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QUALITY PAPER

How to facilitate improvements in public service systems: propositions for action

Facilitating
improvements
in public
service systems

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Abstract

Purpose – The purpose of this article is to increase the understanding of how improvements can be facilitated in a public service containing multiple actors in terms of identifying, aligning and prerequisites for the improvements.

Design/methodology/approach – The research utilizes an interactive research approach where data were gathered through a conference, workshop and a survey. The study alternately combines quality management methods such as affinity and interrelationship diagrams with computer aided text mining and latent semantic analysis.

Findings – The research shows that practitioners must consider interconnectedness between improvements and benefits that are crossing organizational levels of the public service system as well as professional borders. In public service systems, the complex reality can be better understood when improvements and benefits are classified into different organizational layers and an interconnectedness and sequence of improvement areas are acknowledged.

Research limitations/implications – The research is set in the Swedish public service of the tax-paid sick leave insurance. Future research would benefit by investigating similar cases in other nations and other services.

Practical implications – The used methodology can be applied by practitioners to enhance a unified understanding of the system required to improve. The study also guides practitioners for how to support, relieve hinders and prioritize improvements.

Originality/value – The research fills a gap of understanding of improvements in public services with multiple actors. As this area is difficult to improve, a novel combination of qualitative and quantitative methods paved the way for deeper and more unified understanding of the system.

Keywords Public service, Welfare, Service system, Improvement, Public sector, Quality management, Interactive research

Paper type Research paper

Introduction

As the demands from society on public service systems are growing, they need to be improved (Bryson *et al.*, 2021). Moreover, public sector and public systems often face problems with high uncertainty – sometimes labeled “wicked problems” (Geuijen *et al.*, 2017) – that require numerous perspectives to be successfully solved (Camillus, 2008). This collaborative

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requirement sets a difficult scene for public sector, as it is comprised of a diverse set of actors with diverging perspectives, goals and problem definitions (Bryson *et al.*, 2017).

As citizens demand increased effectiveness, service quality and access, quality management is one of the core domains in the context of the public sector to enable improvements (Elg *et al.*, 2017). Thanks to scholars such as Juran (1962) and Deming (2000), improvements have been at the center of quality management for a long time (Bergman and Klefsjö, 2010), as the field has developed, different approaches have emerged and been applied in various contexts, such as the Plan-Do-Study-Act (PDSA) or the Deming cycle, Define-Measure-Analyze-Improve-Control (DMAIC) and kaizen (Bhuiyan and Baghel, 2005; Henrique and Godinho Filho, 2020; Jevanesan *et al.*, 2021). Although quality management initially had a product-oriented focus and mostly applied to the private sector (Bhuiyan and Baghel, 2005), it has progressed into a more diversified picture and is being applied in both services and public organizations (Fundin *et al.*, 2018).

Furthermore, quality management principles and tools needs to be adapted – such as the customer concept (Osborne, 2018) or the value concept (Moore, 1994) – before they are implemented into public sector (Elg *et al.*, 2017). Moreover, there is also a need to understand the interplay between different types of improvements, given that interpretations of terms such as quality improvements, process improvements and continuous improvement can be in conflict (Matthews and Marzec, 2017).

When it comes to changing an organization, it has been argued that, to be successful, a combination of top-down and bottom-up initiatives are required, balancing both financial and human factors (Beer and Nohria, 2000). However, it is not easy to simultaneously apply these approaches where top management ought to set a direction but also allow for employees to find root causes, diagnose the problem, find a proper solution and implement it (Edwards *et al.*, 2020). Here, it is often difficult for managers to adopt such a holistic approach to be successful with the change (Oakland and Tanner, 2007).

Standardization is an important part of any organization, as a means of communication and coordination (Mintzberg, 1993), enabler of continuous improvements (Lillrank *et al.*, 2001) and to secure a sufficiently high level of quality (Bergman and Klefsjö, 2010). However, one problem is that an excessive focus on standardization inhibits an organization's ability to innovate, as it promotes exploitative actions at the cost of explorative ones (Benner and Tushman, 2003). Furthermore, in professional organizations, excessive standardization and control on a high organizational level are counterproductive as they hinder professionals from acting based on their own detailed knowledge of their profession (Mintzberg, 1998), this is an important aspect because the detailed knowledge of the profession, in combination with knowledge of improvement methodologies, are required in order to successfully improve professional organizations, such as healthcare (Batalden and Stoltz, 1995).

Problems are easier to manage when they are categorized and properly understood (Snowden and Boone, 2007). However, more knowledge might not always make it easier to make decisions, as it just creates more opportunities to choose from (Brunsson, 1982). Moreover, in the context of public services, which often has multiple actors who are involved in each issue, it might be even harder to decide what to do (Brunsson, 1982; Bryson *et al.*, 2017). Snowden and Boone (2007) presented a framework for decision making that consisted of four categories – simple, complicated, complex and chaotic – that aid leaders by classifying the problems they are facing. In short, the simple problems consist of known parameters and solutions, the complicated ones consist of known parameters but unknown solutions, and the complex ones consist of unknown parameters and solutions, but it is possible to distinguish patterns between parameters and solutions. However, chaotic problems have unknown parameters and solutions, where no pattern can be found. Another aspect of this framework is that the problem categories are not fixed; that is, a problem can move from one category to another as knowledge increases, and one problem can have components from several categories.

In a public service system, the multi-actor context is most often not voluntary, but actors are often forced to collaborate with other entities, which are not a part of their typical context; for example, healthcare actors often collaborate with a variety of actors from the surrounding community (Eriksson and Nordgren, 2018). Hence, it is important to coordinate these actors and understand what mechanisms make the operations run smoothly, where the balancing act of top-down versus bottom-up improvements are even more difficult than they are in a single organization (Bryson *et al.*, 2021; Edwards *et al.*, 2020; Mintzberg, 1993). Consequently, one of the issues that must be addressed is to align the overall improvement initiatives with the diversity of problems found and acknowledged locally (Edwards *et al.*, 2020; Kovach and Ingle, 2020). Furthermore, decision makers of public administrations often struggle to create value for society, as whatever decision they make becomes the wrong decision from some actor's perspective (Geuijen *et al.*, 2017; Prebble, 2021). However, there is a research gap when it comes to how improvements are to be done in systems involving multiple actors (Gyllenhammar *et al.*, 2022).

The public sector has since the introduction of new public management (NPM) during the 1980s (Bryson *et al.*, 2015) transitioned towards a market-logic with a competitive mindset and an intraorganizational focus (Alford and Hughes, 2008; Eriksson and Hellström, 2021) but as public services system is often ridden by goal ambiguity and difficulties in measuring performance (Lapuente and Van De Walle, 2020), the characteristics of NPM are at moments not suitable in public services (Osborne, 2006). This notion of goal ambiguity and difficulties in measuring is of particular interest as it is also seen as a prominent reason for failure of improvement projects (Antony and Gupta, 2019).

Hence, the overarching aim of the present article is to increase the understanding of how improvements can be facilitated in a multi-actor public service system. To further guide the research, the following research questions are used:

- RQ1. How can a joint understanding of improvements be facilitated in a public service containing multiple actors?
- RQ2. How can the joint understanding regarding improvements be enhanced in order to support prioritization?

To fulfill the above aim, this article presents an analytical framework regarding coordination mechanisms, which are later used to analyze the findings. Afterward, a procedure for how to identify improvements is depicted in the method chapter, followed by a presentation and analysis of the results. Afterward, a discussion elaborating upon the results is held, which is summarized in the conclusion depicting eight propositions regarding how improvements can be facilitated in multi-actor public services.

Theory/conceptual framework

The conceptual framework of the research is set on the notion that the context of public service containing multiple actors requires high level of collaborative efforts to succeed (Bryson *et al.*, 2017). Hence, the aspect of what coordination mechanisms that are required for collaboration are first described. In the end of the chapter, improvements in the context of professional organizations, such as healthcare, is elaborated. This enables a connection to the part of the purpose regarding improvements.

Coordination mechanisms

It is fundamental for any organization to have a proper division of labor and sufficient coordination and alignment between tasks (Galbraith, 2014; Mintzberg, 1993). There are several ways to describe coordination and below Mintzberg's five coordination

mechanisms – namely *mutual adjustment*, *direct supervision*, *standardized work processes*, *standardized output* and *standardization of skills* – are used as a basis to elaborate further on the area of coordination.

Based on Mintzberg's (1993) mechanisms, *standardization of output* and *process* relates to what Claggett and Karahanna (2018) referred to as *structured content* where actors within a system have defined content for how to coordinate. An example of standardized work processes is the case when assembling furniture at home, where you receive detailed instructions from the manufacturer regarding how to assemble what was bought. However, *standardization of work processes* can also be carried out to achieve more complicated results, such as the conveyor belt in Henry Ford's car factory. Meanwhile, *standardized outputs* or shared goals (Gittell and Douglass, 2012) are used when the work process is difficult to standardize, such as a journey by taxi. The taxi driver is only given coordinates, not told which route to take. Expectations of the result are set, but how to get there is left for the performing actor.

Standardization of skills or knowledge is used when neither the work process nor the outcome can be standardized. This mechanism depends on (often professional) training to perform the specified work, where knowledge of others' role in the holistic system plays a vital part in succeeding with the task (Gittell and Douglass, 2012). Hence, it is indirectly achieving the same as standardization of work processes and outcomes.

Seemingly the simplest mechanism for coordination described by Mintzberg (1993) is the informal adjustment between those performing a task. Notably, *mutual adjustment* is seen in both the simplest organization – such as two people coordinating when carrying furniture – and the most complex – such as sending a person to outer space – where a lot of people perform their specific tasks, but at the outskirts the assignment, when the other possible coordination mechanisms are already utilized, mutual adjustment is still required to succeed with in-the-moment coordination. This requires a relational aspect in which the actors appreciate the roles, skills, knowledge and expertise of others and are, therefore, a fruitful complement to the standardization of skills (Claggett and Karahanna, 2018; Mintzberg, 1993).

A common coordination mechanism in hierarchical organizations is *direct supervision*, which is when coordination is facilitated and centralized to someone directing the others towards what they should do and at what time the action should be performed. A vivid example here is a military unit with a commander ordering the unit where and when to fire. However, even though direct supervision has its applicability, it is argued that in professional organizations this type of leadership is damaging as professionals demand a high degree of autonomy to perform well (Mintzberg, 1998).

Standardization of skills and mutual adjustment are the most common coordination mechanisms in professional organizations and there could be questions about who controls each situation; for example, is it the manager or the professionals (Mintzberg, 1993, 1998)? Looking at healthcare, this becomes a prominent aspect as it contains multiple perspectives, each of which have their own unique view of their context (Mintzberg, 2017), where each actor comes with their own training and expertise that can create difficulties to understanding others and coordination (Dougherty, 1992). Two important components need to be considered when improving professional organizations, such as healthcare: the detailed knowledge of the context, often supplied by the professionals themselves and the knowledge of how to work with improvements (Batalden and Stoltz, 1995).

Method

As multi-actor contexts are often messy, it is beneficial to have a clear method and previous experience of conducting similar inquiries (Eriksson and Hellström, 2021) as was the case for both authors of the present paper. The research process utilizes a similar approach as that

described by Svensson *et al.* (2015) as interactive research, where the practitioners and researchers are collaborating to solve a joint problem, through diverging and converging in their conceptualization and interpretation of the subject. This oscillating approach between joint and separate problem solving between practitioners and researchers enables the possibility to utilize the strength of being close to the research object (Gyllenhammar *et al.*, 2022) and also see the details as being distant, enabling reflection and deeper theorization (Jeanes and Huzzard, 2014). Moreover, at the points of interaction between practitioners and researchers, observational notes were taken regarding the discussions to further facilitate understanding and the knowledge generated during each practitioner-researcher session. One of the reasons for utilizing an interactive reason approach were due to the possibility to generate applicable knowledge for involved practitioners as well as generating theoretical development (Svensson *et al.*, 2015).

Context

The setting of the research is found in the Swedish public service system and the sick leave insurance system, which is an integrated part of the Swedish healthcare that is essential for the welfare system (Ekberg *et al.*, 2015). The main purpose of the sick leave insurance system is to support and facilitate rehabilitation of inhabitants who have fallen ill to such a degree that they cannot work, this by providing financial support and rehabilitation. Furthermore, the sick leave insurance system has two main actors governing the system: healthcare and the Social Insurance Agency. The basic roles can be briefly described as healthcare assessing the medical state of the inhabitant and the Social insurance agency determining whether the medical state is entitling reimbursement to the inhabitant. However, these actors require several other actors to be able to succeed with the goals of the process, the inhabitant/client/service user, the employer, family and friends of the insured, the community around the service user, The National Board of Health and Welfare, Social service and/or the Public Employment Service. As seen, this system consists of a plethora of actors, a multi-actor and multi-layered context, which is becoming more common in today's society (Bryson *et al.*, 2017).

The Swedish healthcare system is divided into different administrative layers, where the "national level" accounts for legislations, overarching guidelines and principles, which are enforced by a number of government agencies, such as the National Board of Health and Welfare. At a regional level lies the responsibility for coordinating and securing equal healthcare for the population; that is, the administrative responsibility of hospitals and primary care.

Improvement identification process

In Table 1, the process utilized in the research to identify areas in need of improvements is described as a nine-step model, which was inspired by Bradley and Petrolini (1993) combined with the quality management tools of an Affinity diagram and an Interrelationship diagram (Bergman and Klefsjö, 2010). During the process, a larger group consisting of nurses, physicians, administrators and managers from healthcare and administrators from the Social insurance agency contributed through a conference and a survey. There was also a smaller group consisting of managerial staff, a physician, nurses, a representative from the legal department and administrators contributing through workshops. The smaller and larger groups worked actively with the sick leave insurance system on a daily basis.

As the improvement identification process moved between both a larger sample of participants and a smaller group, it allowed for a broader generation of possibilities from the larger sample but also more detailed, in-depth knowledge from the smaller group, ensuring that the data was understood correctly. Furthermore, the data generated from the

Step	Activity; tools	Description	Main purpose	No. Participants
1	Identify themes; Affinity diagram, Interrelationship diagram	Researchers, together with a group of practitioners, identified four themes. Broad problem areas were identified through a workshop to scope the issues of the sick leave insurance system	Probe the problem	11
2	Collect data; Brainstorming	Data were collected through a conference with practitioners who worked with the system daily. The data were in the form of 717 sticky notes	Generate data	220
3	Analyse data; JMP Pro®	The gathered data from the conference, which were in form of sticky notes, were transcribed, analyzed, and grouped into 10 groups using latent semantic analysis and topic analysis in the Text Mining platform in JMP Pro® to conceptualize structural meta-themes	Concentrate and distil data	2
4	Clarify improvement areas and root causes; Affinity diagram	Clarifying issues and root cause was done in a group consisting of practitioners that represented different hierarchical actors in the system plus the researchers. The groupings were discussed, elaborated, and titled with a why/what/how-label representing the deeper meaning of the cluster	Make sense and find root causes of problems and data	8 + 2
5	Clarify interrelationships; Interrelationship diagram	The practitioner team identified the cause-and-effect relationships between the clusters	Deepen understanding and interrelationships. Find potential cause-and-effect	8 + 2
6	Generate potential benefits; Brain-writing, Brainstorming	The practitioner team generated potential benefits tied to resolving each issue	Increase understanding of potential effects	8 + 2
7	Verify results; Survey	The results were validated and confirmed by gathering feedback from the smaller practitioner team in the previous step, but also to the participants of the conference through a survey, presenting the results from Steps 1–5	Verification	8 + 220 (48)
8	Grade benefits; Survey	In a second part of the survey, the participants were asked to grade the most important benefits, generated in step 6, followed by a motivation concerning why it was important	Support prioritization	220 (48)
9	Create improvement suggestions; Survey	The last step aimed to identify what could be done to realize the benefits. This was done through an open question to conference participants in the survey	Find tacit ways for how to start to improve	220 (48)

Table 1.

Overview of improvement identification method

Note(s): The number of participants that responded to the survey was 48 out of a total of 220

improvement identification process were continuously discussed by the researcher as a part of the interactive approach to also contribute to the process, not just observe it (Svensson *et al.*, 2015). Afterward, the data obtained were analyzed in a manner similar to what Hsieh and Shannon (2005) called direct content analysis. Here, key concepts from previous research are identified, which are then used for the initial coding of the data. This allows not only for validation of theory by cross-checking existing categories upon what is empirically observed, but also to extend the theory in the specific context.

In the third step of the improvement identification process, text mining was done using the bag of words approach, which involves counting the words but ignoring their order, except for phrases using the in-built procedure in the software JMP Pro. “A Document Term Matrix” (DTM) was developed using a three-step process of (Klimberg and McCullough, 2016):

- (1) Tokenizing – homogenizing and recoding words, applying stemming rules, etc.
- (2) Phrasing – combining words into specific phrases
- (3) Terming – removal of general words not useful as terms

A latent semantic analysis (LSA) of the DTM using multivariate single value decomposition (SVD) and VARIMAX rotation (factor analysis) resulted in an output of 10 groupings (in JMP Pro called Topics) that contain the most frequent terms of each grouping. The groupings were then examined by the practitioner’s team to elicit a major theme for each group. The process is subjective in that it can be iterated either with fewer or more groupings if necessary. In this case, the default number gave an expanded but limited set of useful distinct descriptions and definitions in order to capture the multidimensional complexity of the overall problem without being too detailed. This was done in order to facilitate evaluation of more nuances of the general problem in the common mindset than would be the case if a more general approach of only Affinity and Interrelationship diagrams had been used.

Method discussion

From a methodological perspective, two major benefits of the described research process in Table 1. First, the generation of a palette consisting of interconnected improvement areas and how they support the overall objectives and second, the from-within emerging picture of the system, regarding terms and concepts in a structure that fortifies the common cross-disciplinary language among the practitioners. That is, a common picture to clarify individual roles and connections in a united manor. Furthermore, the holistic picture, which is often difficult to achieve in multi-actor contexts (Bryson *et al.*, 2017), facilitates cooperation and creates a guide for daily decisions and prioritizations in the big picture. This is particularly important for an intangible supporting process with vague overall improvement objectives that suffers from fragmentation and silos found in the welfare and public sector (Eriksson *et al.*, 2020; Quist and Fransson, 2014).

An interesting aspect of the combined method is that it gives the topics a richer and deeper meaning. The text mining displays a pattern in the words that is hard for humans to see with such a big data set. However, without the fourth, reflective step by the practitioners, the topic themes/groupings based on only word frequencies were rather shallow. It was not until the practitioners discussed it that the deeper underlying meaning of the groupings emerged. On the other hand, without the topic analysis, many of the nuances between the groupings would probably never been identified. Hereby, the strength of this methodological approach is the combination: text mining can process rich material data sets, but cannot elicit underlying contextual meaning, meanwhile practitioners cannot process such rich material data sets but are capable of seeing the semantic relationships.

Results and analysis

This section is structured in the same order as the improvement identification method presented in [Table 1](#) and relates the results to theory. The *first step* had a common denominator, which concerned the issue of “What can I, my organization, and we together do to improve the daily work within the sick leave insurance system?” which served to start probing the problem.

The result posed in Step 1 allowed the generation of data in *Step 2* to focus on improvements and not problem; examples can be seen in [Table 2](#). The sticky notes generated during Step 2 included more general suggestions that might be difficult to implement directly as they were too vague, but also more specific recommendations were written, which allowed for more concrete actions.

The software-generated themes in *Step 3* were used to find root causes in *Step 4*, which can be seen in [Table 2](#). As the root cause was discussed and later clarified and interrelated, there were also discussions regarding who or which organization had a mandate to act upon the problem, but also who would benefit from it. Interestingly, it was seen that those with a mandate to act upon a problem were not always the ones to benefit from the solution but could in fact see the solution as a burden. For example, responsibilities might need to be shifted and tasks assigned to other actors to minimize coordination costs.

As *Step 5* was conducted, nuances of the identified problems became clearer and a consensus of the problems started to form. The breakthrough took place when the group realized that the improvement areas and their benefits could be classified in three layers, which were named operational, organizational and governance. The operational level focused on the individual actor and at the location where the actual work was performed. The organizational level zoomed out from the operations and regarded the supporting structures enabling the operations, such as the administration and management at a hospital, but also coordination with other actors or organizations, such as the Social Security Agency. Finally, the governance level regarded the underlying structures and the foundations for the system. This third level was where political decisions and governmental agencies set the scene for the sick leave insurance process. This three-level distinction emerged as a result of discussions where problems areas at first glance seemed to be similar, but when the meaning was to be clarified, it resulted in different pictures of where in the sick leave insurance system they belonged. Here, the three levels helped to clarify and separate problems areas, both in terms of context and ownership.

Furthermore, as interrelationships were formed between the improvement areas and the benefits, a “flow” were created from the governance level through the organizational and towards the operational, similar to that depicted in [Figure 1](#). Moreover, as all improvement areas were connected to each other, it clarified their interconnectedness, where the output of one was seen to be the input of another. The chances of success with one isolated initiative are strongly dependent on other improvement areas, both logically before and after in the chain of events. However, it also visualized what potential benefits could be achieved if the preceding improvement area was addressed with a connected improvement strategy. This further supported what was found in Step 4, that the mandate to act and the potential benefit were not always co-located in the system.

At the end of the discussion regarding benefits in *Step 6*, overarching results were identified for each level that is, results that could be achieved if all improvement areas were to be solved in the correct order. These overarching results were manifested as statements such as “increased public health” at the governance level, “lower costs for organizations working with sick leave insurance” at the organizational level and “more satisfied employees” at the operational level.

In the *seventh step* the survey verified the results from the previous steps in the improvement identification process, but also highlighted important aspects and allowed for directed improvement suggestions tied to the root causes. Through statements such as

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Theme	Description (created in step 4) – results from topic analysis	Basic statements (sample of statements generated in step 2) – prior to topic analysis	Level
1	Common concept definitions driven by a clear facilitator role	<ul style="list-style-type: none"> • Involve employers at an early stage. In all cases, emphasize the importance of the patient maintaining contact with the employer. Clarify that sick leave insurance is based on the fact that someone is not working due to illness • Find/create forums to raise the issue of sick leave insurance and work-oriented rehabilitation 	Organizational level
2	Underlying infrastructure must come <i>first</i> and drive the development of the process	<ul style="list-style-type: none"> • Developed routines between different authorities, The Social Insurance Agency, The Public Employment Service and The Social Services. Today you are dependent on personal contacts • Collaboration and coordination internally and between organizations and professions 	Governance level
3	Standardized ways of working to create security and opportunity for the individual (working within the sick leave insurance system) to do a good job (and get recognition for it)	<ul style="list-style-type: none"> • Clarity. How do we work in this unit? Need a unified goal • Acquire consensus, clarity of the internal structure of the unit, in terms of the sick leave insurance system, also clarify the different roles 	Governance level
4	Distribution of responsibilities: Need for descriptions of methods and routines for increased clarity regarding the division of responsibilities for and between actors in medical and work-oriented rehabilitation	<ul style="list-style-type: none"> • Clear structure and process and knowledge for actors to be able to help the person on sick leave insurance through the process • Regarding organization, structure, and management: Consultant with expert knowledge in insurance medicine that you can consult with, as you can with other medical issues (but improve your own knowledge at each consultant contact) 	Governance level
5	Knowledge of process: A clear process for sick leave insurance and/or rehabilitation with knowledge and support for actors to meet the patient's needs and increase the patient's participation and the likelihood of success	<ul style="list-style-type: none"> • Work much more patient-centered. Even if there is a business reorganization or lack of resources and time, we must involve the patient much more than we do today. Too many individuals express that they are a "go-between" among different therapists/administrators and that they lack control/influence/participation regarding their own sick leave insurance and rehabilitation process • The work must be done together, where the entire organization has a common view on the sick leave insurance and rehabilitation process 	Operational level

(continued)

Table 2.
Improvement areas
and examples of basic
statements

Theme	Description (created in step 4) – results from topic analysis	Basic statements (sample of statements generated in step 2) – prior to topic analysis	Level
6	Need for support: We have to meet the needs of support and knowledge of those who are involved in insurance medicine, and rehabilitation-oriented assessments and initiatives, regardless of the need for sick leave insurance	<ul style="list-style-type: none"> • Raise the issue of routines for sick leave insurance at the healthcare unit • Review the internal coordination and find routines for collaboration between professions at the healthcare unit to create a clear plan for workforce-related rehabilitation 	Operational level
7	It is important to have a clear division of responsibilities between actors and levels in healthcare	<ul style="list-style-type: none"> • Ensure that we work with the patient at the right level of care (refers to questions about investigation, diagnosis, and treatment where sick leave insurance is included). Today, there are demarcation problems where specialist care refers ongoing patients to the primary care units for assessment and treatment with sick leave insurance. This results in uncertainty regarding the legal aspect, impacts patient safety, and the costs and time wastage for the primary care unit • Teamwork between the professions at the primary care unit. The correct patient is sent to the correct profession – where sick leave insurance is not necessarily the treatment 	Organizational level
8	It is important to know when sick leave insurance is the right measure and what the purpose of sick leave insurance is	<ul style="list-style-type: none"> • Vision and goals: Reduce the number and length of sick leave insurances • The organization must have a common goal and vision of how we can reduce sick leave 	Organizational level
9	It is difficult to ensure that the patient becomes the main character in their own process, both in terms of focus and participation (does the patient want? Is the patient allowed?)	<ul style="list-style-type: none"> • Regarding cooperation and collaboration between businesses and professions. Feedback orally and in writing from employers as soon as a sick certificate comes to them with information about, for example, whether a rehabilitation plan has been made or to signal the need for consultation about the patient • Supply the client with important information regarding the sick leave insurance process and the client's responsibilities. Listen when needed. Ask the correct questions 	Operational level
10	Early health promotion interventions (which do not always include sick leave insurance)	<ul style="list-style-type: none"> • Early interventions to reduce the number of sick leave insurances • Create a plan together with relevant actors and the client when efforts are needed around work-oriented rehabilitation 	Operational level

Table 2.

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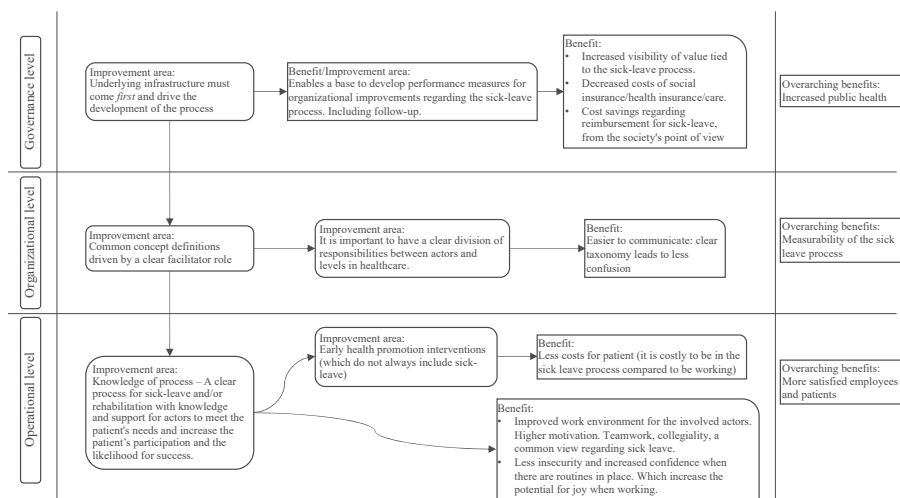


Figure 1. Descriptive picture of how improvement areas and benefits are interconnected at different levels

Note(s): Vertical axis shows the level of the system, meanwhile the arrows show the sequence

“The ‘higher levels’ have to come closer to the ‘daily work and the operational level’ to enable understanding of what interventions are done and where resources are needed”. It was found that the overarching governance level had to be brought closer to the operational level to increase the understanding of how the day-to-day work was performed. Here, it was seen that communication across all levels had to be improved to facilitate hierarchal inter-understanding. Moreover, it was also emphasized that the governance level had to deliver “Better support regarding what they want us to achieve and what goals that should be met” to facilitate improvements at the operational level and also aid with a clear division of labor, guidelines and directives where needed.

However, even though there was a call for standardized ways of working and that there were discussions regarding routines and guidelines to support this during the workshops, the answers in the survey posed an interesting perspective as the question “. . . how well are the routines regarding sick leave insurance followed?”, hinting that there are sometimes routines in place, but they are not applied by the practitioners.

Furthermore, a large proportion of the discussion revolved around the client, or as often used synonymously by healthcare, the patient. Here, it was considered important to heighten the participation of the client in its own rehabilitation process; that is, from being a passive receiver towards an active participant. It was also sought to “bring the improvements closer to the client”; that is, starting the improvement initiative planning from the pull-perspective and from the output/benefit side, which is difficult in a multi-dimensional multi-actor system where all participants are measured and evaluated on varying sets of indicators.

One other improvement area regarded knowledge about how the sick leave insurance process work were to be performed, both from the professionals but also from clients. The professionals were seen to need an understanding of other professions to a wider degree and to have a common language. Here, three explicit suggestions emerged: one to create inter-professional teams to facilitate the process; second, to co-locate the most important actors and third, to create forums at the governance level where actors could update and share information regarding the sick leave insurance system.

Meanwhile, the client was perceived to have difficulty knowing where to go with certain issues and what to expect from different actors. From the survey it was also highlighted that

a concrete way to improve was to educate professionals regarding medical insurance, as it was perceived that there was insufficient understanding regarding this knowledge area to support the client.

To further understand the results from the improvement identification process described in [Table 1](#), [Table 3](#) is exemplifying how the areas are enabling the five coordination mechanisms described by [Mintzberg \(1993\)](#). The improvement areas are also separated upon the emerged empirical levels.

Notably, all mechanisms are represented in the empirical material except for standardization of outputs. Moreover, the organizational level has no improvement area tied to standardized work process and is the only level that has the mechanism “direct supervision” tied to any improvement area.

Discussion

This chapter puts forward eight propositions to serve the purpose *to increase the understanding of how improvements can be facilitated in a multi-actor public service system*, filling the research gap displayed by [Gyllenhammar et al. \(2022\)](#). This is done by addressing the first research question (RQ) “*What hinders a joint understanding of improvements and their interconnections in a multi-actor public service system?*” followed by the second RQ “*How can the joint understanding regarding improvements be enhanced in order to support prioritisation?*”.

Facilitating joint understanding of improvements in multi-actor public services

One of the issues related to improving public service systems is the context of multiple perspectives that have to be addressed ([Bryson et al., 2021](#)) and that a benefit for one actor can have negative implications for another ([Geuijen et al., 2017](#); [Prebble, 2021](#)). During the

	Governance	Organizational	Operational
Mutual adjustment	Distribution of responsibilities	Common language and concepts	Ensure that the patient is the main person (with regard to participation, not in management) of his/her own process. And that the patients' needs are in of focus (Not found in empirics)
Direct supervision	(Not found in empirics)	A clear facilitator leading the process (Not found in empirics)	(Not found in empirics)
Standardization of work process	Underlying infrastructure supporting process development		A clear process for sick leave and/or rehabilitation, where actors have the support and knowledge needed to meet the needs of the patient and increase patients' participation (Not found in empirics)
Standardization of output	(Not found in empirics)	(Not found in empirics)	(Not found in empirics)
Standardization of skills	(Not found in empirics)	To know when sick leave insurance is the right measure to solve the problem and to know the intended purpose of the sick leave insurance	Meet the needs of knowledge and support for those working with insurance medicine

Table 3. Examples of how improvement areas are enabling the five coordination mechanisms of [Mintzberg \(1993\)](#)

study, the different levels that emerged and enabled classification of improvements could be seen to reduce the complexity, as understanding of the system increases and hereby the number of known components affecting the system becomes clearer. To elaborate further, while one area of improvement might not be seen as either complex or complicated at first glance, when zooming out and acknowledging the broader context, the interconnectedness shows another story of barriers that hinders the realization of benefits and potentially create negative consequences for other actors. This hidden complexity for an improvement, which seems simple but is not, would arguably increase the level of frustration when trying to improve, leaving the practitioners with different views of the problem and what actions to take. Hence, a first step to resolve this tension is to address and acknowledge what type of situation that is present and allow for multiple perspectives to be seen as this minimizes the risk of sub-optimization and enables a unification of views (Camillus, 2008; Snowden and Boone, 2007).

Furthermore, it can also be argued that each level has its own contextual knowledge and, therefore – similarly to what Batalden and Stoltz (1995) argued regarding improvements in professional organizations such as healthcare – requires knowledge about the level plus the knowledge of improvements to succeed with improvements. Therefore, in the setting of public services with multiple levels, it may require several types of contextual knowledge to realize a benefit, as improvements needs to come from within and be made at several levels (Nyström *et al.*, 2018).

This leads to the first and the second proposition.

Proposition 1. The aspect of interconnectedness between improvements areas and a requirement of detailed knowledge at each level of the system create a difficult situation for improving public service systems.

Proposition 2. Hidden benefits and obscured barriers are hindering the identification of improvement areas

However, even if it can be perceived as a complex and insurmountable task to improve a public service system, addressing the aforementioned issues in proposition 1, makes it possible to reduce the complexity, making the problem complicated rather than complex and minimizing the risk of suboptimization (Snowden and Boone, 2007).

As mentioned in the results, there is an absence of “standardization of outputs” in the empiric material, which can be due to several reasons. Firstly, considering that value to the public shifts between actors and is contingent (Bryson *et al.*, 2017; Geuijen *et al.*, 2017), it might be either difficult or even impossible to standardize the output due to that the same result is not sought by the actors in the public service system as there are no shared goal to facilitate coordination (Gittel and Douglass, 2012). Thirdly, if the outputs are to be standardized, there is a risk of negative effects for those actors who are not considered. Fourthly, it is possible that the outputs that are realistic to standardize have already been standardized, meaning there is no need for an area of improvement supported by this mechanism. Hence, the aspect of standardization of outputs should be investigated further to enable clarification.

Furthermore, even though there are some improvement areas that might benefit from direct supervision, it can be a dangerous path in professional organizations as these organizations require a high degree of autonomy in order to be able to perform well (Mintzberg, 1998). Meanwhile, when it comes to direct supervision, which is only found at the organizational level in the public service system, the practitioners do not intend for the supervisor to be distant, but it is wished to be someone who is heavily engaged and close to the daily work in the system. This implies that even though a supervisory role is wished for, it is not centralization of power that is sought, but rather a decentralization of power where

the supervisor is closer to the operations, where leadership is found at all levels of the organizational system (Crosby and Bryson, 2010).

Another aspect is that some improvement areas are addressing standardization of skills, and most of these are located at the organizational level and none at the governance level. Hence, the knowledge of the professions are needed at the organizational and operational levels of the system. This is also seen from the request by the practitioners to move the governing agencies “closer to reality” as this would allow a greater understanding of the professions for those setting the directives of the system. Moreover, shared knowledge and understanding has to be acquired by those working within the processes and between the different actors to facilitate coordination (Claggett and Karahanna, 2018). Here, the creation of cross-professional teams, co-location of actors and exposure for other professions were suggestions proposed by the practitioners, which are also aspects supported by literature to facilitate collaboration between professions and different organizational parts (e.g. Beverland *et al.*, 2016).

This leads to [propositions 3–5](#):

Proposition 3. The absence of improvement areas tied to standardization of output can be due to a number of reasons. However, more research is required to clarify this issue.

Proposition 4. To facilitate improvements in public service systems, supervisors and/or decision-makers are suggested to be closer to potential improvement areas and hence present at all organizational levels of the organizational system.

Proposition 5. By crossing organizational, professional and hierarchical borders, where cross-professional teams, co-location, and exposure of others are tools, which can support a unified picture of the system and facilitate prioritization of improvement areas.

Prioritization of improvement areas in multi-actor public services

Looking at the system as a whole, guidelines supporting processes development are needed from the governance level. Firstly, to support the visualization of the interconnectedness of improvement areas at all levels of the system, as this sets the basis to align all involved actors and facilitate prioritization. Secondly, to enable more detailed guidance for actors at every level of the system, supporting further development down the hierarchy and allowing tailoring towards each specific context. Thirdly, this addresses the need for standardized processes at the right level that allows professions to develop necessary skills; that is, also utilizing the mechanism of standardized processes to enable standardization of skills.

Furthermore, to clarify the uncertainty regarding boundaries between organizations, actors and professions, the governance level needs more clarity regarding responsibilities and accountability, or by the taxonomy used by Claggett and Karahanna (2018) structural actor selection. However, there is a danger of standardizing too much at this level, as excessive standardization tends to dampen the capability to explore new opportunities and to innovate (Benner and Tushman, 2003).

This leads to [proposition 6](#).

Proposition 6. Agreed and known routines and guidelines in combination with defined actor selection supports prioritization of improvement areas where boundaries between organizations, actors and professions are vague.

As the improvement areas build on each other, which is exemplified by the arrows in [Figure 1](#), a sequence can be found for the improvement area tied to coordination mechanisms and on which level it is located in the system. An example for such a sequence is found in [Figure 2](#). More generally speaking, the improvement areas that regarded standardization of work

Facilitating improvements in public service systems

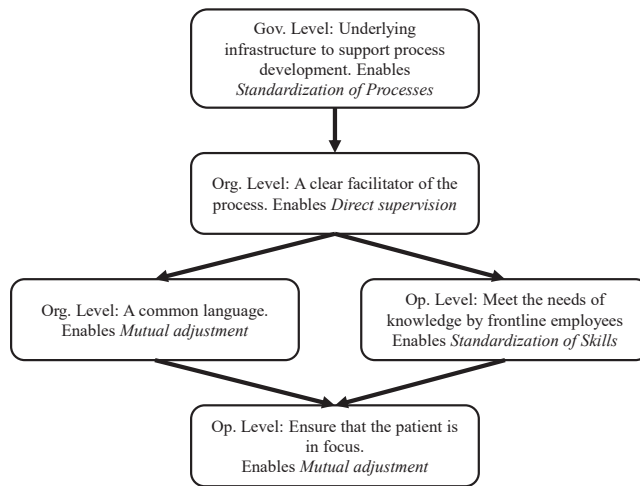


Figure 2. Example of sequence of improvement areas

processes are at the start of the flow and the practitioners described these improvement areas as those that lay the foundation for the rest of the system. This foundation was also argued to facilitate the measurement of processes allowing for further process improvements, but also to enable the improvement areas that addressed direct supervision, standardization of skills and mutual adjustment.

Looking at the coordination mechanisms, standardization of work processes and outcomes are two mechanisms that, in many cases, are the simplest to implement (Mintzberg, 1993); this can arguably be different in the context of a public service system where there are whole nations involved in the process and in achieving the outcome (Prebble, 2021). Moreover, similar to standardization of work processes, standardization of outcomes stabilizes one end of the workflow, hence allowing for other mechanisms to be implemented. Direct supervision has either an outcome to steer towards or a process to follow. Standardization of skills can be achieved as knowledge of what to achieve or knowledge of how to do things are known. Meanwhile, mutual adjustment is supported as the fixed parameters allow for adjustments in the tacit details of complex work tasks. Furthermore, the empirics show that mutual adjustment is only found in the improvement areas at the end of the flows created by the practitioners (such as ensuring that the patient is in focus), which corresponds to Mintzberg's (1993) claim that this mechanism occurs in the most basic but also the most complicated contexts when the other mechanisms are not applicable.

From an improvement perspective, one can argue that mutual adjustment and standardization of skills are the mechanisms that actually support continuous improvement and learning in public service systems. This as these are the mechanisms that are steered by shared goals and also have a degree of freedom, allowing for deviation of how things are done and experimentation – two important aspects of improving organizations (Thomke, 2020). Furthermore, it is also minimizing the risk of goal ambiguity and fosters an appropriate reward system, which is minimizing the risk of failures in improvement projects (Antony and Gupta, 2019).

There is also a flow to consider when it comes to quality improvement tools, process improvements and continuous improvements (Matthews and Marzec, 2017). As the present study has shown, quality improvement tools have been used to identify improvement areas. Moreover, looking at the sequential aspect of the improvement areas (see Figure 2), the beginning of the flow regards process improvements; meanwhile, as argued previously, the improvement areas found later in the flow are the basis for continuous improvements.

To summarize, it is proposed that there is a sequential order of the coordination mechanisms to enable improvements, as seen in Figure 3. However, as knowledge is developed during continuous improvements it can facilitate the understanding of the context creating a feedback loop to the beginning of the flow.

This leads to proposition 7.

Proposition 7. A sequential order can be useful to consider for the improvement areas to understand prioritization of improvements in a public service system.

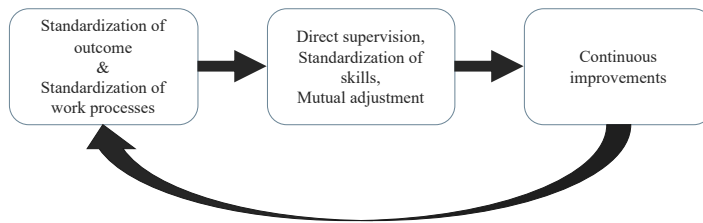
And proposition 8.

Proposition 8. In some instances there is a need to prioritize several improvement areas in a sequential manner before it is possible to succeed with continuous improvements in public services.

Conclusion and further research

This article contributes to the understanding of how improvements can be facilitated in a multi-actor public service system by elaborating on the aspect of joint understanding, interconnectedness and prioritization of improvement areas. Eight propositions are presented and in Table 4 where their connection to each RQ is also shown.

Figure 3. Sequential order of coordination mechanisms for achieving continuous improvements



Number	Proposition	RQ
1	The aspect of interconnectedness between improvements areas and a requirement of detailed knowledge at each level of the system create a difficult situation for understanding improvement areas in public service systems	1
2	Hidden benefits and obscured barriers are hindering the identification of improvement areas	1
3	The absence of improvement areas tied to standardization of output can be due to a number of reasons. However, more research is required to clarify this issue	1
4	To facilitate improvements in public service systems, supervisors and/or decisionmakers are suggested to be closer to potential improvement areas and hence present at all organizational levels of the organizational system	1
5	By crossing organizational, professional, and hierarchical borders; where cross-professional teams, co-location, and exposure of others are tools, which can support a unified picture of the system and facilitate prioritization of improvement areas	1 and 2
6	Agreed and known routines and guidelines in combination with defined actor selection supports prioritizing improvement areas where boundaries between organizations, actors, and professions are vague	1 and 2
7	A sequential order can be useful to consider for the improvement areas to understand prioritization of improvements in a public service system	2
8	In some instances there is a need to prioritize several improvement areas in a sequential manner before it is possible to succeed with continuous improvements in public services	2

Table 4. Propositions and RQs

An interesting aspect to highlight is that improvement areas are interconnected, and a sequential order is suggested to facilitate prioritization and success of the improvements. This aspect is especially important since it is found that improvement areas and their benefits are not always located at the same place of the public service system. For example, an improvement might have to be done at the governance level to enable a benefit at the operational level.

The article also contributes by utilizing an improvement identification method, showing a process for achieving a unified picture of problems, improvements, and prioritizations in a public service system. Furthermore, the article highlighted aspects for practitioners such as the need for a more structured actor selection, the risk of suboptimization due to unknown effect on other actors and the importance of shared knowledge between actors. Lastly, a model was proposed to envision the importance of sequential order improvements.

However, further research is still needed to test the sequential order of improvements, which might be different in other contexts. To enable further understanding, future research is also suggested to address how different roles and actors relate to improvements in the system, regarding internal and external customers, as well as stakeholders. Moreover, there is a need for more empirical evidence and research for how the process of improving and coordination mechanisms works within each level, but also between levels in a public service system. Another area of interest that could benefit from more investigation is similar cases of public service systems, in order to fully understand how such a complex environment can be improved, especially how conflicting interest of actors affect improvements and benefits. There is also a need to investigate the nuances of standardization. Because the level of standardization can affect the autonomy of the actors in the system, it is vital to find the right level and the role of guidelines, routines and defined work procedures.

Furthermore, the proposed improvement identification process needs to be challenged. Firstly, it can be used in similar complex systems in parallel with a control group using the standard tools from the seven quality management tools. Secondly, it should be applied in other contexts that differ in complexity from the studied public service system, such as within the private sector or industry, in order to validate its effectiveness.

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