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Current Reasons for Not Using Clinical Pathways in Practice

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Abstract. Clinical pathways are often promoted as the holy grail of efficient healthcare provision. However, our experiences during the Swiss research project *Hospital of the Future* demonstrated that most Swiss hospitals do not implement clinical pathways in the sense of '… a document describing the common process of a multidisciplinary treatment for a particular type of patient'. In this paper, we will discuss reasons for the lack of pathway implementations. We differentiate between three different categories of explanations: (i) organization-specific impediments, (ii) environmental hurdles, and (iii) inherent problems of clinical pathways. Without additional support and regulation by the policy maker, it seems rather unlikely that an increase of pathway implementations will take place in the near-future in Switzerland.

Keywords. Clinical pathway, process-orientation, guidelines

1. Introduction

Streamlining healthcare processes by establishing standards and transparency mechanisms for multidisciplinary treatments has beneficial consequences for the quality and cost-effectiveness of healthcare [1–3]. Clinical pathways provide a systematic way of standardizing processes using workflow documents to support the treatment process for a particular type of patient [4]. They should be distinguished from clinical guidelines, which represent state-of-art diagnosis and treatment recommendations without describing the concrete implementation of the process flow within a healthcare institution.

Process-orientation is nothing new and has been promoted by public institutions such as the Agency for Healthcare Research and Quality (AHRQ). For quality improvement, processes have to be monitored and consciously adapted and AHRQ provides standards for monitoring, documenting and supporting healthcare processes. An example is the process analysis tool for fall prevention that helps finding gaps and problems in the current workflows and helps to change these processes [5].

On the other hand, Swiss hospitals which were leading in the development of clinical pathways [6] have discontinued their development and further use (personal communication with responsible staff). Six Swiss hospitals in our research project [7] had limited use. In this context, we examined the question why clinical pathways are not implemented as often as the literature might suggest.

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2. Methods

The context of our work was the Swiss research project "Hospital of the Future" [7], which aimed at realizing prototypical IT applications for a digitally enhanced future of the Swiss healthcare system. Clinical pathways were an important issue throughout the project, therefore we arranged stakeholder workshops with all project partners to obtain an inventory of existing methods and tools. We used the world-café format to discuss pathway related questions with groups of project partners and a "table host" using flip chart annotations [8]. The questions discussed in the world café are:

a) Do we already have efficient hospital processes even without clinical pathways?
b) How can we assess the costs for developing and implementing pathways?
c) What are the main hurdles for implementing clinical pathways?

In addition, we conducted a systematic PubMed search with the following keywords:

- "clinical pathways"[All Fields] AND "disadvantages"[All Fields]
- "clinical pathways"[All Fields] AND "negative"[All Fields]
- "clinical pathways"[All Fields] AND "barriers"[All Fields]

We were interested in current publications of 2018. The abstracts were screened, and relevant articles included in the study. We analyzed the information in these articles in combination with the world café results.

3. Results

The literature research delivered 0 + 6 + 8 = 14 matches. Four papers were classified as highly relevant [9,10,11,12]. Classification of obstacles for clinical pathway use resulted in three categories: (i) organization-specific impediments, (ii) environmental hurdles, and (iii) inherent problems of clinical pathways (see Figure 1).

3.1. Organization-specific impediments

In [9], a hospital funding reform based on clinical pathways in Ontario, Canada is described, and one main conclusion is that "hospitals sometimes found it easier to focus on containing and standardizing costs of care than on implementing standardized care processes that adhere to best clinical practices." Three factors relevant for clinical pathways were identified: complexity of required changes, internal capacity for organizational changes, and availability of external support to manage change. Without such supports "hospitals may enact quick fixes aimed mainly at preserving budgets, rather than to pursue evidence- and value-based changes in care management."

The workshop results corroborate these findings and add some further insights. Besides missing internal capacity and external support, it is also the lack of will to participate in the process change that constitutes an organizational impediment for the use of clinical pathways. At first, standardizing processes within a clinical pathway creates full transparency, which is frequently not desired. Knowledge and experiences represent some sort of autonomy and health care professionals may not want to disclose their implicit knowledge in order to avoid the feeling of getting more and more interchangeable and to lose their autonomy. Second, almost all hospitals are already process-oriented due to established quality management systems. Additional patient

related restrictions of the working processes have the potential to deteriorate efficiency instead of improving it.

In summary, defining, developing, and implementing clinical pathways is often regarded as too expensive or not feasible, even though the potential advantages are acknowledged. Schechtman et al. [10] investigated emergency department (ED) leader attitudes towards clinical pathways which guide admission decisions. They contacted 135 EDs and received 64 (48%) responses. Only eight sites confirmed that they had implemented clinical care pathways to reduce avoidable admissions.

3.2. Environmental hurdles

Jabbour et al. [11] conducted a qualitative study among 15 community hospitals in Ontario and describe a set of barriers and enablers in the context of clinical pathways for pediatric asthma respectively pediatric vomiting and diarrhea. As environmental factors they identified the attitude of other stakeholders towards pathways, the availability of user-friendly pathway guiding and documentation tools, and funding and public pressure, be it by regulations or through prestige issues. The group used the COM-B model (capability, opportunity, and motivation of the behavior change wheel) for the mapping and Interaction investigation of barriers and enablers. The environmental factors are mainly related to the opportunity part and have thus impact on increase or decrease of capabilities and motivations.

Within the world café, we derived another categorization: local versus trans-sectoral pathways, pressure of health insurance companies to reduce costs, and the integration of pathways within cross-institutional structures like the coming Swiss electronic health record (EHR). The main difference to the COM-B model is the focus on disabling instead of enabling factors. We tried to identify those environmental factors that pose important hurdles. One such factor is the missing network effect when no other external pathway implementations create pressure for internal adoption. As the digital change within the Swiss healthcare system is imminent, it seems important for new pathway implementations that they are part of this change; otherwise, most hospitals have duplicate work which they are not willing or able to handle.

Summarizing, the input from the Swiss healthcare environment lacks strong support for clinical pathways which decreases the motivation for implementation; especially, when other changes/structures are imposed by the policy maker. Pathways should be part of the cross-institutional infrastructure in order to support efficient trans-sectoral healthcare and to avoid additional workload. Without additional support and regulation by the policy maker an increase of pathway implementations in Switzerland seems unlikely in the near future.

3.3. Inherent problems of clinical pathways

Today we assume with some evidence that clinical pathways can and will increase efficiency, quality and cost effectiveness. But more research and better methodology is needed for the assessment of clinical pathway effects. Shanbhag et al. [12] investigated the acceptance of guideline recommendations in heart failure in a systematic review of 38 studies. Although improvements of process quality could be demonstrated in these studies, they were rarely accompanied by improvements in clinical outcome. Especially complex treatments are difficult to standardize with clinical pathways.

Our own workshop confirmed the lack of substantial outcome improvement and provided some additional insight into problems. Frequently, the following central criteria are used when deciding for and against the implementation of clinical pathways for certain types of patients [4]: (i) number of patient expected to be on the pathway; (ii) related average cost; (iii) complexity of the treatment; (iv) availability of quality indicators; (v) definite start and end of the path. Apart from the first two, these criteria are difficult to assess. Furthermore, a division between pathway patients and those without results in restricted treatment freedom in one and full treatment flexibility in the other case; a situation with potential for conflict.

Standardization of processes aims at improving the average, whereas physicians have to account for the idiosyncrasies of patients. Flexibility for multimorbid patients and variability in time and process steps are central for medicine as an art. To a certain degree, pathways can consider that, but the trade-off between flexibility and standardization should be openly discussed. Implementation of clinical pathways requires massive change management in order to obtain benefits.

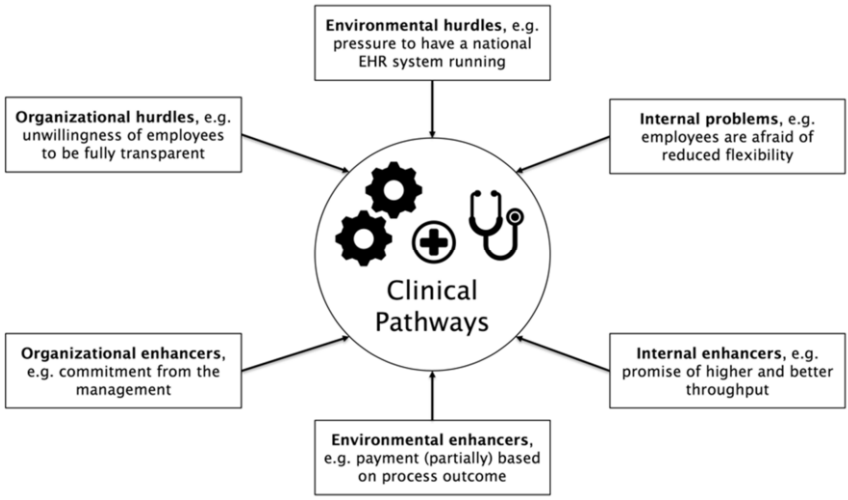

Figure 1. Hurdles and enhancers of clinical pathway implementation.

4. Discussion

Our starting point was the scarce use and sometimes even disregard of clinical pathways in Swiss hospitals. Therefore, we focused on the disadvantages of clinical pathways. We classified the hurdles for implementation into (i) organization-specific impediments, (ii) environmental hurdles, and (iii) inherent problems of clinical pathways.

We fully acknowledge the potential benefits of clinical pathways reported e.g. in [13]:

- Reduced waiting time within and between divisions,
- Reduction of the treatment costs by avoiding duplication of work, waiting times and inefficient use of resources,
- Reduced risk of treatment errors,
- Increased knowledge transfer.

Non-adoption of clinical pathways in practice is not just a matter of inherent disadvantages outweighing the benefits, but rather lacking external and organizational support. If, for example, clinical pathways cannot be easily represented in the hospital documentation systems, and if several different applications are necessary for path support, successful implementation of pathways will fail. A systematic way of process-orientation, which is supported by organizational and technological means, can exploit all of the advantages promised by pathways.

In addition to the disadvantages listed, there are also two further related negative aspects associated with pathways. On the hand, dehumanization of work is a possibility due to reduced room for creativity. A strict time schedule and a list of activities to be done in certain stages can have undesired impacts on job satisfaction. On the other hand, the relationship between health professionals and the patient can get less personal. Patients do not want to be treated as things or process elements, but as persons with dignity. Both aspects, job and patient satisfaction, go hand in hand, which means that pathways should consider room for personal exchange beyond functional requirements, leading to patient- and employee- centered clinical pathways [14].

In summary, there are indeed many reasons for not implementing clinical pathways, but none of them are insurmountable. Inherent problems of clinical pathways can be reduced by allowing more flexibility than in industrial settings, by a transparent discussion culture and by considering change management right from the start. Organization-specific impediments can be tackled, for example, by external counselling, integration of pathways into the quality management systems and by fostering interdisciplinary exchange regarding process design. Finally, environmental hurdles should be addressed by regulators with an integrative view on clinical pathways in the wider context of the digitalization in the healthcare sector.

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