MPM - Master of Project Management

How far can simulation be used to improve inter-team dynamics between emergency teams?

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How far can simulation be used to improve inter-team dynamics between emergency teams?

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ABSTRACT

Due to a small population in Iceland first responder teams in different areas must often work together in challenging and hazardous situations. Therefore, responders must know and trust each other’s abilities and strengths. Various responders have different: leadership, culture, structure and more due to being full-time professionals, part-time professionals or volunteers. Different responder teams must make an effort to gain insight to the other teams, and therefore the teams must practice working together. Real-life simulations and another kind of learning methods are a good way for teams to learn how other teams operate and communicate. To investigate this the research question “How far can simulation be used to improve inter-team dynamics between emergency teams in Iceland?”

To inquire into this first, there was held a large car crash simulation with over 200 responders from 7 different responder teams. A questionnaire was handed out which responders answered and returned the simulation. Secondly, to widen the perspective eight leaders from various responder teams were interviewed. Much data was collected through these interviews which gave a good insight on how the situation is today and how it has improved through the years.

Research shows that simulations and other learning methods are valuable and useful to improve relations between responder teams. It also showed that other things like culture, structure, procurement amongst other things would also have to be looked at and should be investigated further.

Keywords: Emergency teams, first responders, inter-team dynamics, group dynamics, intrinsic motivation.
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INTRODUCTION

During the time period that I have been a firefighter and worked with other first responders, I’ve experienced major changes in relations within and between teams. As I am very passionate about my job as a firefighter, I am concerned about the relationships between individuals within my team and with relations to other responders. A course in group dynamics in the MPM program triggered the thought that I could investigate this more carefully, and I might be able to influence the context to improve relations to an even better state.

A crisis situation, were multiple responder teams have to work together can be challenging. These challenges can be caused by various factors, including differences in the organizational structure of the different teams or groups that are working in the situation. Mapping these difficulties is important so that the situation can be resolved smoothly and the victims will be saved in a rapid and fruitful way. To map these issues responders, need to practice using their methods each of them is expected and required to know. I this paper the expectations are that all responders know their equipment, know how to use it and how to react when the call comes. The only way for them to gain this experience is by exercising their knowledge. This can be done in different ways, by small or big scale exercises or simulations, tabletop exercises amongst other methods.

The aim of this research is to explore which challenges and opportunities responder teams need to improve their cooperation with other teams. Such teams, as stated above possess excellent individual skills, but their ability to interact and communication with those outside their teams might not be as refined a part of their skillset.

In fact, divisions between teams is a very common thing, as teams tend to look towards their own team and only secondarily toward others, with a form of us vs. them mentality. Individuals tend to think that their team is better than the others and do not want to listen to what other teams have to say. It can be hard to get people out of such thinking, but it can be done with education. To bring cross-team thinking and acting into teams, education and practice are needed. Simulations are seen as very important for first responders to enhance these cross-team abilities.

To gain deeper insight into this subject, research was conducted during a rescue simulation with seven different teams working together in a crisis situation. For this paper, to deepen further perspectives on this issue, interviews with eight key persons within the first responder services were conducted. All interviewees have a leading role in their area, and have a great deal of experience both as leaders and working as first responders. Each of the teams represented has a different organizational structure with some taking part as full professionals, some as part-time professionals, and some as volunteers.
The primary focus of this paper is to examine how to improve the ways in which different teams from different first responders work together in a crisis situation. The purpose of this paper is not to find a ‘final answer’ in any sense but to identify where there are areas to improve. The paper also allows the services involved to gain an understanding of how the situation is today, what has been done historically, producing a form of ‘as is’ analysis as well as a ‘to be’ set of recommendations.

The specific research question is:

How useful are simulations to improve inter-team performance between first responders in Iceland during a crisis?

Additionally, the motivational context as to why people become first responders, why people give their effort to help others, is reviewed. Not everyone can do this form of crisis situation work, which is often demanding and hazardous. Responders can often find themselves in dangerous situations that place huge demands on the capability of people to people their tasks. The paper is dedicated to the commitment and courage of those involved in first responder services.

1. LITERATURE REVIEW

In the following chapters, the focus is on examining the challenges in inter-team dynamics of first responders in an emergency context, and on understanding how leaders from different teams can utilize simulations and / or different exercises to get better cohesion within and performance from all teams involved.

Initially, the difference between groups and teams will be examined, alongside a clear understanding of features of ‘team’ to clarify the nature of ‘team’ itself before moving to clarify the nature of inter-team dynamics. Furthermore, the utility of simulations for training of inter-team skills will be investigated.

Groups

Groups can be designated as collections of individuals who have some form of contact and interactions, sometimes with common objectives. In his book, Group Dynamics, Donelson R. Forsyth analyses groups across five features: interactions, goals, interdependence, structure, and cohesion (Forsyth, 2016, p.11). Groups of first responders should be able to adapt to all five characteristics as the complexity of the groups is very high.

Forsyth identifies four types of a group as primary, social, collective and category (Forsyth, 2016, p.14). He mentions more types of groups, but the most relevant one for this case is the primary group, which become very close as they must know each other’s abilities very well, as first responders. Social groups are also a type first responders belong within as there are many co-workers within first responder groups. Collective and category groups may also be taken into account but will not be discussed further here.
What is a team

Teams can be defined as an organized group within an organization to get specific things done, and are put together with individuals with a particular skillset. Teams possess the basic qualities of groups but to a more extreme degree. For example, specialized groups such as rescue teams, operating theater team, and musical bands often display excellent coordination and cooperation (Jónasson og Ingason, 2012).

A team’s performance depends, in part on its member’s knowledge, skills, and abilities, or KSAs. Those KSAs are generally of two types: task relevant proficiencies and interpersonal skills (Forsyth, 2016 p.411).

Relevant differences between groups and teams

People participate in some different forms of groups and teams on a regular basis. Individuals participate in work teams, and in personal life participate in sports or clubs. Norman Shidle describes how a group becomes a team: “A group becomes a team when each member is sure enough of himself and his contribution to praise the skills of the others.” (Irving, 2017). There is at time and place for both groups and teams. Groups can be more helpful and get things done in a context of a temporary working relationship. Teams can be more useful in bigger cases and when the outcome requires coordinated work being brought together to advance collective goals (Forsyth, 2014).

Table 1 Contrasting Groups and Teams (Irving, 2014)

<table>
<thead>
<tr>
<th>Groups</th>
<th>Teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Work</td>
<td>Coordinated Work</td>
</tr>
<tr>
<td>Individual Goals</td>
<td>Collective Goals</td>
</tr>
<tr>
<td>Individual Accountability</td>
<td>Mutual Accountability</td>
</tr>
<tr>
<td>Individual Evaluation</td>
<td>Collective Evaluation</td>
</tr>
</tbody>
</table>

First responders will always be part of both groups and teams. However, any single or collaborative teamwork will require more effort to perform to an optimum.

Inter-team dynamics

When two or more teams encounter each other, in addition to cooperation, disputes can also arise due to competition, differences of opinion or more fundamental aspects such as tribalism. To prevent these conflicts, there must be established close cooperation at the positive contact between teams. Getting individuals to cooperate with their outgroup means that us vs. them thinking fades away, along with ingroup favoritism. (Forsyth, 2014)

When two or more groups must work together, is important for the teams to have an open mind towards the other teams. This has not always been the case in Iceland but has been getting better through the years. The following elements are seen as necessary to keep in mind when creating positive inter-team relations:
Table 2 The Necessary Conditions for Creating Positive Contact (Forsyth, 2014)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal status</td>
<td>The members of the teams should be equal regarding background, qualities,</td>
</tr>
<tr>
<td></td>
<td>and characteristics that influence prestige and rank in the situation.</td>
</tr>
<tr>
<td>Common goals</td>
<td>The case should involve a joint task with a common goal that is of equal</td>
</tr>
<tr>
<td></td>
<td>interest to both groups.</td>
</tr>
<tr>
<td>Dependence</td>
<td>The task should require cross-team interaction and high levels of interdependence</td>
</tr>
<tr>
<td>Support of authority</td>
<td>The norm so the situation should encourage positive interactions, and these</td>
</tr>
<tr>
<td></td>
<td>standards must me endorsed explicitly by authorities and by the teams</td>
</tr>
<tr>
<td></td>
<td>themselves.</td>
</tr>
</tbody>
</table>

In first responder team contexts, there are opportunities to fulfill all these conditions. For example, it should be possible for the different teams to look at members of other teams as equals, with shared goals – crisis management – within similar authority structures.

The reason why inter-team dynamics has been getting better the past years is more collaborations between teams. This has been done through joint simulations and exercises of different sizes.

Simulation as a learning methodology.

Simulations and a broad variety of exercises play a vital role in first responder preparedness by enabling individuals to test and validate plans and capability and find areas for improvement. A well-designed simulation provides a low-risk mechanism to check and familiarize personnel with roles and responsibilities, and foster meaningful interaction and communication across different responder teams. Overall, simulations can be highly cost-effective which help the responders to practice and refine their collective capacity to achieve core capabilities (HSEEP, 2013).

Homeland Security Exercise and Evaluation Program (HSEEP) in the USA has an Exercise Methodology that uses a standard method for planning and conducting individual exercises. This method applies to simulations of all sizes, tabletop exercises, walk through plans and more. The program is divided into four categories as the exercise cycle shows below.

![Homeland Security Exercise and Evaluation Program - Exercise Cycle (HSEEP, 2013)](image)
Exercise Design and Development is to ensure that planning, development, documentation, conduct, evaluation and logistics are done correctly. At key points in this process, the exercise planning team engages elected and appointed officials to ensure their intent is captured and that the officials are prepared to support the exercise as necessary.

Exercise Conduct is next when the training is ready to occur. Activities essential to performing individual exercises include preparing for exercise play, managing exercise play, and conducting immediate exercise wrap-up activities are conducted.

Exercise Evaluation is the cornerstone of an exercise and must be considered throughout all phases of the exercise planning cycle. An effective evaluation assesses performance against exercise objectives and identifies and documents strengths and areas for improvement in core capabilities.

Improvement Planning is to ensure corrective actions identified during a simulation are implemented. An effective corrective action program develops IPs that are dynamic documents, which are continually monitored and implemented as part of the larger system of improving preparedness.

Key Performance Indicators, KPIs, helps team leaders and members to identify various functions and processes essential to achieving team goals. A properly developed and implemented KPI program incorporates regular review processes where leaders and other stakeholders assess the meaning of the results. (KPI, 2017) This must be designed for an exercise cycle, so everyone using it can measure the KPIs in the same way.

Intrinsic motivation

The reason responders do the demanding work they do is an interesting thing to explore. Motives are reasons people hold for initiating and performing the voluntary behavior. They indicate the meaning of human behavior, and they may reveal a person’s values. Aristotle divided motives into ends versus means on the basis of the individual’s purpose for performing the action. Ends are indicated when a person engages in behavior for no apparent reason other than that is what the person desires to do. (Reiss, 2004). An example of this is a volunteer that dedicates himself to learn the skills needed to be the best to carry out salvage jobs. In contrast, we might have a full-time responder who adds knowledge to get higher salary class. This is motivated by a desire to get a higher salary which could cause that the knowledge fades when the goal has been reached. For a first responder is a big issue to be intrinsically motivated to be good at what he does.

2. METHOD

This research aims to examine inter-team dynamics and challenges to inter-team performance arising where different teams of first responders work together. Particular focus will be on how the teams communicate with other teams as there can be a difference due to diverse leadership practices and cultures. Furthermore, methods to close any identified gaps will be examined.
The research will be done in two ways: firstly, using quantitative research were participants in a large rescue simulation answered a questionnaire; secondly, using qualitative research where eight key persons of different first responders were interviewed.

The questionnaire approach

To gain data from many different first responders in the same situation a quantitative research method was used. A questionnaire was handed out at the start of a joint exercise where eight different first responder units worked together. This way a lot of answers were collected with responders answering the same questions but from their specific points of view. Answers are rated on a scale from 1 to 5, and from the rates, an average value is calculated and results evaluated (Sigríður Halldórsdóttir, 2013).

The questionnaire structure

A questionnaire was handed out at the start of a joint simulation where seven different first responder units worked together. The questionnaire was answered before the start, in a break during the simulation and finally after the simulation. The participants were instructed on the importance of delivering back the questionnaire with their answers back, and the researcher was visible through the exercise to provide assistance if necessary.

The questionnaire was classified into the following sections:

- Personal profile, gathering information on participants and, find how well participants think they know their capabilities before the simulation and after.
- Objectives for the exercise, gathering information on what members want to learn from this simulation and what they want to get out of this questionnaire.
- Technical issues. One of the biggest problems in all simulations is telecommunication, so participants got a specific question on this and were asked to write down any other technical issues.
- Communication issues are one of the main things examined during inter-team dynamics. Questions addressing both ingroup and outgroup topics were asked, alongside an examination of how orders were communication via the hierarchy.

The interview approach

To provide data for a wider perspective on the research, a qualitative research method was used to gain insight into the experience of key persons of different first responders. In-depth interviews, using the approach of phenomenography, were chosen. Thus, interviewees can express themselves freely concerning the subject and reflect on things which they and the interviewer deemed to be important. This methodology also allows a deeper response to questions. The limitation of the qualitative research method is that it is not possible to generalize from the collected data. It can only be used to gain insight into thoughts and opinions, and it can only give possible indications on things. The risk of bias is noted, in so far that research is often conducted to prove a certain hypothesis or need so the interview response may be biased. (Sigríður Halldórsdóttir, 2013).

The interview structure

Eight interviews were conducted. They were concluded in a two-week period and took place face to face. The duration of each interview was from one to two hours, and
everything was recorded. All interviews are confidential with a written agreement between interviewee and interviewer. Same questions were made for the interviews and sent to the participants beforehand so they could prepare. The questions were divided into following sections, and the questions are in the appendix.

- Defining question – to get the interviewees’ insight on the subject.
- Personal profile – to get the interviewees’ position and experience.
- Inter-team dynamics in emergency context – getting the interviewees point of view on issues and how to improve
- Simulation as exercise method – getting the interviewees opinion on the use of simulations to improve issues in inter-team dynamics.

3. RESULTS

The simulation

The Civil Protection in South Iceland held a simulation of a big accident on 21st April 2016. The simulation was a large event involving a car crash with a bus, with four cars had hit, and one of the cars on fire. In the other cars, people were trapped and injured and could not get out without help. The bus had to be cut open to get the injured actors out. One car had fallen off the road and rescuers had to be lowered down with their tools to be able to work on the car. There were about 50 actors that acted as victims in the simulation.

In charge of the simulation was the Civil Protection (CP) in South Iceland. The CP is invoked when a large accident or a natural disaster happens, and many rescue teams must work together. In an accident like this, there can be eight different responders that must collaborate. In this simulation, there were over 200 participants from 7 different responders. Participating responders were the Police(PD), Paramedics(PAR), Firefighters(FD), Hospital, Search and Rescue teams (SAR), Red Cross(RC) and the Emergency line(EL).

The simulation was held in “walking mode,” which means that there everyone should know what was going to happen. Everyone knew the timeline, and no surprises should occur. Participants were informed about the scene and about the timeline.

A questionnaire was handed out at the start of the simulation to collect data from the participants as described in the Method section. The questions were designed to find out what participants wanted to learn from the simulation, what they learned, and if there were any technical issues or matters in cohesion within teams or between teams. Knowing the questions in advance could affect the answers as the responders have time to consider the answers and knowing the questions could also affect their approach to the simulation. In total 210 questionnaires were handed out, and 125 were returned. Some were not entirely filled out which explains different numbers of answers in the tables below.

- Participants’ personal profile varied but all knew their skills and what was expected of their know-how. 75% said they knew what they role in the simulation was. They were all full time or part time professionals. 90% of the volunteers were however not sure of their role in the simulation.
- Participants primary objectives for the simulation were as following
- 50% wanted to learn about and get better at responding and organizing when a big car crash occurs.
- 35% wanted to get better at their role, which varied, in any disaster situation. Those roles were both rescue roles and leading roles.
- 15% wanted to learn how to communicate better in any emergency situation.

The following table shows results from the questionnaire answered in a 10-minute break during the simulation.

*Table 3 Answers during the simulation*

<table>
<thead>
<tr>
<th>Nr</th>
<th>question</th>
<th>Num. Ans</th>
<th>Ave.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How well can you express yourself within your unit</td>
<td>116</td>
<td>4,57</td>
</tr>
<tr>
<td>2</td>
<td>How good was the cohesion within your unit</td>
<td>117</td>
<td>4,51</td>
</tr>
<tr>
<td>3</td>
<td>How willing do you feel other within your unit are to listen to your opinions</td>
<td>116</td>
<td>4,56</td>
</tr>
<tr>
<td>4</td>
<td>How is the attitude of other units towards your unit</td>
<td>114</td>
<td>4,5</td>
</tr>
<tr>
<td>5</td>
<td>How well can you express your opinion with others outside your unit</td>
<td>114</td>
<td>4,23</td>
</tr>
<tr>
<td>6</td>
<td>How well does the telecommunication system work</td>
<td>113</td>
<td>2,83</td>
</tr>
<tr>
<td>7</td>
<td>How are clear lines of command, is it clear who controls what?</td>
<td>117</td>
<td>3,19</td>
</tr>
</tbody>
</table>

The first five questions relate to intra- and inter-team dynamics score all over four which is a very good result. Telecommunication score just a 2,8 and the communication from command only scores a 3,2.

*Table 4 Answers after the simulation*

<table>
<thead>
<tr>
<th>Nr</th>
<th>question</th>
<th>Num. Ans</th>
<th>Ave.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How clear was your role in simulation</td>
<td>116</td>
<td>3,83</td>
</tr>
<tr>
<td>2</td>
<td>How well did you know your role</td>
<td>115</td>
<td>3,97</td>
</tr>
<tr>
<td>3</td>
<td>How well do you think commands from control were delivered (from above and down)</td>
<td>114</td>
<td>3,5</td>
</tr>
<tr>
<td>4</td>
<td>How well do you think message from responders to control were delivered (down and up)</td>
<td>113</td>
<td>3,35</td>
</tr>
<tr>
<td>5</td>
<td>How well does the telecommunication system work</td>
<td>111</td>
<td>2,88</td>
</tr>
<tr>
<td>6</td>
<td>How good was the cohesion in your unit</td>
<td>115</td>
<td>4,66</td>
</tr>
<tr>
<td>7</td>
<td>How good was the communication between your unit and other units in the practice</td>
<td>115</td>
<td>4,24</td>
</tr>
<tr>
<td>8</td>
<td>How well did you feel you could express yourself with other units.</td>
<td>113</td>
<td>4,22</td>
</tr>
<tr>
<td>9</td>
<td>How willing did you feel other units were to listen to your units opinion</td>
<td>112</td>
<td>4,29</td>
</tr>
<tr>
<td>10</td>
<td>How well cold you express yourself within your unit</td>
<td>115</td>
<td>4,57</td>
</tr>
<tr>
<td>11</td>
<td>How willing were other within your unit to listen to your opinions</td>
<td>113</td>
<td>4,55</td>
</tr>
<tr>
<td>12</td>
<td>How good was the overall communication in the simulation</td>
<td>115</td>
<td>3,9</td>
</tr>
<tr>
<td>13</td>
<td>How well did you feel you got what you wanted from the simulation</td>
<td>113</td>
<td>3,73</td>
</tr>
</tbody>
</table>

Answers after the simulation were comparable with the answers during the simulation. Participants knowledge of their role scores below 4 and communication from and to command is also under 4.
Other written comments matched results in the table, though there were some additional comments including the following:

- A diagnostic unit from the hospital did not get SMS when to start.
- The waiting area for rescue equipment was not organized, and some of the rescuers waited there nearly all the simulation.
- Collection area for patients needed more organizing.
- The main technical issues that occurred were telecommunication. Tetra radios were used, and the capacity in the sender for this area was not big enough. Telecommunication was the only asked directly, but participants were asked to write down issues if there were any. However, nothing of importance came to pass.

Overall, the simulation went very well, and the majority of participants was satisfied with what they got out of the practice. Communication problems occurred between leaders of different teams which were due to inadequate preparation. This resulted in responders saying that messages were not received or that they did not get information from leaders. These things did not affect the dynamics between teams but may have if the simulation had been driven in full action mode, at full speed under more demanding conditions.

After the simulation, there was a debrief meeting with all participants where leaders of different areas commented on how the simulation went. The debrief was not systematically conducted, and information regarding what should be done better was not noted or collected.

**The interviews**

The following shows the outcome of interviews conducted with eight leaders of first responders in Iceland. Relevant topics for the research will be highlighted in each section as listed in the Method section. All the interviews were recorded and will be explored further in a continued research on this topic. The interviews were conducted with three police officers, three firefighters, one paramedic and one from the search and rescue.

The personal profile was required in order to gain info on the interviewee's experience as a first responder. They all had 17 to 30 years’ experience as responders and 10 to 22 years’ expertise in a leading role. Today three of them are first in command, three are second in command, and two play an important leading role when a big crisis occurs.

Discussions of their personal profile led to reflections to why the individuals had become first responders, and what motivated them to be first responders. In all cases, interviewees wanted to do good and be able to have an impact on people's lives. One said he needed a physically challenging job where he can make a difference. Another wanted to have an impact on making the world a better place. All were clear about why they do what they do.

Defining questions were about the interviewee's insight regarding groups, teams, and inter-team dynamics. All the interviewees had the same perspective on these aspects though some had deeper insights than others.
• Groups are a group of three or more people that work to in the same service as a group of firefighters from the same station or a group of search and rescuers from the same center.

• Teams were defined by all the interviewees as a group of individuals which have a vast knowledge of each member in the team. Where each team member having a specialization in his rescue field and the other members knows the capabilities of the others and trusts the abilities of others. A good rescue team is where the team members have a diverse knowledge needed to complete each task they are called towards.

• Team dynamics is a very important issue, and all interviewees agreed that this is a matter that needs to be continuously monitored. Everyone said that this is not a big problem nowadays, but it should not be ignored. To have good team dynamics leaders must be aware and respond if they see detrimental changes in a team member's behavior. Some responders use courses like Dale Carnegie to educate leaders, sharpening their skills and to improve their performance.

• Inter-team dynamics are just as important as team dynamics all the interviewees agreed on this. The interview also showed that there was a significant difference in the dynamics between smaller clusters of teams. There is a better cohesion between the police department and SAR than between the fire department and SAR. The main reason for this is different views on when the FD or SAR is to be dispatched. The SAR believes that a job is theirs, but the FD argues that it is quicker. These issues are declining as the teams do more work together and more respect is held in the ability of the other teams.

Inter-team dynamics in emergency context - interviewees were asked about what are the most important factors in inter-team dynamics. Are they contained in leadership, communication, technology, culture, attitude or is there were any other areas the issues are. They were also asked if there are any problems and what can be done to improve these problems.

• Leadership is seen as one of the most important factors leading to cohesion between teams because the leader is the one team members look up to. Leaders have to be open minded about working with other teams, and in doing so, team members will follow. Leadership, especially in the FD and PD is twofold: on a call-out, there is a strong hierarchy where the team must obey the leader, but in other times many have a more servant directed leadership method. This can be confusing for some leaders as these two leadership methods are very different. An example cited was that of a leader in the FD who always led as if he was on a call and gave strict orders on how to make coffee or how to wash the car. This made his team members insecure and dissatisfied. One of the problems with leadership is that there is no specific training for leaders within the responder area. Most interviewees agreed that better leadership skills could be taught, but only a few have taken steps to teach this, such as sending leaders to Dale Carnegie courses. They feel that these courses help their leaders to grow, but that they are mainly teaching communication and are more intended for this field.

• Communication is as big of a factor like leadership, which is crucial in order to build a good inter-team dynamic with different first responders. Being able to
communicate with other teams is a feature all team members must possess so good cohesion is formed between teams. The interviewees agreed that this is not an ability all responders possess and it is important to focus on this matter in the future. Looking back 20 years’ communication has come a long way, but there are still many things to improve particularly regarding inter-team dynamics. These improvements have been due to more cooperation between different responders and through that mutual respect has increased between responders.

One of the things enhancing communication is having a common emergency line where all emergency calls are called in. For example, in Norway, the PD, the PAR, and FD all have different emergency numbers. One of the interviewees had worked for the FD in Norway, and he said that there was no communication between responders. Not even when they were working side by side on site. A positive side to having a common EL in Iceland has led to all the responders are using the same telecommunications system.

• Technology is an issue, but not the main issue in improving cohesion between teams, according to the interlocutors. However, use of a joint operational program is a helpful tool for the teams to work together. This is an internet-based program that is being developed and will be a great help in the future. Responders thereby, use the same radio systems, resulting in a common procurement strategy in relation to radios. Joint purchases are increasingly taking place within the sector. For example, the SAR recently asked the FD were what kind of chainsaws they used as a basis for own purchase. Different SAR teams now also have common purchases in areas such as snow avalanche rescue equipment. The RC in Iceland handles all the procurement of ambulances in Iceland, so no matter where you work as a PAR, you always have the same equipment. For responders in different rescue teams to know the other team’s equipment should result in better relations.

• Cultural differences exist between responders, particularly in relation to roles as full professionals, part-time professionals, and volunteers. Interviewees all said that issues between these teams are on the wane as they work more together than before. But there are still issues when full time and part time teams have to exercise together outside of the regular nine to five work hours. As part-timers and volunteers have their day job to attend to, full timers feel they should get paid overtime to practice with them. As this is often a budget issue, this may not happen resulting in some irritation.

A significant cultural difference is in the structure of the volunteer and professional teams. Professional’s work tasks are set by a framework of the law. But the volunteers, as within the SAR, base their expertise on their interests. This can cause a problem for small SAR teams, for example, when members with expertise within winter rescue quit the team as know-how in that area decreases.

• Attitudes towards others are a significant matter for inter-team dynamics. This has been a problem as team members have not had the correct understanding of, for example, differences in team culture. Full-time professionals have through the years looked down on part-timers and volunteers. The full-timers have thought of themselves as superior to others due to their status as full-timers. This has been improved with good leadership and communication, though it is felt that there is still room for further improvement.
Over the last twenty years, from the view of the interviewees, there have been great improvements in the matters discussed above. In the year 2000 collaboration between responders was not a primary focus. Since then there has been much more focused cooperation that has resulted in more mutual respect and knowledge between responders.

In all the matters discussed interviewees agreed that improvement could still be made. They also agreed that all knowledge must be maintained, and the best way to improve and maintain knowledge and good cohesion in inter-team dynamics are through simulation exercises.

Interviewees were asked about the best way to learn about and improve inter-team dynamics. It was questioned whether simulations are an effective tool to implement learning or if there any other methods.

- Simulations like the one described at the start of this section are a good way to learn and implement learning, the interviewees felt. Interestingly, real-life simulations where everyone knows what is going on before has the disadvantage that the participants are not challenged with unknown situations, which will always occur in a real situation. Simulations can be done in different ways and on a different scale; the main thing is to customize the simulation to the given issue.
- Table top exercises (TTX) is another way to learn and implement learnings. In a TTX participants sit around a table and work on a particular case to find a solution on paper. Participants can be leaders or members from different teams which will give them better knowledge of culture in other teams. Participants will also get to know each other which will result in better cohesion between them and make better inter-team dynamics.
- Training courses are also a good way to implement knowledge of a certain topic but do not necessarily lead to better cohesion if participants don't work together. Course topics could, however, be about team dynamics and the importance of good cohesion between different teams.
- Computer simulations can be used as a learning tool but are more individually oriented to test ability in a certain case or situation. Today, computer simulations are more to show the participant's ability to solve cases resolved inside the teams.
- Walkthroughs is a method to refresh already made plans, like action plans or to review a simulation plan. In a walkthrough, participants go through a plan step by step and discuss each part of the plan to make sure everyone understands it correctly. Having relevant team members participating in a walkthrough will give them knowledge of other teams view of the program, to give back to their teams.

All the interviewees agreed that the paper's research question that simulations will always be useful to improve inter-team performance. Significantly, it was felt that in a crisis, most teams put aside differences and put all the energy on the rescue. But in quieter times they might start to look at the differences, and those are the times that must be considered.
4. DISCUSSION

The aim of this paper was to gain insight into inter-team dynamics in first responders units in Iceland and see if there are any gaps in performance. If there are gaps, the thesis that simulations would help to bridge these gaps was explored. The specific simulation examined showed that good cohesion existed between the different teams and the gaps were in communication from a command level. But the relation between teams and within the team was good. Preparation for the simulation could have been done better as the different teams did not get the same information. Additionally, some teams did not receive the call when the simulation started, which resulted in frustration. The post-simulation meeting debrief was short, and feedback was not systematically gone through.

The interviews gave a good picture of history and how dynamics have evolved through the years. There have been many conversations with different responders were issues with inter-team dynamics have been discussed. These informal discussions have given similar results as the interviews gave.

A good job has been done in the past years were different responders had gained a better insight into how other responders work and think. This has resulted in better inter-team dynamics were the cohesion and collaboration have improved. The reason for this is that teams have interacted more with each other and trained together in simulations of a different kind. This shows the importance of simulations and that teams get an opportunity to work together.

In earlier times the mindset had been who will rescue but not who will be rescued. This mindset undermined collaboration and is, fortunately, a declining mindset. Nowadays responders are more open-minded towards knowing the ability of other teams and how they can use others’ knowledge. This has been achieved through dialog and joint simulations on different scales. There is still work to be done in this area as inter-team dynamics seems to differ in various areas of the country. This has not been researched but came through informal conversations with responders and not through the interviews.

Exploring the difference in culture and structure between full-time professionals, part-time professionals and volunteers show there still is a lack of knowledge between teams. Within the FD the full-timers have a tendency to think that they are better than part-timers, though both are able to do the same work. To widen different teams perspective towards the other teams, it is advisable that they get better insight into the other’s culture and get to know how their structure works.

To improve relationships between responder teams, it is recommended that they get to know each other better. This can be done in different ways such as unconventional gatherings or meetings, but there is always the risk that the teams don't mingle. Alternative gatherings will give people a chance to get to know each other which is good. But it does not provide the in-depth knowledge of others’ ability in a real crisis.

The best way to create good inter-team dynamics is using joint simulations, table top exercises or other venues where responders show what they are capable of. This will give everyone a better insight of the different team’s capabilities. This will build more trust and respect between teams and both on- and offsite collaboration will be better.
Using simulations as a learning methodology has many advantages. It is good for team building were different teams learn the abilities of other teams. It enhances team performance and increases team effectiveness if it is done right. Simulations can build trust and authenticity between teams and will give the teams real learning opportunities. A great advantage of simulations in real time, it will give responders experience to adapt to different situations.

Disadvantages with simulations are they can be complex; they have to be well designed, and the running must be well executed, and the feedback has to be done correctly so that the learning will be absorbed. Big simulations can be costly as full-time professionals must work at hours were part-timers, and volunteers can participate. Each simulation can only cover a part of the field responders work in so it will have to be variation in simulations.

Project managing simulations

Simulation or any exercise method will only be useful if good preparation has been done in advance. Simulations must be carefully designed with a focus on certain priorities that the exercise should induce. Planning and preparation for any simulation are crucial, enabling all stakeholders to be aware of their role. A design of a large joint simulation as the one described in this paper should be done with a manuscript. That is the only way to ensure that everyone knows their role, knowing what to do and when. After the preparation has been done the execution should go effortlessly if everyone knows their role. When the simulation is concluded, a proper debrief must be conducted. The debrief must be written down where all the issues that occurred in the simulation are highlighted. Those issues should then be given tasks and handed to a sponsor that gets a stipulated time to conclude the work. This correlates with the exercise cycle used by homeland security exercise and evaluation program used to in the USA. (HSEEP. 2013) This method can be used to keep track of the evolvement of the simulation program management.

Using project management tools to build a simulations program like the one HSEEP would be a very useful thing. Using the National Civil Protection to manage such a program would be essential to ensure that the program was maintained. One of the interviewees had
the idea of a public organization to manage different tasks for the responder service. This would give the responders a common platform to work with simulations and more.

**Simulations are not enough**

To get good inter-team dynamics, it is not sufficient to have good simulations or desktop exercises. There are various skills which the teams need to cultivate, skills which can be implemented with multiple learning strategies.

Communication is perceived as not optimal in a number of areas and needs to be improved. A good way to work on communication is using available courses such as Dale Carnegie, as some of the responders are already doing. This could be difficult to implement with the volunteers as the courses are expensive.

make a fast recommendation on how to improve things. This will need more research.

In respect of the idea to have a public organization to manage different tasks for all responders, this might be a good way to build on improvements in cohesion between responders. This could help responders to build a common structure within their teams. Common planning on joint simulations would help a lot. The organization could organize and get better deals on different courses. Procurement could also be something done commonly as responders use for example the same telecommunication system amongst other things.

**Intrinsic motivation**

Why first responders do what they do is something worth examination. Exploring why responders are so invested in what they do, leads us to a consideration of intrinsic motivation. Intrinsic motivation refers to behavior that is driven by intrinsic rewards. In other words, the motivation to engage in a behavior arises from within the individual because it is intrinsically rewarding. (2016, Kendra) This might be an interesting thing to look at for further investigation on this subject as it may be the key driver for communication and inter-team dynamics in general.

Simon Sinek, the author of the book “Start with why” has explored the military and found those how were invested and passionate about what they did went the furthest, knew why they were doing what they were doing and how they should do it.

This is what happens with responders when they go to a rescue site; they know why they are going there. That is why they work together as one on the site and on simulated sites like the simulation showed us. Responders should find the same feeling for work off-site to build on inter-team dynamics.

Integrating those thoughts over to business organizations Simon Sinek has drawn what he calls the golden circle. The circle represents what we do, how we do it and finally why we do it.
• WHAT - Every person or organization knows what they do, this is your job title, function, the products you sell or services you offer.
• HOW - Some people or organizations know how they do it, these are the things you do that make you special or set you apart from your peers.
• WHY - Very few people or organizations know WHY they do what they do. The Why is not about making money - that’s a result. The Why is a purpose, cause or belief. Your Why is the very reason you exist.

Why we do what we do is the something worth investigating further so we can find our purpose. That way we will get the most out of the life we want to live.

5. CONCLUSIONS

It is clear that finding one solution to enhance inter-team dynamics is a complicated thing. But using simulations of any size were teams work together can improve the dynamics but only if they are correctly set up. The purpose of this paper was not to give a definite answer or solution on how to improve inter-team dynamics with simulations. It’s purpose, however, was to gain insight into how the situation currently really is, if there is room for improvement and whether there are other aspects that need to be improved.

Quantitative and qualitative approaches were used to collect information and see whether there were any gaps between teams. There seems to be a general view that inter-team dynamics are good between first responders in Iceland. Taken into perspective how things were 20 years ago this is correct, but there is still room for improvements. Putting the focus on enhancing dynamics between teams will prove to be a good strategy as responders will be more motivated to know others ability and strength. Simulations, tabletop exercises and other educational methods are a good way to get better inter-team dynamics if they are done correctly.

The simulation showed us that teams work well together both internal and external, and in that kind of situation the teams have the same aim and are motivated to get the job done. The planning of the simulation was good, but the preparation should have been better as the disclosure of the information was not homogeneous between teams. The execution went well, and a good job was done were different teams had to work together in a complicated situation. Debrief, and drawing learnings from simulation should have been
done in a more efficient way. Doing this simulation and showing that the responders capable of completing a large task like this gave the first responders the confidence needed to face a real situation when it happens.

Throughout the interviews, it became apparent that improvements were continually being made and that leaders were always trying to find new ways to improve themselves and their work. Responder are willing to gain better knowledge towards other responder teams and leaders must create venues for them to interact. Improving dynamics will not only happen through simulations or other types of activities. There will also have to be carried out other improvements like common exercise programs, procurement strategies, structure changes amongst other things. Having a public office that would manage those common tasks would prove to be helpful.

First responders are in general highly motivated people which know why they do what they do. Intrinsic motivation within first responders is a something worth investigating further as they are very invested in the work they do. Integrating this motivation over to the corporate world would be an interesting subject to research further.

This paper only covers the first layers of what can be done to improve collaboration between teams. This is a subject for further investigation, but the landscape is very complex and has contradictions, so it's not possible to make a quick recommendation how to improve things. It, however, seems that simulations, table-top exercises, and other educational methods are really the best way in order to improve mutual understanding and respect between different teams. That is maybe the main conclusion of this project.

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7. REFERENCES


8. Appendix

Simulation questioner

Before simulation (expectations):
1. What would you like to get out of the exercise?
2. Why might this survey give you?
3. How clear was your role in the exercise?
4. How clear was the layout for the exercises?
5. How satisfied are you generally with the behavior of other responder units towards your unit?
6. How well can you express you towards other responds units?

Questions in simulation (answers from 1 – 5)
1. How well can you express yourself within your unit?
2. How well does your unit hold together?
3. How willing do you feel other within your unit are to listen to your opinions?
4. How is the attitude of others units towards your unit?
5. How well can you express your opinion with others outside your unit?
6. How well does the telecommunication system work?
7. How are clear lines of communication(command), is it clear who controls what?

Questions after simulation (answers from 1 – 5)
1. How clear was your role in practice?
2. How well did you know your role?
3. How well do you think commands from control were delivered (from above and down)?
4. How well do you think the message from responders to control were delivered (down and up)?
5. How well does the telecommunication system work?
6. How good was the cohesion in your unit?
7. How good was the communication between your unit and other units in the practice?
8. How well did you feel you could express yourself with other units?
9. How willing did you feel other units were to listen to your units opinion?
10. How well could you express yourself within your unit?
11. How were willing other within your unit to listen to your opinions?
12. How good was the overall communication in the practice?
13. How well did you feel you got what you wanted from the practice?

Interview

Here below is the list of questions which was used as guidelines in the interviews. Everything was not included in this paper, but the data is available for continued research

Defining questions
1. What is the difference between a group and a team
2. What characterizes a high performing team:
a. What do they do doing?
b. Thinking
c. Knowing
3. What do you understand by the term “inter-team dynamics.”
4. What do you think to make effective inter-team activity?
5. Dilemma of inter-teams leadership, do we have one leader or a few

Personal profile
6. What’s your experience of working in inter-team situations?
   a. Frequency
   b. Role
   c. Purpose

Inter-team dynamics in emergency context
7. What do you see as the main issues/problems affecting inter-team performance?
   a. Leadership
   b. Communication
   c. Technology
   d. Culture
   e. Attitude
   f. other
8. What do you think is important to ensure inter-team performance?
   a. Leadership
   b. Communication
   c. Technology
   d. Culture
   e. Attitude
   f. other

Simulation
9. How useful are simulations in developing inter-team performance?
   a. Real
   b. Table top
   c. Computer
   d. Other
      i. Walkthrough actions plans
10. How should simulations be facilitated?
    a. Designed
    b. Prepared
    c. Run
    d. Debriefed
11. What is the best way to implement the learning?
12. Any other comments
    a. What would you like to get out of this paper?