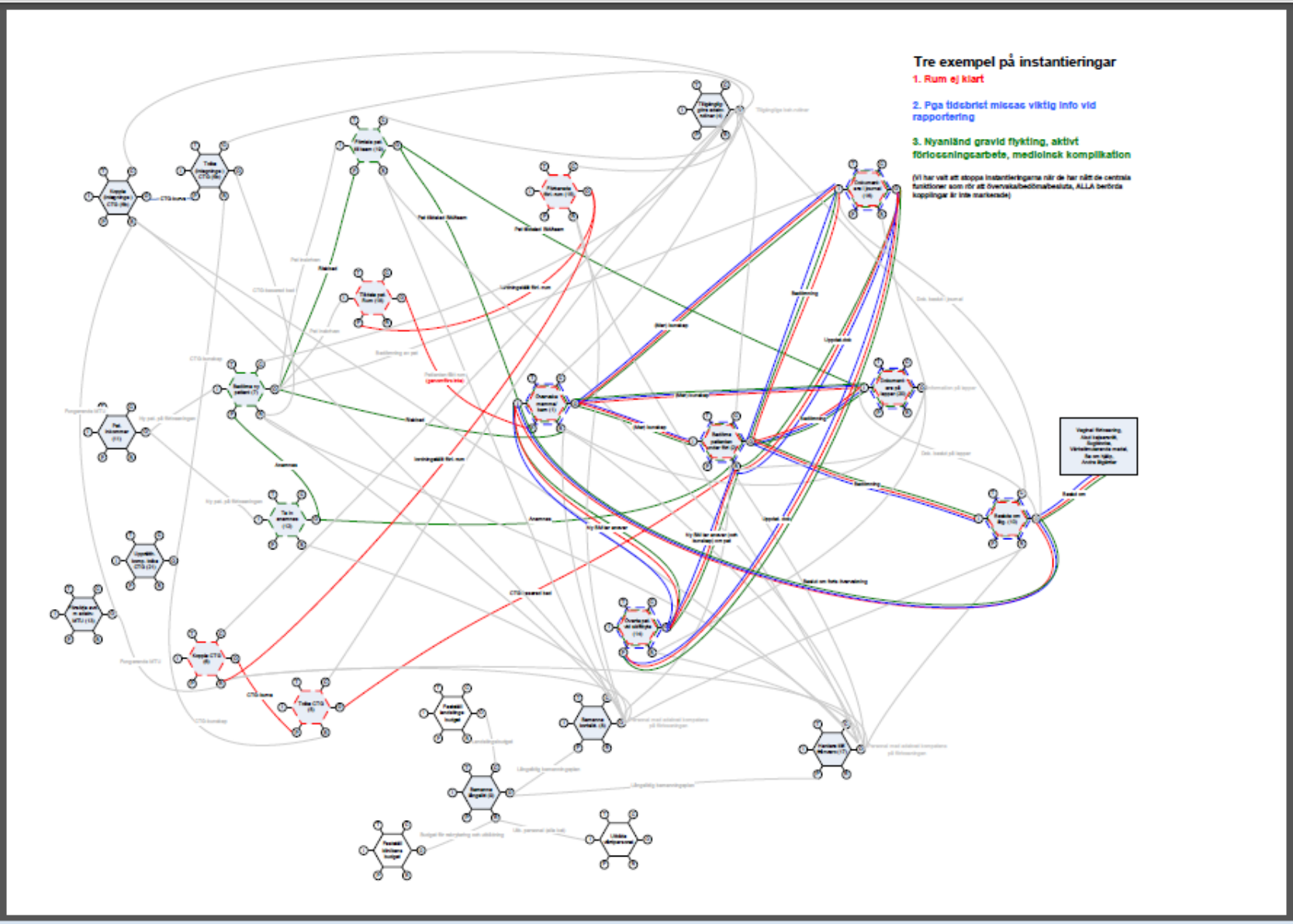

Some results from the analysis:

- There is a high degree of coupling between functions in a department of obstetrics; variability in the system is high.
- Main areas of importance to reduce/damp variability and improve patient safety includes measures to improve how the care-giving staff can supervise, judge and take clinical decisions in the labour process. These probably includes more resources and how the work is organised.
- Several measures for dampening variability is already in place in how work in the department is performed.
- Information gained in the FRAM analysis was not evident in previous RCA-based event analysis.

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“Four” steps

4. Implications of the analysis - what to do?

- a new group of four people don´t "know" each other
- a new area (OB, maternity ward)
- only one person who had experience with the method
- No earlier exampels of using FRAM as a risk analysis method

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What problems and issues we have struggled with?

• How to get to and describe what goes on in the head of midwife / doctor?

- Cognitive functions; three core functions (monitor /evaluate/decide). It is perhaps a very simple solution to say that there is one function doing this (assess the patient). Do we miss the most important thing ?

• All aspects should be linked to a function (a fairly strict interpretation of step 1 as described in the book).

• " Manage outpatients ' (or similar functions/aspects). The function is likely to be linked to the time of , basically , all other functions. It feels a bit messy. The same is true for the functions to have staff with the right skills in the department.

• In general it was difficult to get into describe the time aspect. E.g. . shift change should be a perfect example where such an aspect is a given - but from what function would such aspect come from?

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• "Social interaction " , although this has been discussed with Erik who suggested we use it as a resource. If we use this as a resource, so there must also be a function that provides us with that aspect?.

-Then the question is from where “social interaction” comes from?
- How do you describe such a function?
- It will also , just like the other aspects above be connecting to almost all other functions.

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• We have had many long discussions about what is a resource , what is a precondition and what is an input.

•It has been like taking one step FRAM and two steps back but in the end we have completed and reached our goal to test the method

Sometimes we had difficulty getting to any input at all - which is a bit odd. There are functions that is just a “need” (and it can not be traced to a specific function), it is an overall task (ex. The roll of the midwives, to help a woman to give birth) .

• We have developed a model that seems to fit rather well with “reality”, but our problem is that we have not quite figured out how to use instantiation loops to get an overview of the potential risks. We have tried to go through a number of different cases / scenarios in the model, but do not think it gives so much to try a few of these when what we want is a balanced overview. Have also tried to build on some relatively common / possible situation descriptions / " settings" but it was basically the same thing as an instantiation .

• How should an analysis group be set up? Good with a mix of competence. What about including staff from the ward in the group?

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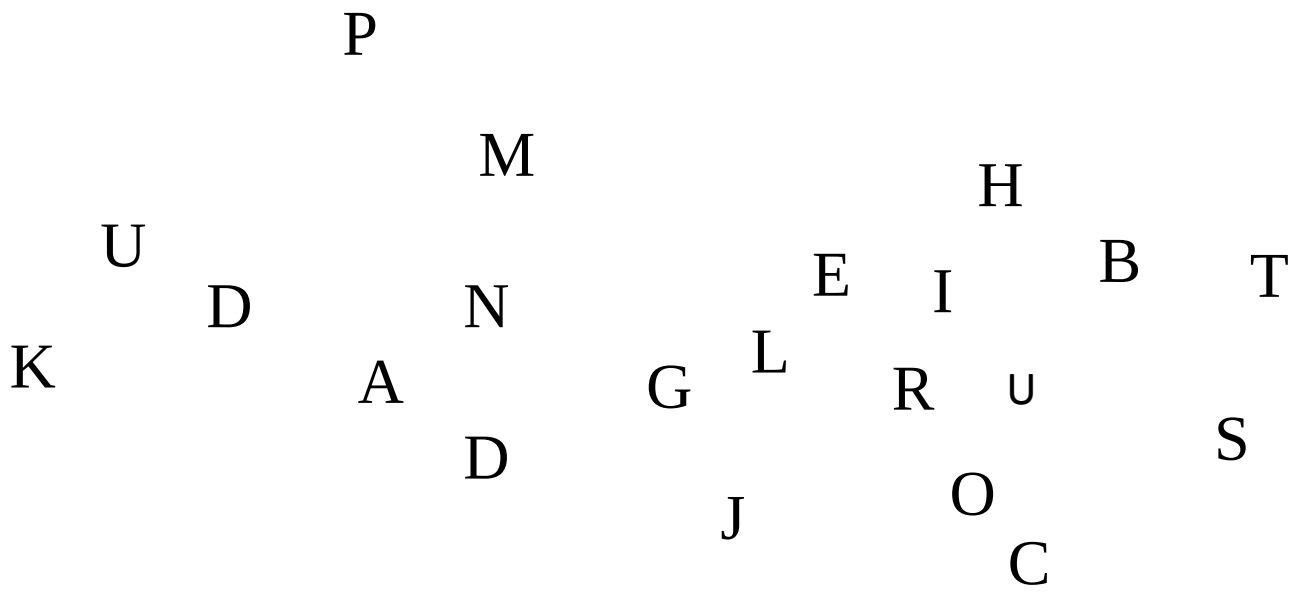
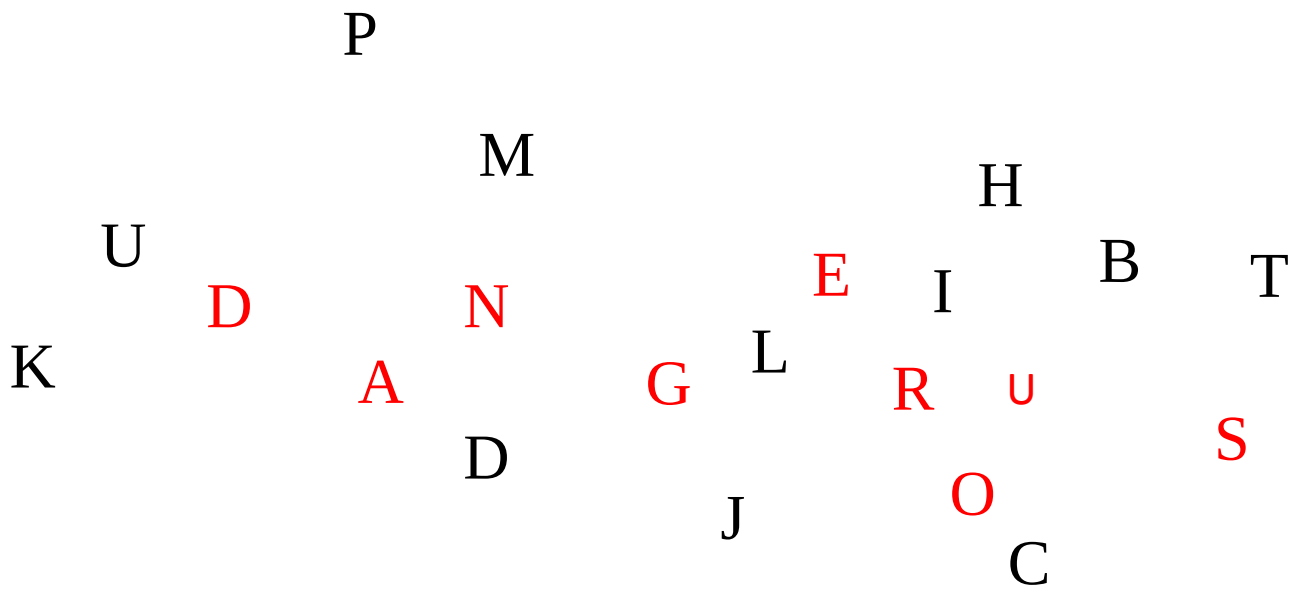
When we started



In retrospect



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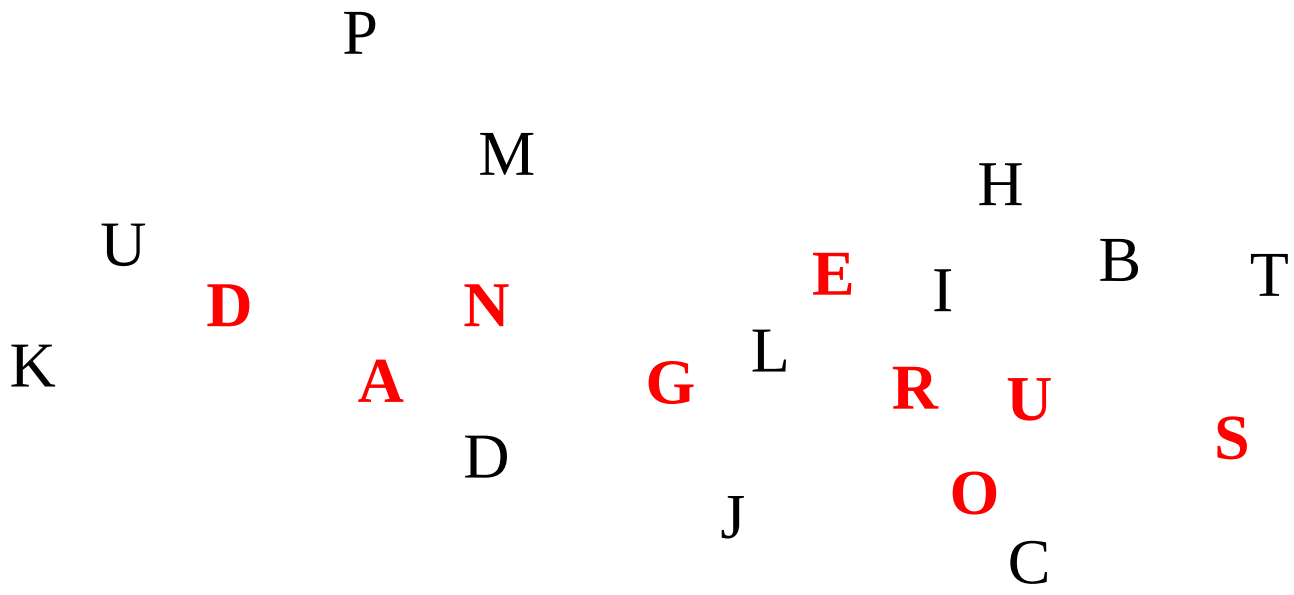

The glasses investigator using

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