

# Adoption of ePrescription in the Czech Republic: Resistance to change or justified worries?

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Summer School of Applied Informatics, Bedřichov, 14-15.9.2018



## 'We must ignore ePrescription': An empirical analysis of Czech physicians' attitudes against eHealth

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**Abstract**—The use of Information Technologies (IT) for drug prescribing and dispensing is commonly referred to as ePrescription. This paper focuses on the negative attitudes of Czech physicians towards the upcoming stage of ePrescription ("e-Receipt") adoption. The goal of this stage had been to make ePrescription mandatory throughout the Czech Republic from January 2018. However, this was reconsidered due to physicians' resistance that culminated in the last few months of 2017. Our qualitative, discourse-oriented analysis focused on this period shows that physicians' criticism can be categorized into five main themes. These are as follows: Deterioration of care; Missing benefits; Medicine is not about IT; High costs of adoption & contract overpricing; State despotism. In addition, the paper contributes to Health IT research by giving some initial hints on the role of specific contextual factors that possibly influence eHealth adoption patterns in the Visegrad group of countries (i.e. Czech Republic, Hungary, Poland, and Slovakia).

**Keywords**—E-Health, E-Prescription, Health IT, Patient IS, Resistance to change, Czech Republic, Visegrad countries, IV

### 1. INTRODUCTION

The use of electronic processes in healthcare (eHealth) promises better healthcare services for patients [1]. Furthermore, policy makers may enjoy an improved visibility into the services' consumption trends [2]. Studying eHealth initiatives' successes and failures is crucial for learning from mistakes of the past in order to improve eHealth implementation processes in the future. In particular, by giving voice to expert and non-expert public, one can get their perspectives on caveats of the examined eHealth solutions. In this paper we focus on ePrescription, which is a "prescriber's ability to electronically send an accurate, error-free and understandable prescription directly to a pharmacy from the point-of-care" [3]. Previous research in health IT, medicine, and pharmacy provides a number of accounts of this eHealth subarea [2], examining it quantitatively [4], qualitatively [5], [6], or with mixed methods [7]. In addition, ePrescribing is closely related to Electronic Health Records (EHR) [8].

However, while the pioneering European countries (e.g. Sweden [4]) have a long experience with eHealth initiatives and related research, the situation is very different in the post-socialist countries of Central Europe – the Visegrad group of countries or the V4 countries (i.e. Czech Republic, Hungary, Poland, and Slovakia). Generally speaking, these countries are behind their Western and Nordic counterparts in driving the

progress towards the successful adoption of eHealth programs [2], which makes them also laggards in ePrescription [9]. Based on this lag, related research is also quite scarce. Importantly, it seems appropriate to assume that these countries represent quite a unique adoption context. This is due to the V4 countries' specific historical backgrounds acquired during the Communism period, resulting in the transitional nature of their healthcare systems at present days [10], [11]. Hence some unique eHealth adoption challenges may arguably emerge in this geographical region. But differently, socialist legacies [12] of the mentioned Central European countries might bring an additional level of complexity during the eHealth implementation process.

The purpose of this paper is to present results of a social inquiry into health IT problems. The focus is on Czech physicians' perceptions of the state-driven eHealth initiative entitled ePrescription (in Czech: "e-Recept"). The topic is very up-to-date. In the last few months of 2017, Czech expert public, patients, and politicians have been widely discussing this one-among-first Czech eHealth solution. Among other effects, these discussions have resulted in public discourses of fear, threats to confidentiality of patient records, and health-care deterioration [13]. We argue that it is important to explore the problem from a scientific perspective, free of as many biases as possible. To the best of our knowledge, the present study is the first to deal with ePrescription in the Czech context.

Even so, it is also important to clarify that the full-scale adoption of ePrescription in the Czech Republic is still at the very beginning, despite some previous efforts in this area [3]. This quite limits the *What?* and *How?* questions one may ask in a research study. In the present piece of research, we focused on Czech physicians' perceptions about the upcoming ePrescription stage, which had been about to make ePrescribing mandatory. We also want to make crystal clear that we have mapped only the dominant discourse related to the last few months prior that major milestone. Still, we are convinced that our analysis provides valuable initial insights. In fact, the paper presents a snapshot of the key period, which has arguably demarcated the future success or failure of the current ePrescription solution in the Czech Republic.

This paper proceeds as follows. Section II provides the historical background of the ePrescription initiative, and explains research methods adopted. Section III presents the research results, which are further discussed in Section IV. Section V concludes the paper.

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Doležel, M. 'We must ignore ePrescription': An empirical analysis of Czech physicians' attitudes against eHealth

Paper accepted for presentation at IEEE HealthCom | 20th International Conference on E-health Networking, Application & Services, 17-20 September 2018, Ostrava, Czech Republic. <http://healthcom2018.ieee-healthcom.org/>

Preprint available at [Researchgate](https://www.researchgate.net/publication/328111111)

# Presentation Outline

1. Motivation
2. Research question and methods
3. Findings
4. Summary and conclusion

# ePrescription

- A “prescriber’s ability to electronically send an accurate, error-free and understandable prescription directly to a pharmacy from the point-of-care” (Kierkegaard, 2013)

# Motivation

- **Existing body of knowledge:** Lack of empirical studies focused on ePrescription in the V4 countries (Czech Republic, Hungary, Poland, Slovakia)
- **Common problem in eHealth programs:** Resistance of key stakeholders (e.g., Hackl et al, 2011)

*Technical soundness of eHealth solutions is not always the only factor of success during the implementation process => we need to understand the causes of resistance and effective coping mechanisms*

Hackl et al.: Why the Hell Do We Need Electronic Health Records?" EHR Acceptance among Physicians in Private Practice in Austria: A Qualitative Study ), Methods of Information in Medicine, 50 (1), 53-61.

# Goal and grounding

- **High-level goal:** To empirically explore the first major eHealth implementation program in the Czech Republic
- **Paradigmatic grounding:** A qualitative study within the tradition of Information Systems research

# Czech ePrescription program

- The history of the ePrescription project (“eRecept”) in the Czech Rep. started in 2007
- The initiative has been driven by the State Institute for Drug Control (SIDC, in Czech: SÚKL)
- In 2011 a first software implementation was ready
  - Plan: to move to full-scale ePrescribing in 2015
  - Reality: In 2014 postponed for 3 years due to strong resistance
- In 2015 a court action against SIDC raised (IP rights), resulting in abandoning the original solution
- In 2017 a new software solution developed (560,000 EUR) and introduced in September
  - Declared as mandatory for all types of prescribing as of 1 January 2018
  - Result: strong physicians’ resistance => the locus of this paper

Research  
Question

*What opinions do Czech physicians have about the coming ePrescription initiative?*



# Research Method

- Exploratory approach - qualitative, interpretive research strategy
  - to map the terrain and understand *What physicians think and how they lay out their arguments*
  - to make sense of their social worlds, not to judge them or articulate doubtless conclusions about the ePrescription initiative

# Data Collection

- Four subsequent issues (9-12/2017) of *Tempus Medicorum*<sup>\*)</sup>, an official, monthly issued communications/magazine of the Czech Medical Chamber
- Identified 33 relevant articles, 4 of them excluded

Included articles	Physicians and pharmacists reject mandatory ePrescription! Why? (9/P1); Promises and reality of electronic prescription project from viewpoint of General Practitioners Association (9/P2); Mandatory electronic prescription: Whose fault is it anyway? (9/P3); Electronic prescription at any cost (9/P4); And what about us – non-working elderly physicians? (9/P5); Open letter for minister (9/P6); Against boisterous and powerful bureaucracy (9/P7); Vote for [political] parties that will revoke ePrescriptions (9/P8).
Excluded articles	Czech Patient Association’s statement on mandatory ePrescriptions (a patient statement); From New Year Czech physicians becoming criminals (a re-published blogpost); Experiment that delays and jeopardizes treatment (the Czech Chamber of Pharmacists’ statement)

<sup>\*)</sup> <http://www.lkcr.cz/czech-medical-chamber-cmc-443.html>

# Data Analysis

- The process of thematic analysis (Braun & Clarke 2006) followed
- Data chunks systematically open coded
- Codes then aggregated into high-level themes – descriptive vs. theoretical
- Themes were defined and named

**Table 1** Phases of thematic analysis

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.

# Results

	Descriptive themes derived from the data
1.	<i>Deterioration of care</i>
2.	<i>Missing benefits</i>
3.	<i>Medicine is not about IT</i>
4.	<i>High costs of adoption and contract overpricing</i>
5.	<i>State despotism</i>

# Theme 1

## Theme 1: Deterioration of care

- First subtheme: lower availability of healthcare services due to (senior) physicians leaving
- Second subtheme: threats to patient safety due to technical features or limitations of the solution

*"A portion of physicians (it is impossible to estimate its size) may quit, being pushed by the transition to ePrescription. [This will make even worse] **by far the biggest problem of Czech healthcare, which is the personnel problem.**"*

*(12/P35; bold in original)*

*It is easier to "produce mistakes by misclicking, and the patient will be unable to check for them"*

*(10/P14)*

## Theme 2

### Theme 2: Missing benefits

- In physicians' opinion, the ePrescription solution is far from ideal because only a basic ePrescribing functionality has been implemented
- Examples of then missing features: EPR, automatic checks of drug interactions, mobile ePrescription, "dispensing done" notifications etc.

*"It is self-evident that the utility of ePrescriptions has remained the same as was 9 years ago. Considering that it [ePrescription] does not bring anything new, and has no principal benefit neither for patient nor for physicians, there is no rational reason for making it mandatory."*

*(9/P2)*

# Theme 3

## Theme 3: Medicine is not about IT

- Stereotypes played a significant role (opinion: young patients could benefit from the solution, but in fact they don't need it)
- IT was perceived as an elusive phenomenon, which has not yet become part neither of medicine, nor Czech society

*"Electronic communication [and ePrescription] might be valuable for young people living in a virtual world. However, those people are mostly healthy, and they thus don't need any medicaments."*

*(12/P38)*

*An organized computing education does not exist at Medical nor Pharmaceutical faculties [= schools]. A negligible percent of the [Czech] society is well versed in IT. The rest of it is just playing with computers, included the ones who pass themselves off as the "IT guys". In this environment, it is impossible to kick off a countrywide paradigm change impacting all citizens."*

*(12/P40)*

# Summary

A strong level of physicians' resistance to adopt ePrescription was observed

Putting this into context, however, the resistance was partly due to the improper implementation strategy and timing chosen by SIDC

Problem: How to balance solution benefits among diverse stakeholder groups?

- for the state (benefit: financial control)
- for some patients (benefit: repeated ePrescribing is easier, digitalization is natural for younger patients)
- for physicians (benefit: ?)



## Key limitations and critique

- Qualitative research – in particular interpretivism – does not reflect reality, just subjective “perceptions of reality”
- This was further strengthened due to using Tempus Medicorum as the source of data
  - Czech Medical Chamber is an important “political player” => selection bias because mainly “moaners” published their opinions
  - Possible solution: subsequent interviews with more diverse group of physicians

## Future research

- The role of paternalism (i.e. the subordination of patients to physicians in terms of differences in status and power of both the groups). Important contextual factor in V4 countries!
- The political dimension of ePrescription initiative
- Will there be a shift in physicians' attitudes as they get familiar with the solution?
- The technical dimension of the solution also deserves future attention

Thank you!

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<https://nb.vse.cz/~qdolmo5/>

Artwork used in this presentation:

<https://www.erecept.cz>