

# Situation Analysis for Clinical Pathways and Teamwork Communication in Healthcare

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## Abstract

**Background/Objectives:** The aim of this paper is to investigate the studies on Clinical Pathways from multidisciplinary domains to realize the situation of Clinical Pathways. Also to predict which discipline should be focused in future research. **Methods/Statistical Analysis:** Content analyses were used to analyze and classified the studies based on its discipline, by using Google Scholar search engine. The strategy used in this study was based on the content methodology. **Findings:** studies come from four disciplines which are medicine, computer science, management and Information system. Medicine domain composed 79% of all studies, and others composed 21%. The timeline of this study is limited to four years, while future research in study Clinical Pathways from different perspectives. These finding are open new researches for informatics people to study Clinical pathways from many perspectives. This is the first study on Clinical Pathways from this perspective.

**Keywords:** Clinical Pathways, Healthcare, Situation Analysis, Teamwork Communication

## 1. Introduction

Despite the increasing the number of studies on Clinical Pathways in medicine domain and in other domains, there is very few studies on Clinical Pathways come from Information Systems. It is a good tool to improve healthcare quality and enhance teamwork communication between medical staff. A set of tools are implemented and used in healthcare domain to improve communication among medical staff such as SBAR (Situation, Background, Assessment, and recommendation), which is a structured communication techniques to standardized communication among medical staff<sup>1</sup>. TeamSTEPPS (Team Strategies and Tools to Enhance Performance and Patient Safety) which provide a framework to<sup>2</sup>, these tools support communication among medical staff from structure in medical staff on communication perspective, but there are shortcomings to provide the information based on Clinical Pathways.

This paper analyzed the situation of Clinical Pathways and suggested a future work about it as a communication

media in healthcare quality. There was few research on teamwork communication in healthcare, and a set of gaps between teamwork and teamwork deficiencies<sup>1</sup>. Thus, this leads for more research from Information System perspective.

The purpose of this paper is to analyze the studies on Clinical Pathways from multidisciplinary domains to predict the future research and how it should going ahead to improve teamwork communication from Information System perspective. This paper proceeds as follows: section II discusses relevant literature; current situation is explained in section III; discussion explained in section IV; at the end conclusion and future work explained in section V.

## 2. Clinical Pathways

According to the European Pathway Association (E-P-A, www.E-P-A.org), it defines a clinical pathway as: "A complex intervention for the mutual decision making and organization of predictable care for a well-defined

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group of patients during a well-defined period.” Clinical pathways are an integrated medical treatment protocols, nursing care plan, and other healthcare activities<sup>1,2</sup>. Clinical pathways support implementing evidence-based care and standardized healthcare treatments. The main objective for clinical pathways is to improve the quality of healthcare, reduce the cost and improve teamwork communication<sup>3</sup>. One of method to improve the quality is to redesign the healthcare process which will adopt in Clinical Pathways to utilize resources<sup>1,2</sup>.

Clinical Pathways has three processes which are medical, administrative and teamwork communication and decision making<sup>4</sup>. These processes facilitate the tasks of medical staff especially physicians and nurses to do their work and enhance healthcare quality as well as teamwork communication.

Many studies done on Clinical Pathways which proved that it can improve and enhanced healthcare quality in term of reduce the length of stay, improve healthcare quality, decrease readmission rate and mortality<sup>5,6</sup>. Moreover Clinical Pathways promote teamwork communication<sup>3,7</sup>.

Teamwork in healthcare is defined by<sup>8</sup> as a dynamic process involving two or more health professionals with complementary backgrounds and skills, sharing common health goals. The main key is about exercising concerted physical and mental effort in assessing, planning, or evaluating patient care. Communication defined as “the process by which information is exchanged between individuals or computers through the use of a commonly accepted set of symbols”<sup>9</sup>. Healthcare communication defined as “art and technique of informing, influencing, and motivating individual, institutional, and public audiences about important health issues”<sup>10,11</sup>. Furthermore, the topics in healthcare communication includes disease prevention, health promotion, healthcare policy, and the business of healthcare as well as enhancement of the quality of life and health of individuals within the community<sup>12,13</sup>. One intervention that can promote teamwork and communication and prevent disease in healthcare is care pathways<sup>14</sup>.

Clinical Pathways processes and its characteristics can support and improve teamwork communication<sup>3,7</sup>. Clinical Pathways provide the medical information based on timeline, also provide comprehensive information about the patients’ situation based on Clinical Pathways functions<sup>15,16</sup>. Consequently Clinical Pathways play key role in promoting teamwork communication in healthcare domain.

### 3. Methodology

A comprehensive literature search strategy was used to identify relevant studies. Google Scholar search engine was used to retrieve the related articles which published in 2011 up 2014, by followed the search strategies, first strategy: (“critical pathways” OR “Clinical Pathways” OR “integrated care pathway” OR “care map”. The methodology also involves second strategy by reading the abstract of the paper and looking to the journal name to classify the domain of the paper. If the paper is written not in English language journal name and domain will be checked.

The strategy used in this studies was based on the content methodology<sup>17</sup>, which is the appropriate methodology which able to seek to analyze data within specific context.

### 4. Current Situation

An investigated study was done on Clinical Pathways for four years between 2011 and 2014, using Google Scholar research engine, to study the trend and which discipline concentrate on Clinical Pathways. Table 1 expresses the studies on Clinical Pathways based on four disciplines.

Table 2 expresses the percentage of Clinical Pathways per domain. Figure 1, 2 and 3 express the trend and distribution research on Clinical Pathways graphically.

### 5. Discussion

Based on this study, there is an increasing trend in research on Clinical Pathways from multidisciplinary domains. The studies from medicine concentrate on providing Clinical Pathways as a tool to improve healthcare quality and reduce the cost<sup>5,6</sup>, while research from computer science concentrate how to develop Clinical Pathways and what are the appropriate methods for developing it<sup>18,19</sup>. In other site of management and decision making concentrate what are the factors that effect on healthcare quality<sup>20</sup>.

Clinical Pathways were provided as a tool for teamwork communication in healthcare as a synchronous type such as mobile, face-to-face. There are few researches from Information system perspective done which appeared in table 2. The percentage of research from Information System perspective about 2% that shows there is a need for more research on Clinical Pathways from many angles, especially from teamwork communication angle.

## 6. Conclusion and Future Work

This research found that there is a trend on Clinical Pathways from multidisciplinary domain. The increasing of studies from multidisciplinary shows that the importance of this topic. The result of this research highlights the gap on Clinical Pathways as a communication tool where a shortage of studies on it from Information System perspective was significant.

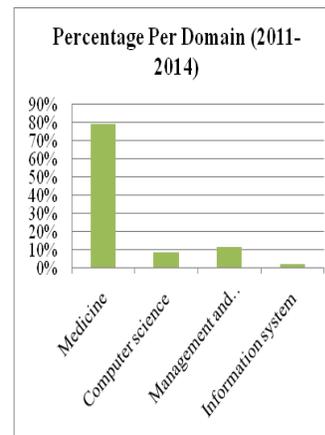
This study opens new areas for future works to study Clinical Pathways from four disciplines which are medicine, computer science, management and Information system.

**Table 1.** Clinical Pathways per domain

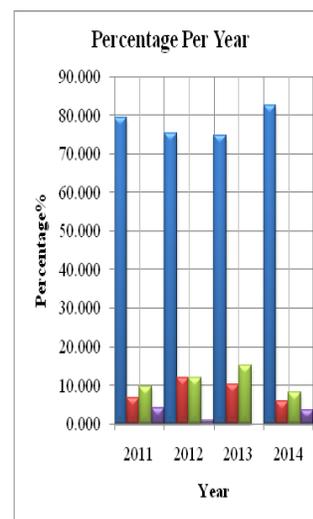
Year	Total papers	Domain	No. of papers/ Domain
2011	100	Medicine	58
		Computer science	5
		Management and decision making	7
		Information system	3
Total papers in English language			73
Total papers in other languages			27
2012	142	Medicine	82
		Computer science	13
		Management and decision making	13
		Information system	1
Total papers in English language			109
Total papers in other languages			33
2013	149	Medicine	95
		Computer science	13
		Management and decision making	19
		Information system	0
Total papers in English language			127
Total papers in other languages			22
2014	172	Medicine	113
		Computer science	8
		Management and decision making	11
		Information system	5
Total papers in English language			137
Total papers in other languages			35

**Table 2.** Percentages of Clinical Pathways per domain

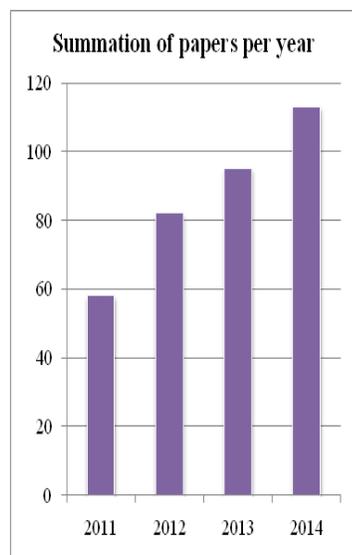
Year	Domain			
	Medicine	Computer science	Management and decision making	Information system
2011	58	5	7	3
2012	82	13	13	1
2013	95	13	19	0
2014	113	8	11	5
Total per domain	348	39	50	9
Percentage per domain	79%	8%	11%	2%
Percentage of all domains versus medicine			21%	



**Figure 1.** Percentage per Domain.



**Figure 2.** Percentage per year.



**Figure 3.** summations of papers per year.

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