

# Method for Understanding Obstacles for Health Information Management in a Therapeutic Praxis

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## Abstract

Focus on Collect Once Use many Times is essential and increasing in healthcare including occupational- and physical therapy. However, poor data quality and documentation praxis challenges this regime and compromises data reuse for quality assurance and research. Participatory Action Research (PAR) was applied to improve documentation praxis in a municipal therapeutic unit hence improve data quality. The method was validated through semi-structured interviews and findings revealed following barriers a) contextual practicalities, b) contradictions between professional experience and evidence and c) low involvement from organization managers. In conclusion, the implementation of new documentation praxis using PAR is relevant; however, successful implementation requires time and several loops of intervention.

## Keywords

Health Information Management, Physical Therapy, Computerized Medical Records, Informatics, Information Science.

## 1 INTRODUCTION

Clinical praxis is in a continuous development process, as evidence-based clinical praxis (EBP) requires both professional experience and constant adaptations to changes in the organization and external demands [1,2]. To meet the demands for evidence-based praxis, high quality data suitable for research and quality assessment is needed. However, in a therapeutic point of view, data quality may be equivalent to the degree of relevance of the data for the individual therapist and consequently challenging data quality in the therapeutic Electronic Health Record (EHR) [3]. Hence, in clinical praxis, to ensure high data quality can be difficult and patient safety may be jeopardized [4].

An approach to making ends meet between research and clinical praxis may be to implement the Collect Once Use Many Times (COUMT) paradigm [3]. However, for the paradigm to be applicable in a therapeutic EHR, a thorough implementation process is needed to ensure that documentation criteria and guidelines are understood, accepted and met [5]. How this is done efficiently, is ambiguous, as every organization is different in culture, local organization, assignments and personnel [6]. One promising approach may be to apply Participatory Action Research (PAR), which is recognized as a useful method in domestic health research and implementation studies. PAR has the potential to involve and empower healthcare professionals to obtain increased control over their daily clinical praxis [6,7]. This paper aims to investigate how PAR can be applied as study design and describes the method developed during an implementation project of a new documentation praxis

for optimizing data quality in the therapeutic EHR in a municipal therapeutic team in Jutland, Denmark.

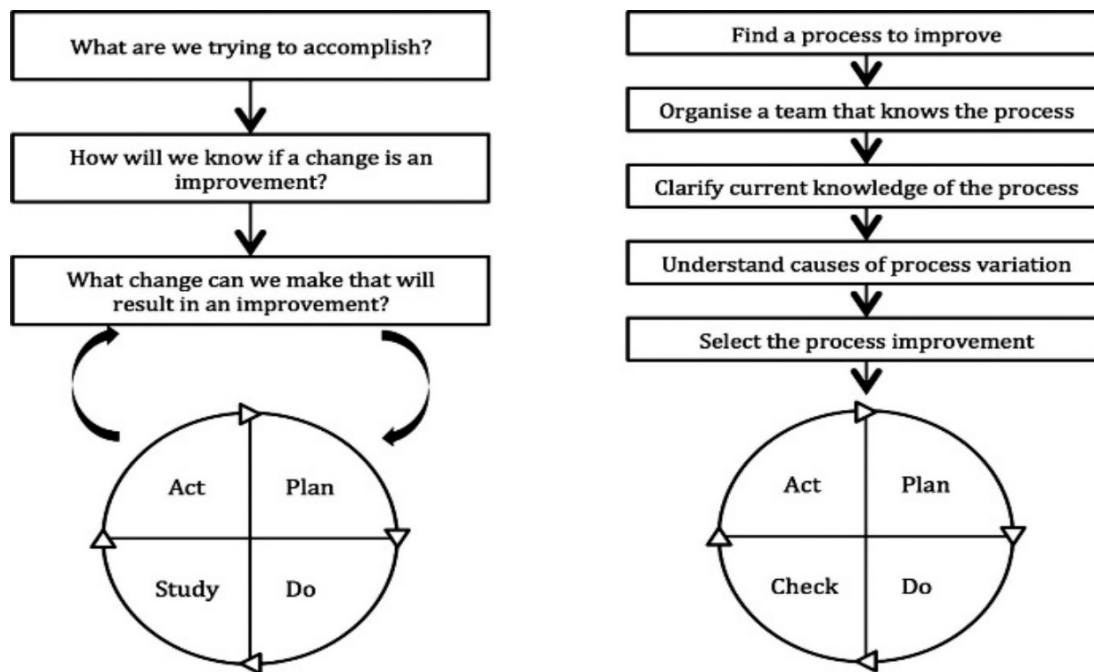
## 2 METHODS

PAR design was used including a plan-do-study-act model (PDSA) and semi-structured interviews was performed to evaluate each loop of the PDSA. PAR draws on the paradigms of critical theory and constructivism and uses a range of qualitative and quantitative methods [7]. To investigate how PAR can be applied as study design, multiple loops of interaction and adaptation are required [8]. Thus, a collaborative, cyclical and reflective inquiry design is chosen that focuses on the improvement of work practices and understanding of the effect of the research or intervention chosen [6,7]. An illustration of the application of the PDSA method to improve quality in healthcare is shown in figure 1 [9].

### 2.1 The initial steps and formalization of the research process

When initiating at PAR, decisions regarding study terms and conditions for collaboration are necessary not only to formalize and plan the study, but also to create a solid base for collaboration, participation and reflection. Therefore the initiation phase of PAR is of upmost importance [8].

Poor data quality was previously revealed in the municipal therapeutic EHR by Toftdahl et al (2018) [10]. This study analysed both text-based and structural data of the EHR and data quality was defined as data being conform, accurate, complete, and valid [11,12]. The structured analysis revealed relevant documentation of outcome- and base-line measures in



**Figure 1** Plan-do-study-act model, used as model for every learning-loop in the implementation process [9].

approximately half the municipal therapeutic EHRs. Whereas, the text-based analysis revealed these findings to be due to poor conformity, accuracy, completeness, and validity of the data, with data not reflecting the actual clinical assessments. These findings motivated the therapeutic unit to pursue improved data quality by initiating a collaboration with the research group.

The collaboration resulted in a plan for the process of implementation of a new documentation praxis, as illustrated in the left side of figure 1. The interests of the therapeutic team and the researchers were discussed, and common goals were defined leading to the four loops of actions. The research team and the therapeutic team agreed on the following foci in the implementation process; namely, to unify a) the use of validated outcome- and base- line measures according to best evident praxis and b) the data presentation in the EHR.

## 2.2 Plan - Do - Study - Act

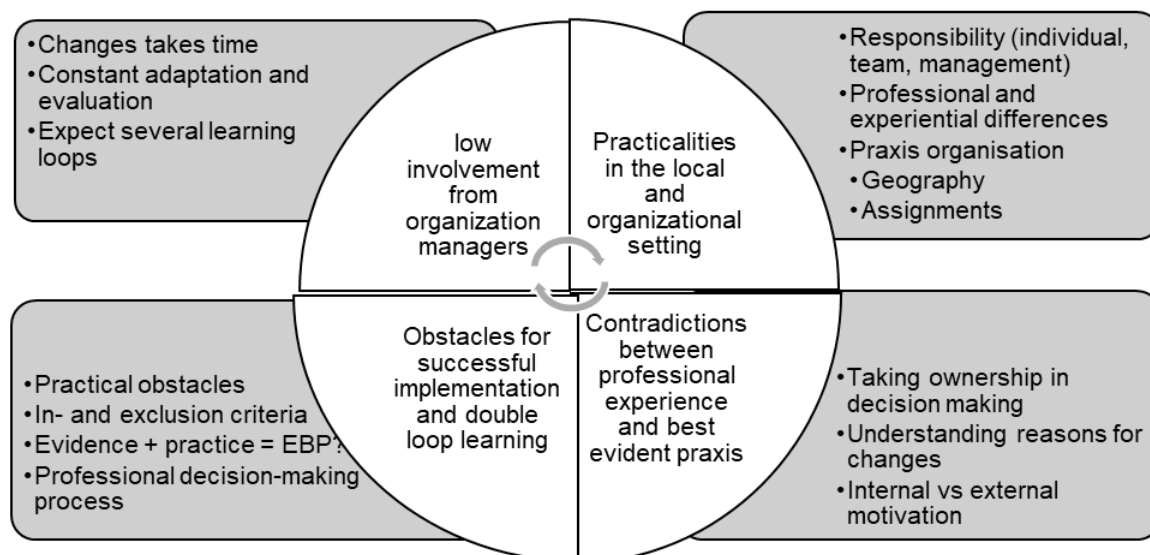
The four PDSA loops were a mix of workshops and education. The loops were planned by the research team, but after every of the four workshops the process was evaluated through semi-structured interviews and evaluations, as illustrated in the right side of figure 1.

### *Example of a PDSA loop*

The third PDSA loop focused on ensuring consensus regarding the outcome- and base-line measurements used in the municipal therapeutic EHR. This loop

revolved around a workshop with the therapists, and the steps of the loop were as follows:

1. Plan: The relevant focus of this loop was based on the evaluation and analysis of the previous workshop and interview findings. In preparation the therapists were asked to list their current use of outcome measures and prepare for the workshop by reading relevant materials provided by the research team e.g. guidelines etc.
2. Do: Workshop:
  - a. A brush-up session regarding guidelines and evidence of best practice within the field held by the researcher initiated the workshop.
  - b. The therapists discussed in small groups the deviations and correlations between current documentational practice and recommended guidelines.
  - c. The results of the group discussions were summarized and suggestions for future documentation practice were presented by the researcher.
  - d. A group discussion lead to an agreement in the therapeutic team on future use of outcome- and base-line measures and documentational practice.
3. Study: The loop was concluded by interviews focusing on an evaluation of the loop and exposure of foci for the following loop.
- Act: The analysis of the above-mentioned interviews guided the planning of the following loop and adjusting the implementation plan accordingly.



**Figure 2** Thematic findings from method evaluation.

### 2.3 Interviews

Three focus group interviews (n =5-8) and three individual interviews were performed. Informants represented maximum diversity, i.e. both occupational- and physical therapists were included as well as therapists from the three geographical locations the team covered daily. Interviews and evaluations were analysed, and continuously integrated in the next loop of action. The content and focus of the four loops were as follows:

1. Barrier analysis to better understand the context, workflow and culture among the therapist team
2. Increasing the understanding of the COUTM regime among the therapist
3. Secure consensus regarding the outcome- and base- line measurements used in the municipal therapeutic EHR.
4. Revise the new documentational praxis to the therapists' experience according to loop three and unify the data presentation in the EHR.

Furthermore, the PAR design was evaluated in the therapeutic team according to the PAR characteristics [6,13]. The therapists were asked how they experienced:

- the collaborative design of the process
- the degree of internal control of the process
- the applicability of the new documentation praxis
- the extent to which the local environments were acknowledged
- if bias during the implementation process were adequately revealed
- the reflective process throughout the intervention
- the internal focus of the implementation process

### 3 FINDINGS

The findings of the semi-structured interviews revealed following four themes (figure 2):

1. Practicalities in the local and organizational setting, e.g. the therapeutic team is divided into three matrices and assesses patients both in- and out house
2. Contradictions between professional experience and best evident praxis, e.g. personal professional experience causes the therapist to exclude patient data based on personal experience or expectations.
3. Obstacles for successful implementation and double loop learning, e.g. double loop learning is challenged by a constantly changing clinical praxis, as high data quality requires that the therapeutic team independently and consecutively adapt their documentational praxis to their actual clinical praxis.
4. Low involvement from organization managers, e.g. consecutive adaptation requires resources and management involvement to ensure a relevant focus within the therapeutic team.

The evaluation of the PAR design revealed that the therapist team found the implementation process relevant. They emphasised the importance of an external facilitator that helped ensure focus and momentum of the implementation. External facilitation also ensured that the new documentation praxis was concurrently adapted and followed best evident praxis. The team; however, expressed frustrations regarding the practical barriers illustrated in figure 2. Barriers such as low management involvement and praxis organisation were regarded as contextual challenges that were beyond their influence.

### 4 DISCUSSION

The analysis shows an interaction between themes, and the evaluation following each loop revealed new barriers within the organisation, the team or the individual therapists. The barriers all created obstacles toward successful implementation of an improved data

quality within the therapeutic unit which are all well-known phenomena in double looped organisational learning [14]. The concurrent revelation of obstacles demonstrates the relevance of using the PAR design during implementation of new practices, as the application of the PAR method allows for continuous adaptation of the design and the methodology. By co-designing the implementation of a new documentational practice, the double loop learning is facilitated. Hopefully, the therapists are hereby better equipped to sustain and concurrently adapt their documentational practice, thereby ensuring future high data quality.

The present findings contrast with implementation studies using summative evaluation models where a deeper understanding of the obstacles towards successful implementation evades. Findings showed that practicalities such as geography, forgetting the new routine and 'who does what'; has a high impact on successful implementation of new practices or routines, e.g. therapists excluded patients from data collection, if they expected the patient to be unable to complete the examination form or when they disagreed with the collected data, based on their initial impression of the patient. Even though the therapists agreed on the challenges regarding the new routines no official agreement on exclusion criteria or handling strategies were decided on, until the next implementation loop (workshop four). This indicates that in a clinical setting with an ongoing professional decision-making processes, the professional decisions may conflict with the purposes of documentation and high data quality, unless the professional decisions are discussed forehand in a broader perspective.

The findings of this study accentuate the relevance of applying the PDSA method for implementation processes as well as the importance of consistency in user- involvement for successful implementation, as show in similar studies [6,7,15]. Therefore, the implementation process needs constant evolving in collaboration between participants, context and clinical setting as an ongoing process. The strength of PAR lies between researchers and participants collaborated effort towards resolving issues in a specific system and setting [6]. PAR requires that action and reflection always goes together, thus praxis cannot be divided into a prior stage of reflection and a subsequent stage of action [16]. The design focuses on three aims: (1) guiding the process of translating research into practice, (2) understanding what influences implementation outcomes and (3) evaluation of the implementation [16]. On these grounds PAR is highly relevant; however, as every step is evaluated and prioritised there is a risk of unintended learning processes or occurrences. In contrast, the ever- evolving loops allows and ensures re-evaluations and adapted actions to be initiated. In conclusion, implementation of new documentation praxis in a clinical setting using PAR is a relevant methodology; however, successful implementation requires time, resources and several loops of intervention throughout the entire process, as

even the most basic practical barriers might challenge a successful implementation.

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