

# “Teamwork in hospitals”: A quasi-experimental study protocol applying a Human Factors approach

<b>Submission date</b> 23/05/2017	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 30/05/2017	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 15/06/2023	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Effective teamwork and communication are critical parts to ensuring patient safety in today's healthcare services. Team training is important for an improved efficiency in inter-professional teamwork within hospitals; however there is a need for more research using different health care settings, countries and using different people and professionals. This study uses two parts in order to address its aim of translating and validating teamwork questionnaires and investigating healthcare personnel's perception of teamwork in hospitals (Part 1) and to exploring the impact of an inter-professional teamwork intervention in a surgical ward on structure, process and outcome (Part 2).

### Who can participate?

Health care professionals aged 18 and older and patients aged 18 and older who are able to understand Norwegian.

### What does the study involve?

This study has two parts. The first part of this study takes place in hospitals labelled A and B and asks health care workers to answer a questionnaire about team work and their perception of it in hospitals. The responses from this questionnaire are used to direct the second part of the study. In the second part of the study, participating healthcare workers from Hospital C take part in an inter-professional teamwork programme that includes one day of team training. Participants are given an electronic survey to answer questions about team work before the programme, and six and 12 months after the programme. The same survey is given to two surgical control wards at Hospital D and E that did not receive the programme in order to compare the results. Participants from Hospital C also undergo focus group interviews done before the teamwork programme and six and 12 months after. Patients from hospital C also can take part in a paper survey about quality before the health care workers teamwork programme and six and 12 months after or have their data from their medical records recorded from before and during the programme.

What are the possible benefits and risks of participating?  
There are no benefits or risks with participating.

Where is the study run from?  
This study is being run from the Norwegian University of Science and Technology (Norway) and takes place in 5 hospitals in Norway.

When is the study starting and how long is it expected to run for?  
January 2015 to December 2021

Who is funding the study?  
1. Norwegian University of Science and Technology, Gjøvik (Norway)  
2. University of Stavanger (Norway)

Who is the main contact?  
1. Dr Randi Ballangrud PhD (Public)  
randi.ballangrud@ntnu.no  
2. Professor Marie Louise Hall-Lod (Scientific)

## Contact information

**Type(s)**  
Public

**Contact name**  
Dr Randi Ballangrud

**ORCID ID**  
<https://orcid.org/0000-0003-0403-0509>

**Contact details**  
Norwegian University of Science and Technology,  
Gjøvik  
P.O. Box 191  
Gjøvik  
Norway  
2802  
+47 611 35323  
randi.ballangrud@ntnu.no

**Type(s)**  
Scientific

**Contact name**  
Prof Marie Louise Hall-Lod

**ORCID ID**  
<https://orcid.org/0000-0003-3385-3731>

**Contact details**

Norwegian University of Science and Technology, P.O. Box 191  
Gjøvik  
Norway  
2802

## **Additional identifiers**

### **Protocol serial number**

15/0018 Norwegian Nurses Organization

## **Study information**

### **Scientific Title**

The impact of an teamwork intervention on healthcare professionals and patients in a surgical ward

### **Study objectives**

The overall aim of the project is to translate and validate teamwork questionnaires and investigate healthcare personnel's perception of teamwork in hospitals, and to explore the impact of an inter-professional teamwork intervention in a surgical ward on structure, process and outcome.

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

Norwegian Centre for Research Data:  
Part 1, sub-studies 1 and 2: 09/06/2015, ref: 43295,  
Part 2, sub-study 3: 12/01/2016, ref: 46323  
Part 2, sub-study 4: 04/02/2016, ref: 46872,  
Part 2, sub-study 5: 18/03/2016, ref: 47853,  
Part 2, sub-study 6: 15/06/2016, ref: 47878

Regional committees for medical and Health Research Ethics in East Norway:  
Part 2, sub-studies 4-6: 15/03/2016, ref: 2016/78

### **Study design**

Part 1 (Study 1 and 2):  
Descriptive design (cross-sectional design)  
Part 2 (Study 3-6):  
Quasi-experimental interventional design

### **Primary study design**

Intentional

### **Study type(s)**

Other

### **Health condition(s) or problem(s) studied**

Healthcare professionals perception and attitude of teamwork and patients perception of quality of care

## **Interventions**

The study comprises of two parts and includes different sub-studies for assessment.

### **Part 1:**

The aim of the first party of the study is to translate and validate teamwork questionnaires for a Norwegian hospital setting and investigate healthcare personnel's perception of teamwork in hospitals and includes sub study one and sub study two. This takes place in Hospitals labelled A and B. Participants are invited to respond to three (T-TPQ, T-TAQ and CSACD) Norwegian translated teamwork questionnaires and then the psychometric tested questionnaires are planned used as outcome measures in Part 2 of the study.

### **Part 2:**

The aim of this part of the study is to explore the impact of an inter-professional teamwork intervention in a surgical ward and includes different sub studies labelled sub study three, four, five and six. Hospital C takes part in sub-studies three, four, five and six. Hospital D and E act as controls and each contributes one surgical control ward each without any teamwork interventions and take part in sub study three.

The inter-professional teamwork intervention in a surgical ward at Hospital C is planned according to the TeamSTEPPS-recommended "Model of Change", and is organized into three phases. Phase one which includes setting the stage and deciding what to do, phase two which includes making it happen through training and implementation and phase three which includes making it stick, using monitoring, integrating, and providing coaching for the initiatives to be sustained over time.

One day of team training consisting of four hours classroom training (lectures, videos, role-plays and discussions) and two hours of high-fidelity simulation for all healthcare personnel in the surgical intervention ward is conducted. To ensure the quality of the educational programme, the classroom training and simulation training is piloted. The one day of team training is carried out by four trainers (nurses and physicians) from the intervention ward in collaboration with members of the research group. A strategy for further implementation of the teamwork system into clinical practice is conducted by an inter-professional change team with members from the surgical intervention ward.

Participants are assessed based on which sub-study their hospital takes part in.

**Sub-study three:** An electronic survey with four teamwork questionnaire (Teamwork Perceptions Questionnaire (T-TPQ), Teamwork Attitude Questionnaire (T-TAQ), Collaboration and Satisfaction About Care Decisions (CSACD) and Hospital Survey on Patient Safety Culture (HSOPSC)) is administered to all healthcare personnel at three occasions (before the intervention, and after six and 12 months at both the intervention ward and the control wards.

**Sub-study four:** Focus group interviews with healthcare personnel at the intervention ward is conducted on three occasions (before the intervention, and after six and 12 months).

**Sub-study five:** A survey with paper version of the questionnaire Quality from Patient's Perspective is administered to patients at the intervention ward on three occasions (before the intervention and after six and 12 months).

Sub-study six: Anonymous patient data from local registers and from medical records (by use of Global Trigger Tool) are released from the intervention ward before and during the intervention period.

### **Intervention Type**

Behavioural

### **Primary outcome(s)**

1. Healthcare personnel perception of team work and team decision making and attitude towards teamwork is measured using the Teamwork Perceptions Questionnaire, Teamwork Attitude Questionnaire, Collaboration and Satisfaction About Care Decisions questionnaire and Hospital Survey on Patient Safety Culture at baseline and after six and 12 months.
2. Patients perception and quality of care is measured using Quality from Patient's Perspective at baseline and after six and 12 months at the end of the intervention.

### **Key secondary outcome(s)**

Patients register data is measured using medical records and local registers during the intervention period.

### **Completion date**

31/12/2021

## **Eligibility**

### **Key inclusion criteria**

Health professional with permanent employment.

Patients:

1. Aged 18 years or older
2. Able to understand Norwegian
3. In a mental and physical health condition that makes it ethically justifiable to participate

### **Participant type(s)**

Mixed

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Lower age limit**

18 years

### **Sex**

All

### **Total final enrolment**

1097

**Key exclusion criteria**

1. Children and patients that do not understand Norwegian
2. Patients in a mental or physical health condition that not makes it ethically justifiable to participate

**Date of first enrolment**

01/10/2015

**Date of final enrolment**

01/07/2017

**Locations****Countries of recruitment**

Norway

**Study participating centre****Norwegian University of Science and Technology**

Teknologiveien

Gjøvik

Norway

2815

**Study participating centre****University of Stavanger**

P.O. Box 8600 Forus

Stavanger

Norway

4036

**Study participating centre****Innlandet Hospital Trust Division Lillehammer**

Anders Sandvigs gate 17

Lillehammer

Norway

2609

**Study participating centre****Ringerike Hospital**

Vestre Viken Hospital Trust

Arnhold Dybsjordsvei 1

Hønefoss  
Norway  
3511

**Study participating centre**  
**Innlandet Hospital Trust Division Gjøvik**  
Kyrre Grepps gate 11  
Gjøvik  
Norway  
2919

**Study participating centre**  
**Vestfold Hospital Trust, Tønsberg**  
Halfdan Wilhelmsens alle 17  
Tønsberg  
Norway  
3116

**Study participating centre**  
**Hospital of Southern Norway Trust, Kristiansand**  
Egsveien 100  
Kristiansand  
Norway  
4604

## **Sponsor information**

**Organisation**  
Norwegian Nurses Organisation

**ROR**  
<https://ror.org/01822d048>

## **Funder(s)**

**Funder type**  
University/education

## Funder Name

Norwegian University of Science and Technology, Gjøvik

## Funder Name

University of Stavanger

# Results and Publications

## Individual participant data (IPD) sharing plan

The data is not expected to be available because the participants representing healthcare professionals from a small surgical intervention ward. Data will be held at the Norwegian University of Science and Technology's research server.

## IPD sharing plan summary

Not expected to be made available

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	implementation results	14/09/2019	16/09/2019	Yes	No
<a href="#">Results article</a>		08/02/2022	15/06/2023	Yes	No
<a href="#">Results article</a>		03/02/2021	15/06/2023	Yes	No
<a href="#">Results article</a>	Qualitative results	08/07/2020	15/06/2023	Yes	No
<a href="#">Results article</a>	Qualitative results	23/07/2021	15/06/2023	Yes	No
<a href="#">Protocol article</a>	protocol	29/06/2017	16/09/2019	Yes	No