

Mutual respect - an essential relational dimension that is crucial in collaboration in surgical teams

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Presentation

- Background & purpose
- Methods & theoretical framework
- Data, analyses & findings
- Conclusion



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Background

- Interdisciplinary collaboration in surgical teams
 - Increased specialization in the OR (Nembhard & Edmondson 2006, Nawaz et al. 2014, Bogdanovic et al. 2015)
 - Structural changes in team composition (Leach et al. 2009, Sørensen 2011, Valentine & Edmondson 2015)
 - Hierarchy and status differences (Tucker & Edmondson 2003, Nembhard 2006, Leape et al. 2012, Cochran & Elder 2015, Kaldheim & Slettebø 2016)
- Relational coordination in surgical teams (Gittell 2000, 2009; Carmeli & Gittell 2009)

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Purpose

To create new knowledge about how communication and relationships are practiced in interdisciplinary surgical teams in contexts of variable complexity in Denmark, guided by the theory of relational coordination, as well as to offer recommendations on how to best improve the quality of collaboration and safety culture in surgical teams in the future.

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Research Questions

- *What characterize communication and relationships in interdisciplinary surgical teams?*
- *How can relational coordination (RC) theory be used as an intervention process in an OR unit?*
- *Is RC improved through the intervention process?*
- *How can perspectives from these different angles together facilitate improvements in collaboration in surgical teams?*

PHASE
I

PHASE
II

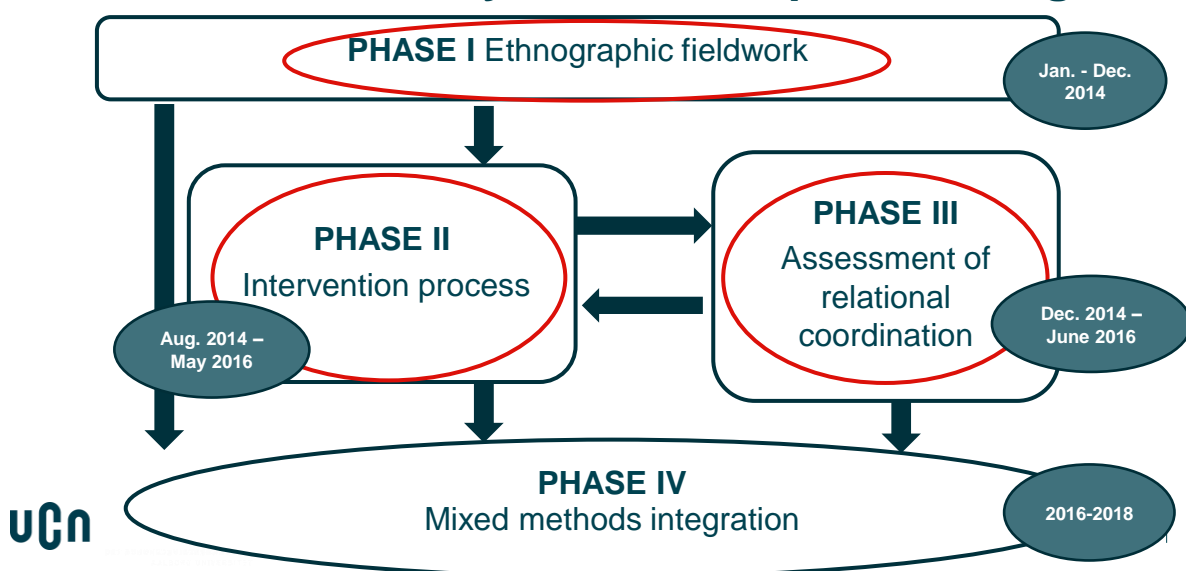
PHASE
III

PHASE
IV

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Mixed Methods Study with a Multiphase Design

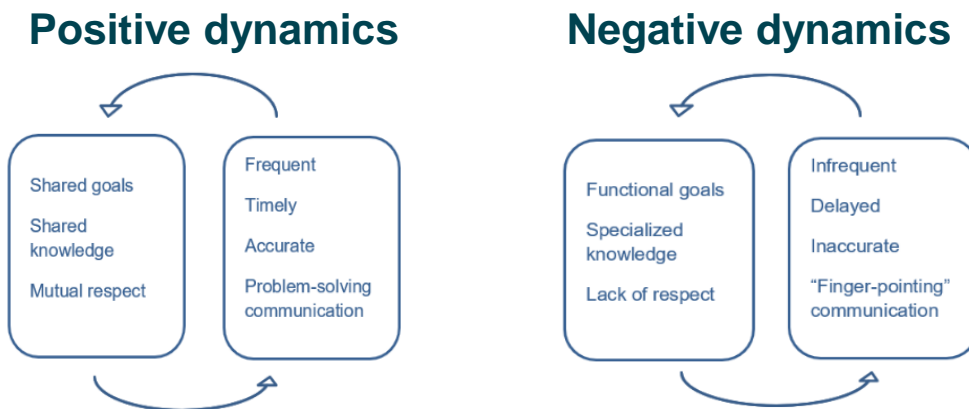


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Theoretical Lens

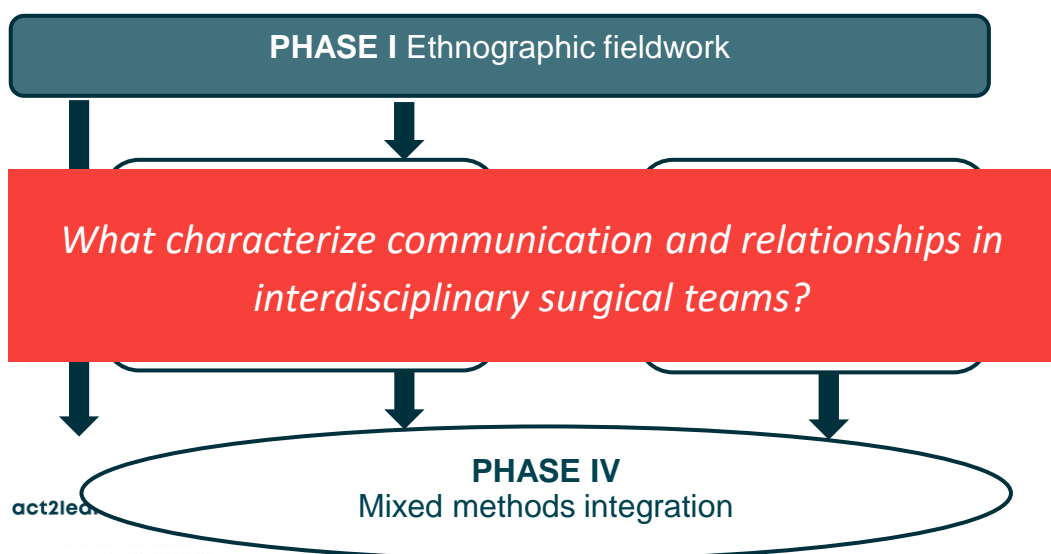
Relational coordination is a mutually reinforcing process of interaction between communication and relationships carried out for the purpose of task integration.



(Jody Hoffer Gittel 2000, 2009)

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PHASE I – Data, Analyses and Findings



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Ethnographic Fieldwork

- **Observations of surgical teams** collaborating around the patient in the OR while performing orthopedic surgery
- **Conversations and individual interviews** with nurses (OR- and anesthesia nurses) and doctors (surgeons and anesthesiologists)
- **Focus group interviews** with nurses (OR- and anesthesia nurses) and doctors (surgeons and anesthesiologists)



Tørring 2018, Tørring et al. 2019, 2020

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Observations & Interviews

Surgical Unit I:

- Period - 5 months
- Observations (110 hours)
- 35 surgical procedures
- 5 individual interviews
- 1 group interview



Surgical Unit II:

- Period - 5 months
- Observations (130 hours)
- 24 surgical procedures
- 8 individual interviews
- 1 group interview

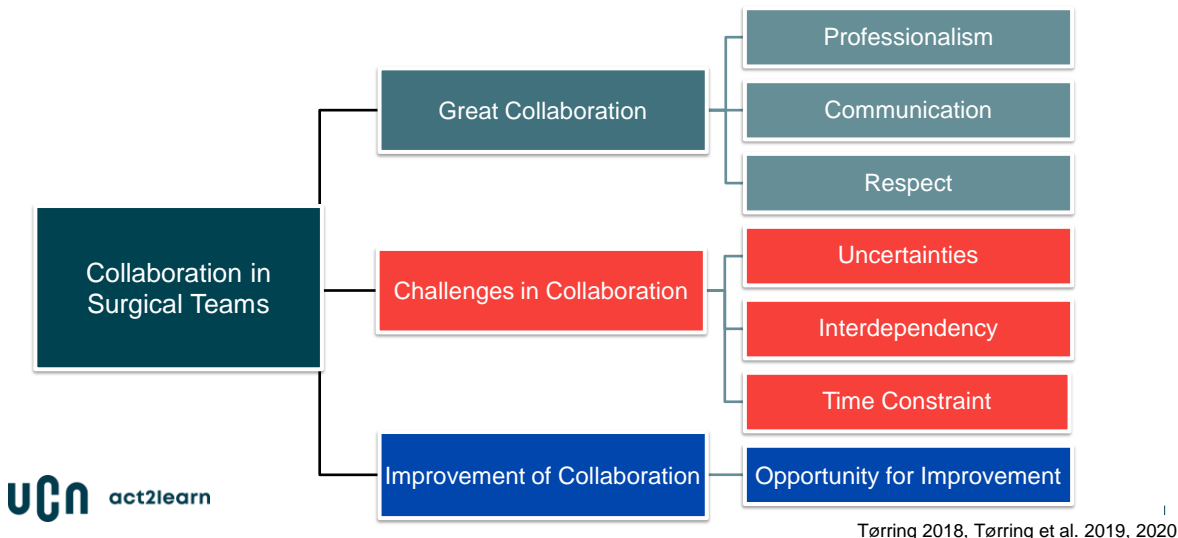


Tørring 2018, Tørring et al. 2019, 2020

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The First Process of Analysis

Content analysis at a simple level (Coffrey & Atkinson 1996)



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Findings from the First Analysis

Professionalism	<ul style="list-style-type: none"> Specialized knowledge, ability to collaborate, situation awareness
Communication	<ul style="list-style-type: none"> Quality of communication a key point for ensuring surgical schedule
Respect	<ul style="list-style-type: none"> Mutual respect is essential
Uncertainties	<ul style="list-style-type: none"> Changes in the surgical schedule, patient's condition, lack of instruments or staff required
Interdependency	<ul style="list-style-type: none"> Depending on each other all times
Time Constraint	<ul style="list-style-type: none"> Time and talking about time in many ways
Opportunity for Improvement	<ul style="list-style-type: none"> Shared responsibility, learning from errors, knowledge about what is important for each other

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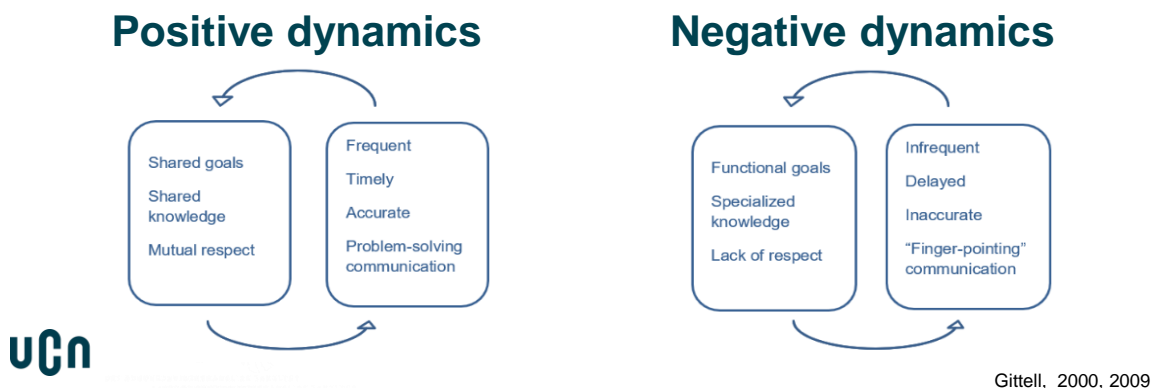
Tørring 2018, Tørring et al. 2019, 2020

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The Second Process of Analysis

Directed content analysis (Hsieh & Shannon 2015, Høyer 2007)

Coding based on **presence** or **absence** of the dimensions of relational coordination (RC) in each of the 39 surgical teams:



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Examples on coding from the same team

Timely Communication (positive dynamic)

The surgeon takes off his gloves, just finishing the surgical procedure. The CN says "Look at these pictures (X-rays) – it is from the next patient! What did we agree about? What are we going to do?" They talk about which type of hip replacement materials they are going to use for the next patient. They walk to the closet and look at the different types, boxes, and materials. And they make a choice and decide together. [Team 12]

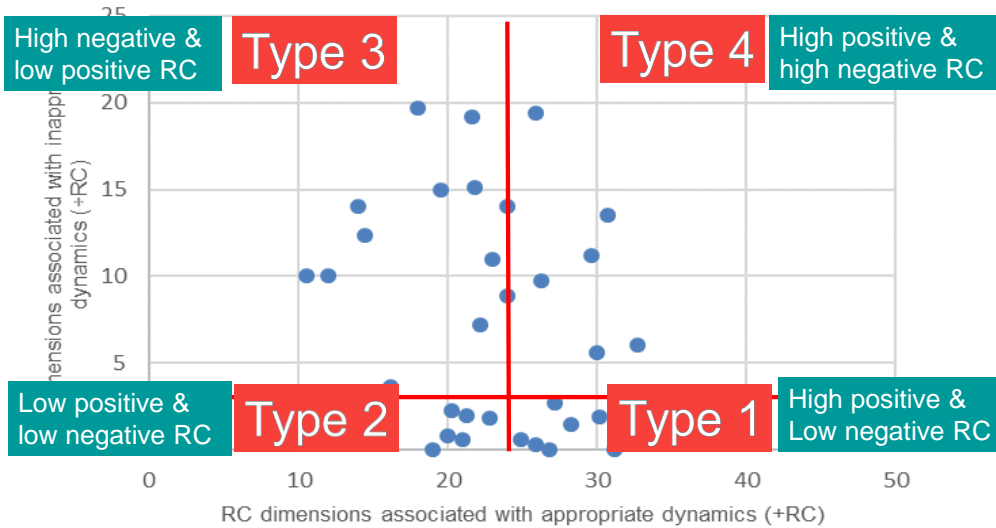
Delayed Communication (negative dynamic)

The circulating nurse says to the surgeon "Could we talk about the next patient? She is going to have a cementless hip replacement. Do we have what is needed for that surgical procedure?" The surgeon answers "I haven't seen the patient, I must do that first!" The circulating nurse says "I am nearly losing my overview, we have so many things going on today!" [Team 12]

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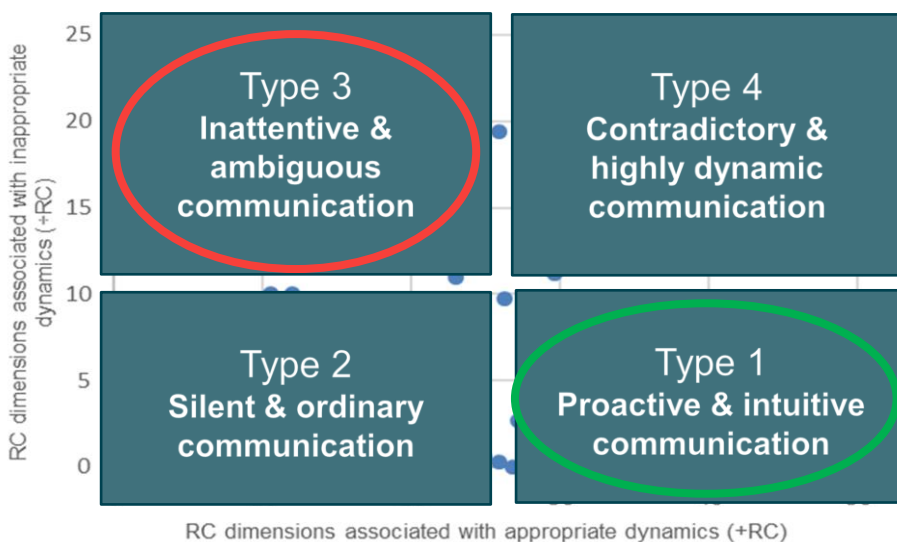
Findings from Analysis II



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Different Characteristics



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Type 1: High positive & low negative

Proactive and intuitive communication

- Making decisions and finding solutions easily
- Mutual respect for professional & interpersonal skills
- Accuracy in communication
- Attention to the surgeon's preferences and skills
- Responsibility for the learning environment
- Focusing on "the flow" in the OR
- Talking about the social life in the unit



Tørring 2018, Tørring et al. 2019, 2020

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Fieldnote - Type 1



Surgical nurse (SN) and **circulating nurse (CN)** are preparing for surgical procedures. **SN** asked **CN** for advice about the materials and the preparation.

CN answers: "We will wait to unpack the materials, until we know what the surgeon wants to have."

SN says: "I don't know, which instruments and materials I have to unpack, but I am calm. Because X (first name of the surgeon) can manage and he is so nice and very helpful to guide and teach during surgical procedures. He never gets annoyed or mad if you don't know."

CN comments: "Yes, it is going to be very fine, and it is also very exciting to wait and see, what we are going to use! And yes, he is excellent."

[Team 26]



Tørring 2018, Tørring et al. 2019, 2020

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Type 2: Low positive & low negative

Silent and ordinary communication

- Rarely a need for technical discussions
- Sometimes unfocused on the task
- Focusing on "the flow" in the OR
- Smalltalk during the surgeries



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Type 3: Low positive & high negative

Inattentive and ambiguous communication

- Communication sometimes inaccurate and disrespectful
- Insecure atmosphere emerged from irony or sarcasm
- Pointing to the lack of skills among team members
- Short and incomplete safe communication
- Highlighting oneself – putting themselves at the center



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Feltnote – Type 3

An **inexperienced OR nurse** and an **experienced surgeon** worked together for one hour. The tone between them was often ambiguous and the dynamic very tense.

Halfway during the surgical procedure, **the surgeon** exclaims loudly: *"This is a mess!"* He points at the table with instruments and continued: *"The conclusion of the surgery today must be: It is fantastic that the surgeon finished at all!"*

The tense atmosphere went on.

[Team 28]



Tørring 2018, Tørring et al. 2019, 2020

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Type 4: High positive & high negative Contradictory and highly dynamic communication

- Communication fluctuates between:
 - Respectful, accurate, and problem-solving
 - Sharp, sarcastic, and inaccurate answers
- Short and incomplete *safe communication*
- Disagreements are discussed
- Shared goals & actions are clarified
- Smart and quick comments and replies



Tørring 2018, Tørring et al. 2019, 2020

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Feltnote – Type 4

“In reality, it depends on individuals; and one can also notice that there are some surgeons and some OR nurses that doesn’t fit together! Then the surgeon is right up in the red zone already before we start! In these situations, I am aware not to do anything wrong; because I know that the operating room will explode.” [OR 33]

Conclusion PHASE I

- Communication and relationships in a context characterized by uncertainties, interdependency, and time constraint
- Interdisciplinary collaboration might be improved by relational, structural, and work process interventions
- Different communication and relationships patterns were identified in surgical teams at the microlevel
- Interdisciplinary collaboration when it succeeded and when it was not successfully achieved

PHASE I presented in:

Tørring et al. *BMC Health Services Research* (2019) 19:528
<https://doi.org/10.1186/s12913-019-4362-0>

BMC Health Services

RESEARCH ARTICLE

Open

Communication and relationship dynamics in surgical teams in the operating room: an ethnographic study

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Reflections?

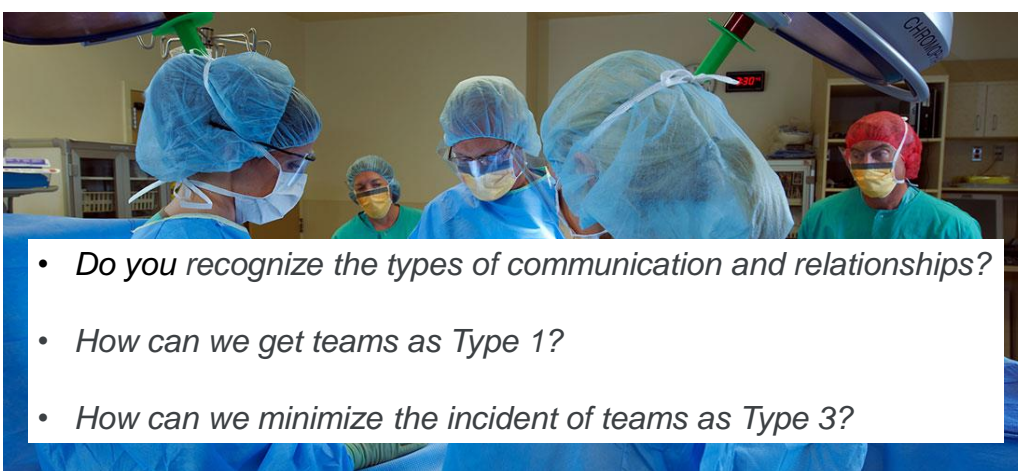
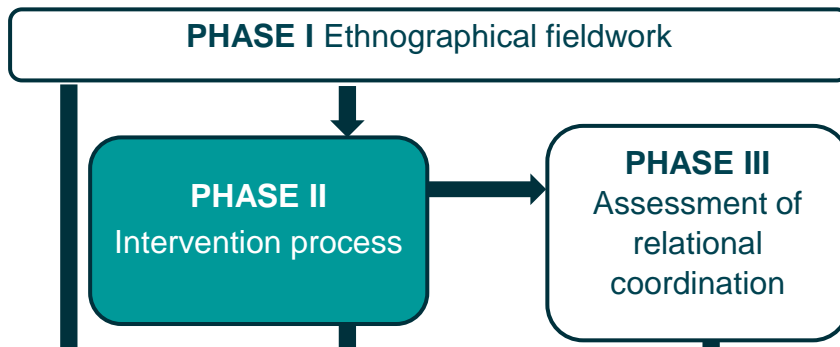


Foto: AORN <https://www.aorn.org/blog/surgical-team-communication>

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PHASE II – Data, Analysis and Findings



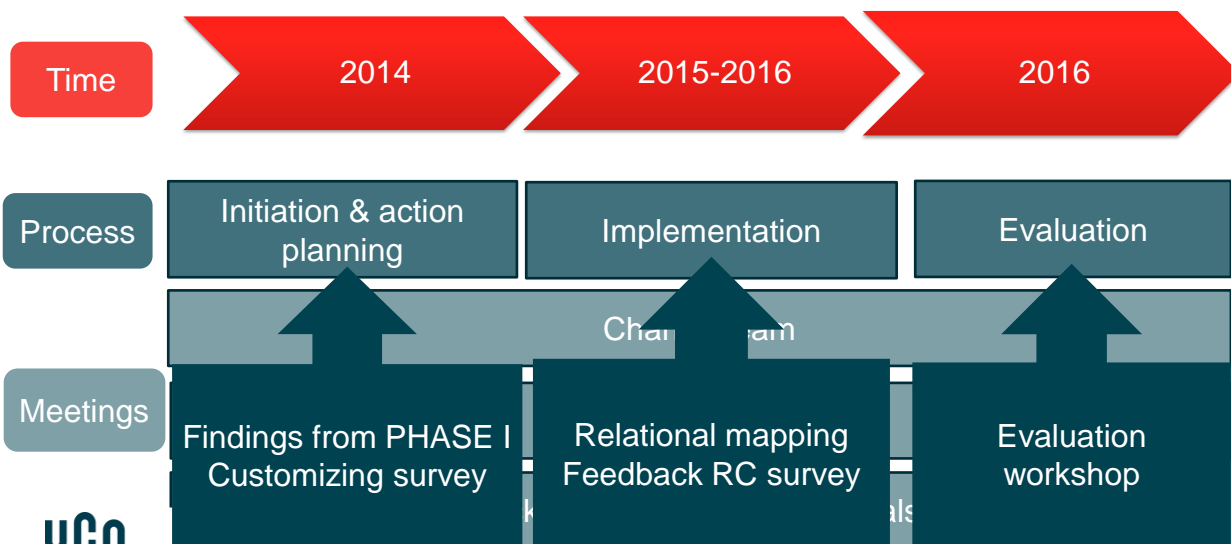
How can RC theory be used as a tool in an intervention process in an OR unit?



Tørring 2018

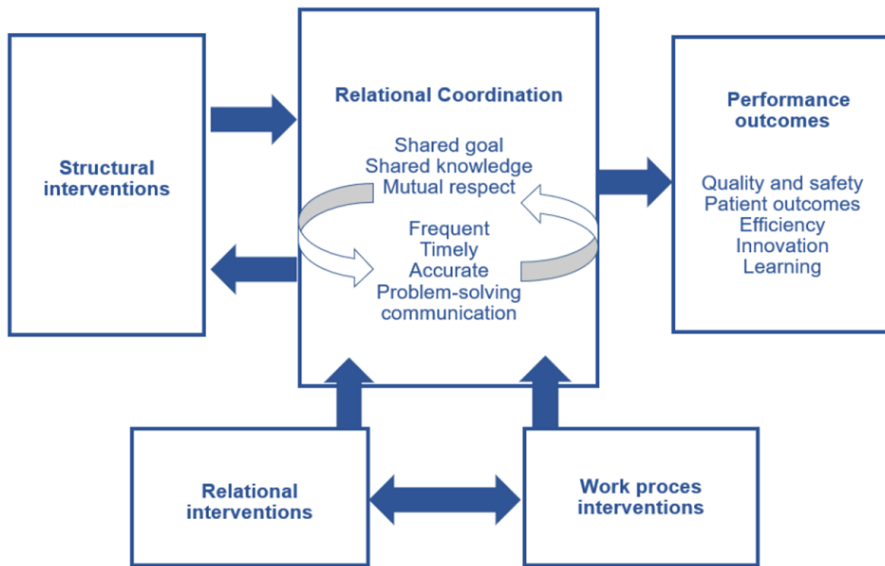
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PHASE II - Monitoring & Evaluation



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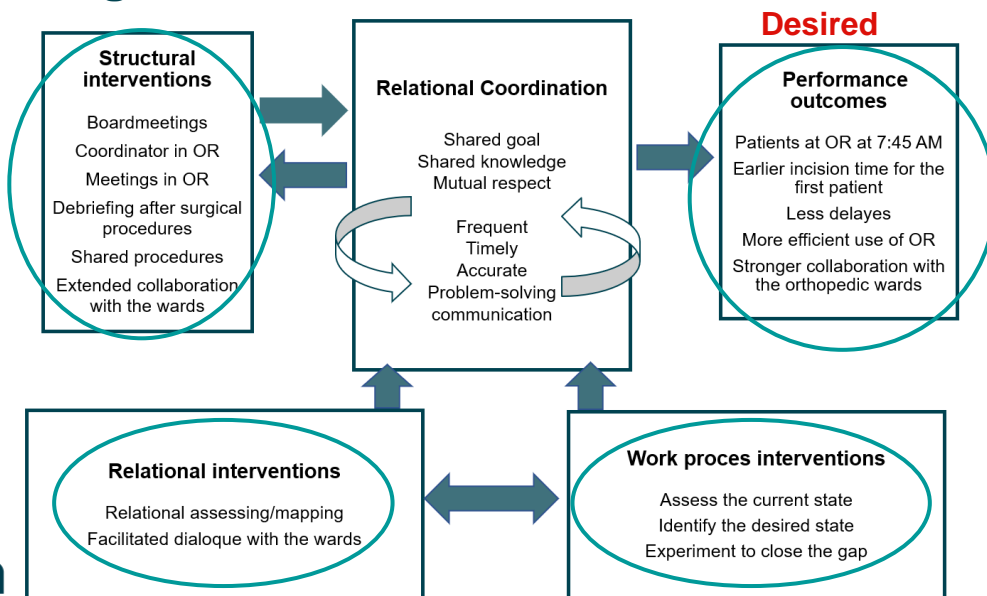
The Relational Model for Organizational Change



Gittell, Edmondson, Schein 2011, Gittell 2016

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Planning First Part

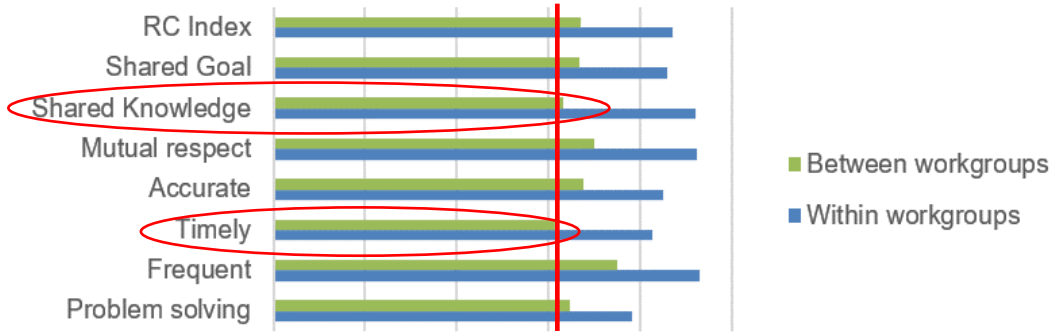


Inspired by Gittell, Edmondson, Schein 2011, Gittell 2016

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Planning Next Part

RC measures (baseline):



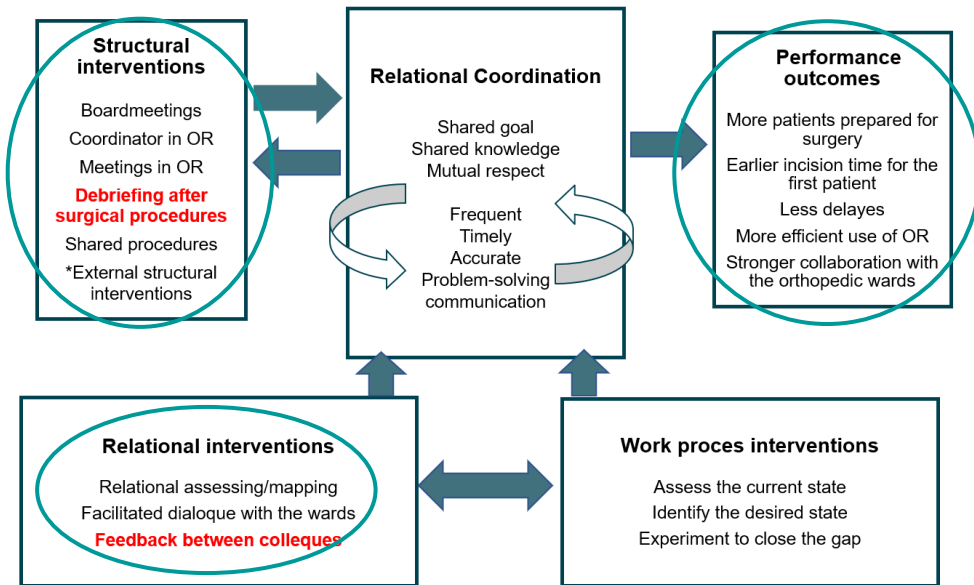
Interventions added to improve *Timeliness & Shared knowledge*

- * Coordinating nurse visible at the board all day
- * Surgical team meetings in OR at 7:30 - 8:00 AM
- * Qualification of surgical prescriptions



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Evaluation of Intervention

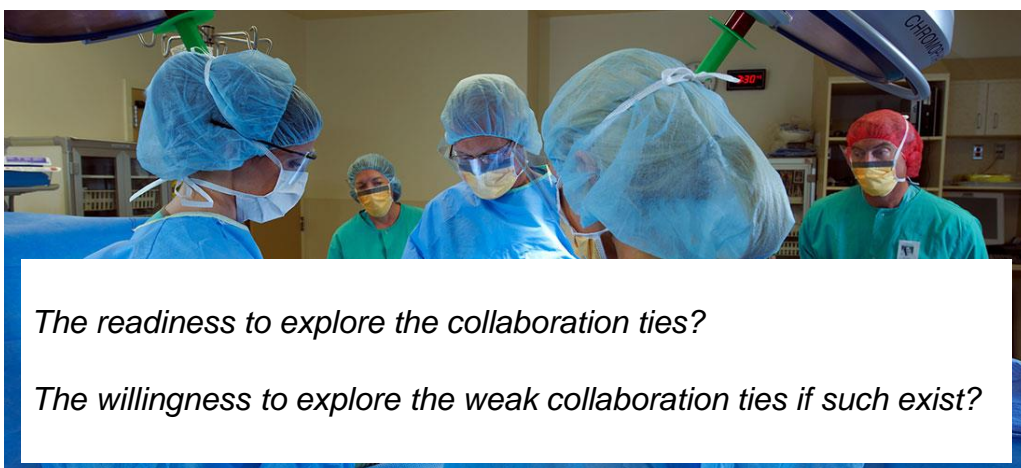


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Conclusion PHASE II

- The *Relational Model of Organizational Change* – a useful tool
 - Engagement in the process (time and "being ready")
 - Setting the change team
 - Incorporate RC methodology and measurement early
 - Setting outcome goals
- Evaluation of organizational intervention
 - Systematic monitoring of the process
 - Sharpening attention on external changes or parallel interventions

Ready to explore relationships in OR?

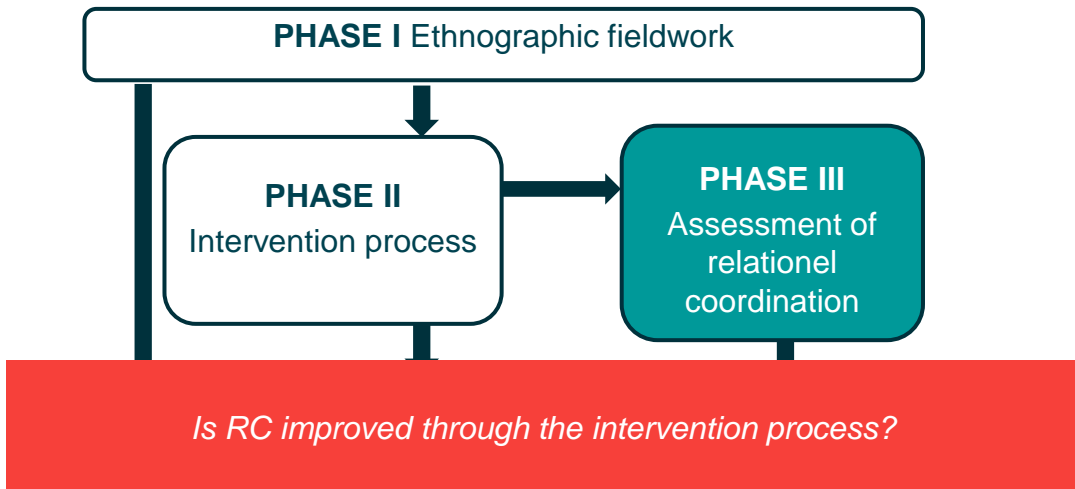


The readiness to explore the collaboration ties?

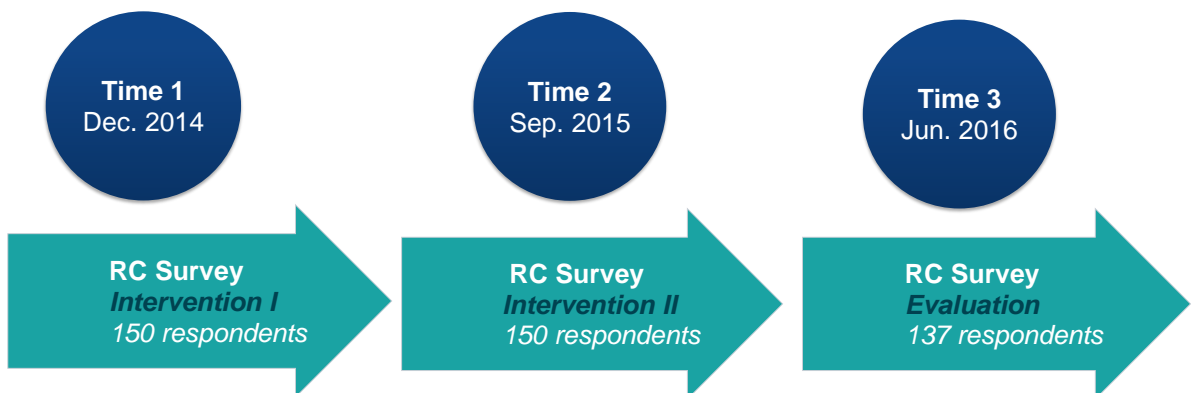
The willingness to explore the weak collaboration ties if such exist?

Foto: AORN <https://www.aorn.org/blog/surgical-team-communication>

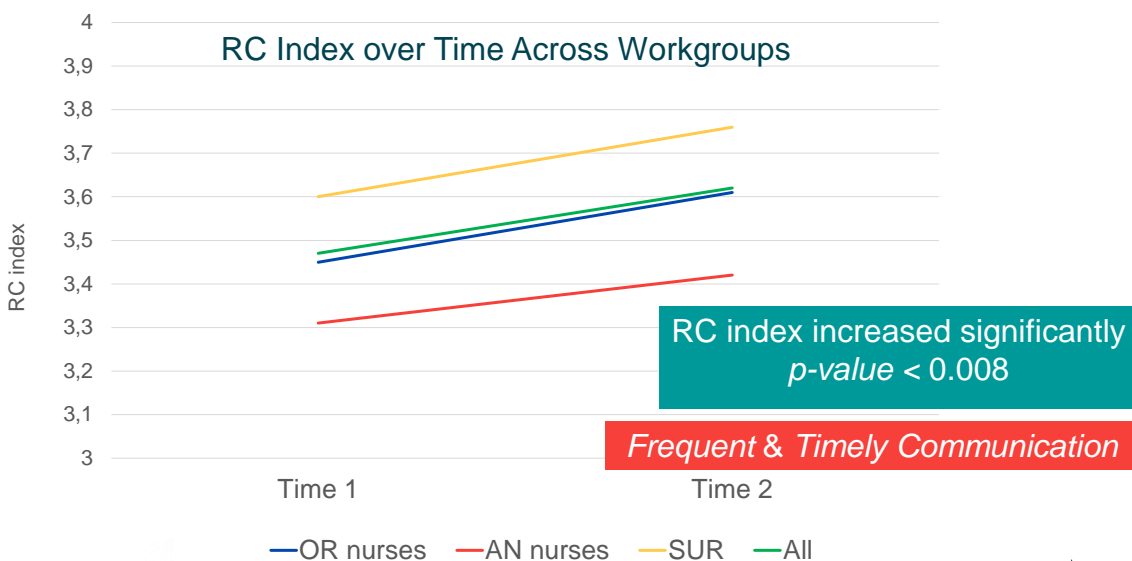
PHASE III – Data, Analysis and Findings



Assessment of RC



Change in Relational Coordination over Time

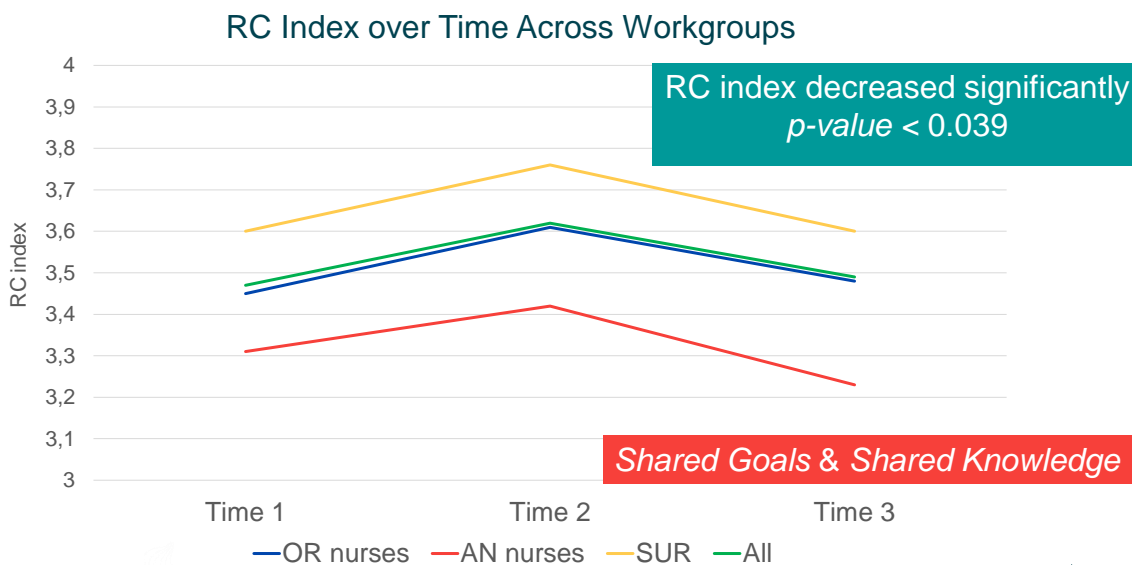


Tørring 2018



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Change in Relational Coordination Over Time

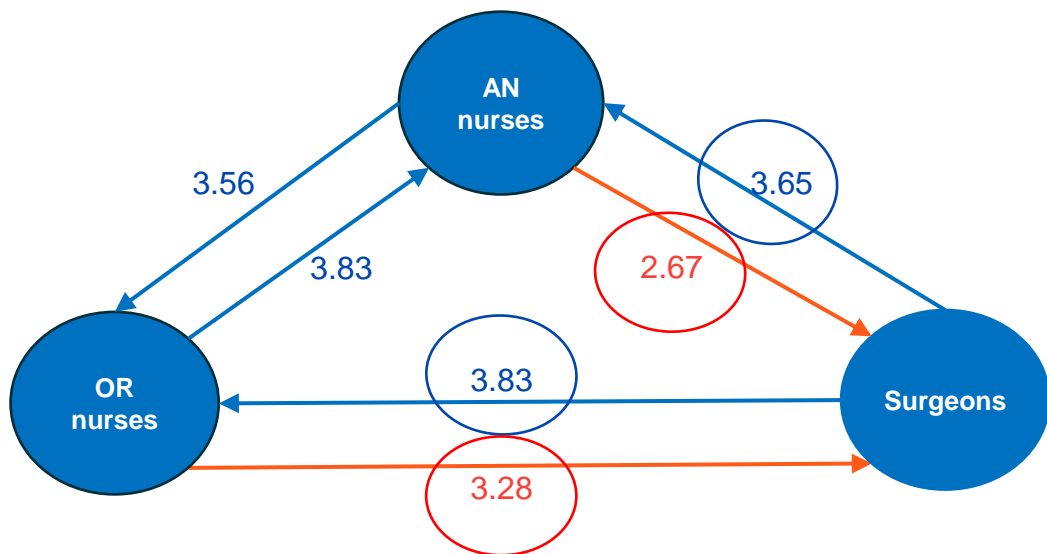


Tørring 2018



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Non-Reciprocal Collaboration Ties



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Conclusion PHASE III

- RC index increased when measured 8 months after – and at the same level measured 16 months after
- RC within workgroups significantly higher than RC between workgroups
- RC within clinical specialties significantly higher than RC between clinical specialties
- Non-reciprocal collaboration ties between workgroups and between clinical specialties at all time

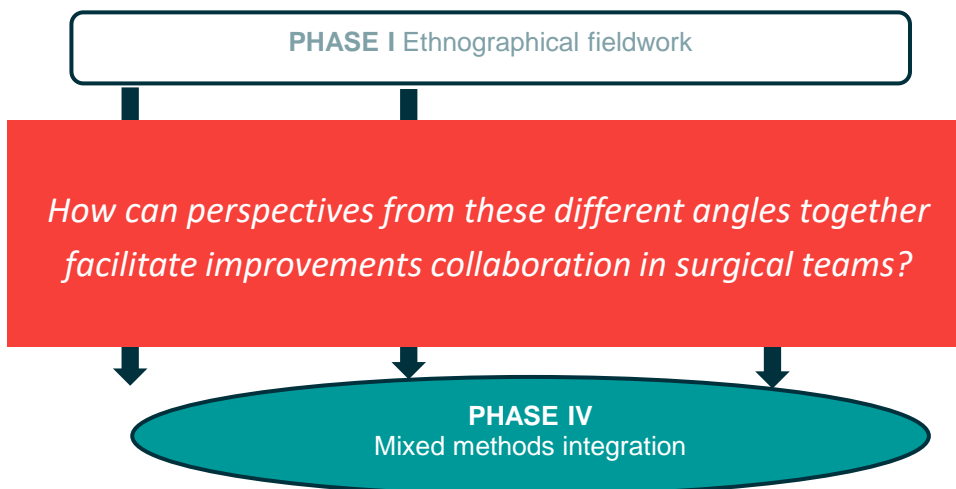


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PHASE IV– Data, Analysis and Findings



PHASE IV Findings

Relational Coordination

Qualitative

The change team experienced communication and relationships between nurses in the OR and nurses in the orthopedic wards to be improved, and interdisciplinary collaboration in the OR to be improved:
"The atmosphere is calmer in the OR hallway and in the OR now, which is often expressed positively by doctors and nurses".

Quantitative

Time	OR nurses	AN nurses	SUR	All
Time 1	3.5	3.4	3.3	3.4
Time 2	3.7	3.5	3.4	3.5
Time 3	3.6	3.4	3.3	3.4

From	To	Value
OR nurse	AN nurse	3.36
AN nurse	SUR	2.67
SUR	OR nurse	3.28
OR nurse	SUR	3.83
AN nurse	OR nurse	3.83
SUR	AN nurse	2.85

Outcomes

Hip Arthroplasty Increases from 2014 - 2016

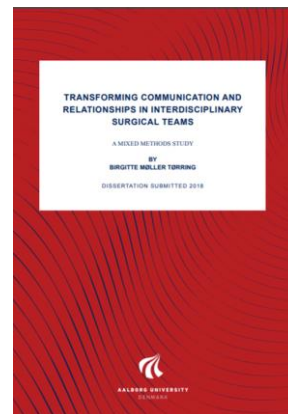
Primary	Revision
28.8 %	34.1 %

"Operation Delay" for Patient with Femoral Neck Fracture

Dec. 2014 - Nov. 2015		Dec. 2015 - Nov. 2016	
24 hours	36 hours	24 hours	36 hours
47%	71%	57%	81%

PHASE IV - Recommendations

- Constitute change team - different levels & professions
- Use relational coordination theory & methodology
- Implement intervention that address what is needed
- Define outcome goals & use improvement methodology
- Pay attention to communication & relationships pattern between workgroups at the microlevel
- Prioritize relational interventions
- Constitute OR teams in a way so familiarity will increase



Tørring, B (2018) Transforming communication and relationships in interdisciplinary surgical teams: a mixed methods study. [dissertation]. Aalborg: Aalborg University

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Conclusion

- Different communication and relationships patterns in surgical teams
- Role-based as well as interpersonal relationships
- *The Relational Model of Organizational Change* – a tool for prioritizing interventions targeted what is needed
- RC improved 8 months after and remained at the same level 16 months after
- Non-reciprocal collaboration ties between workgroups
- Recommendation for shaping change aimed at improving interdisciplinary collaboration



Tørring, B (2018) Transforming communication and relationships in interdisciplinary surgical teams: a mixed methods study. [dissertation]. Aalborg: Aalborg University https://vbn.aau.dk/files/291717744/PHD_Birgitte_Toerring_E_pdf.pdf

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Contribution & Implications

- **Theoretical contribution to RC theory**
 - Communication and relationships dynamic in surgical teams at the micro level
 - Relationships not only being role-based but also interpersonal
 - Change in RC dynamic during organizational changes
 - RC across clinical specialties
- **Implications for practice**
 - The typology of communication and relationships in surgical teams offer guidance for improvement
 - Relational mapping – a dialogue-facilitating tool for improvement of relationships in OR
 - Attention might be given to non-reciprocal relationship ties in surgical teams



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