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Original Article/Research

eHealth policy processes from the stakeholders' viewpoint: A qualitative comparison between Austria, Switzerland and Germany



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ARTICLE INFO

Article history: Available online 15 April 2021

Keywords: eHealth Policy Cross-country comparison, qualitative research

ABSTRACT

Objectives: This study aimed at the construction of what the core of eHealth policy making is, offering new perspectives about high priority procedures along the policy making process

Methods: Following Grounded Theory methodology, 59 qualitative telephone interviews with a broad variety of stakeholders from Austria, Switzerland and Germany were conducted

Results: The findings hinted at five priorities of eHealth policy making: strategy, consensus-building, decision-making, implementation and evaluation that emerged from the stakeholders' perception of the eHealth policy. Hereby strategy, consensus-building and implementation gained the highest attention

Conclusions: These findings suggest three high priorities in eHealth policy: 1) developing and pursuing a consistent eHealth strategy, 2) investing time and resources into consensus-building to clear up difficulties early on in the process, 3) governing implementation towards serving patient care through systems fit for practice.

Public Interest Summary: Digitalisation is playing an increasingly crucial role in providing high quality health care. However, different countries have pursued different political paths. In this study, we wanted to know how the stakeholders perceived the political process in their country to identify strengths and weaknesses. We, therefore, conducted interviews about digital health policy with experts from Austria, Switzerland and Germany covering the full spectrum of stakeholders. The findings suggest three political musts: 1) a convincing and coherent strategy followed throughout the entire process, 2) consensus-building among the stakeholders, 3) using "fit for practice" as the yardstick to measure political success.

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Introduction

Digitalisation is changing the delivery of care, and it is taking an essential role in health care across countries worldwide with and without backing from health care policy. While the first governmental initiatives date back more than three decades, political hopes have rapidly increased since the early years of the 21st century. These actions are fueled by expectations to improve the effectiveness, efficiency [1] or to increase patient safety [2] (e.g. by avoiding adverse events of medication [3]). To shorten the expres-

* Corresponding author: Prof. Dr. Ursula Hertha Hübner: University of Applied Sciences Osnabrück, Faculty of Business Management and Social Sciences, Health Informatics Research Group, Caprivistraße 30 A, 49076 Osnabrück, Germany. *E-mail address*: u.huebner@hs-osnabrueck.de (U.H. Hübner). Various countries witness different degrees of success [5–8], e.g. when it comes to eHealth readiness or the quality of electronic data. Comparing the progress in different countries can identify best practice examples. For instance, the study by Zelmer et al. (2017) [9] compared the findings between 38 countries on ICT in health care: They found that countries reveal better eHealth-performances within separated care sectors (e.g. within the hospital sector) than across sector borders. No country performed above

https://doi.org/10.1016/j.hlpt.2021.100505

sion "digitalisation in health care" we will use the established term "eHealth" (eHealth denotes the use of information and communication technology (ICT) in health products, services and processes combined with organisational change in health care systems and new skills, in order to improve health of citizens, efficiency and productivity in health care delivery, and the economic and social value of health [4]).

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Table 1

Comparison on Austria, Switzerland and Germany: eHealth-relevant country features.

	AT	СН	DE
	General characteristics		
Total population (2013) ¹¹	8.5 M	8.1 M	80.6 M
Degree of federalism (scale 1.0-5.0)	5.0	5.0	5.0
Classifications: federal, unitary, decentralised, centralised ¹²	Federal and	Federal and	Federal and
	decentralised	decentralised	decentralised
Welfare type	Social health	Hybrid	Social health
	insurance system	(public + private	insurance system
		elements)	
Hospitals per million population (2016) ¹¹	31.25	33.80	37.64
Health care spending, % GDP ⁴ (EU28: 9.6%)	10.3%	12.3%	11.3%
	eHealth features		
Year: Commencement of the first eHealth legislation ⁵	2012^{13}	2015^{14}	200315
Year: Commencement of the current eHealth legislation	"	**	2019^{16}
Digital-Health-Index ⁷	59.8	40.6	30.0
Proportion of primary care practices: use of electronic systems to	75-100%	50-74%	75-100%
store and manage patient data (2017) ⁹			
Percentage of hospitals with an Electronic Patient Record (2017) ¹⁷	52%	78%	50%
Percentage of hospitals: availability of IT function for	17%	8%	19%
communication with patients (2017) ¹⁷			

average in all the measured indicators and, therefore, every country can still identify areas for improvement [9].

This study focuses on three countries with comparable health systems: Austria (AT), Switzerland (CH) and Germany (DE) that look back to a mixed experience in national eHealth programmes [8,9]: from still no tangible results available (in Germany) to ongoing stepwise success (in Austria) and a comparably new approach (in Switzerland) to implement a national electronic health record. Thus, this study does not look at the high performers but intends to gain insights through a broad mix of input about what went wrong and what went well.

The introduction of eHealth typically takes place in a complex policy context [10]. Table 1 provides a first overview on features in the three selected countries which are relevant in the eHealth context. In particular, eHealth projects may face different demands based on these circumstances:

- Scale for providing eHealth services on a national level: depending on the country size, population size and number of service providers in the system,
- **Complexity** for providing eHealth services on a national level: depending on the diversity in society, the number of potential veto players and the existing structures and mechanisms in the democratic and welfare systems.

Table 1 shows that there is information on the eHealth in all three countries. However, these facts alone do not offer detailed insights that can explain the mechanisms of the status quo from a policy perspective. All three countries have passed eHealth laws in the past, which represent different phases in eHealth policy making: The relevant Austrian eHealth law came into force in 2013 [11], the one from Switzerland in 2015 [12]. Germany's eHealth law dates back to 2003 [13] and was followed by a series of laws. The present study is the first part of a more comprehensive longitudinal examination of eHealth developments in Austria, Switzerland and Germany. It focuses on eHealth from a policy angle.

While it is well known that eHealth policy has to integrate financial [10], organisational [10], technical [14], social [15], educational [16] and legal [17] demands, the challenge for policy makers remains to develop an in-depth understanding about what really matters. This study therefore intended to move away from the analysis of single factors and aimed at the construction of what the core of eHealth policy making is – seen through the lens of the players in the field. In this respect, this research aims to offer new perspectives to this discussion about high priority procedures along the policy making process. Policy processes are hereby understood and defined by the stagist approach which views policy making as a circular series of steps [18] going back to the early works of Lasswell [19,20]. This study incorporates these ideas by primarily referring to the more recent and health care specific work by Roberts et al. [21], who defined a health care reform cycle by six steps: 1) problem definition, 2) diagnosing the causes, 3) policy development, 4) political decision, 5) implementation, and 6) evaluation.

In order to be able to pursue the goal, qualitative methods were considered most appropriate and the research questions were put as open as possible:

- 1) How do stakeholders perceive the eHealth policy process in their country?
- 2) What differences and similarities can be identified between Austria, Switzerland and Germany?

Methods

Study design and sample

The qualitative research design chosen [22] is based on the Constructivist Grounded Theory by Charmaz [23], here seeking to construct the reality of the eHealth policy processes from a bottom up approach, i.e. through interviewing eHealth stakeholders. Grounded Theory methodology is a common approach employed in policy science [24] and health policy research [25]. Following the research questions, the intention was to come up with an interpretation (construction) of the eHealth policy processes grounded in the perception of a wide variety of stakeholders in the three countries. Consequently, the sampling considered stakeholders from Austria, Switzerland and Germany, aiming for experts from different fields and backgrounds. A purposive sampling process was applied relying mostly on internet searches and some personal recommendations. A total of 59 stakeholders (n_{AT} = 20, $n_{CH}=$ 19, $n_{DF}=$ 20) with pertinent expertise on eHealth were recruited (Table 2). Data was collected using a structured interview

Table 2

Key information about the study.

5			
	AT	СН	DE
SAMPLING			
Identified and contacted individuals	66	52	41
Response rate	30.3%	36.5%	48.8%
Total number	20	19	20
MATCHING			
Health care provision	10	10	10
from: inpatient-, outpatient care,			
medical profession, nursing,			
telemedicine			
Industry	3	4	4
from: IT-industry, pharma-industry			
Health care policy/ polity	3	3	3
from: executive-, governmental			
organisations			
Others	4	2	3
from: science, privacy-, patient rights			
advocacy groups			
DATA COLLECTION			
Interview period	11/2017-02/2018	12/2016-02/2017	06/2017-08/2017
Average interview duration	34 min	40 min	38 min
Collected data in total	11.5 h	12.8 h	12.6 h

guideline covering a) the national eHealth status quo, b) the specific conditions in each country, c) the current eHealth legislation and d) the future expectations. Moreover, a few standardised questions were posed. The interview guideline is provided in the Supplementary Material (1). The interviews were conducted via telephone between 2016 and 2018 and resulted in approximately 37 h of audio material which yielded the basis for this analysis. Table 2 provides further information.

Analysis

The recorded audio material was transcribed (transfer of the spoken word into standard orthography). Each interviewee received a copy of their transcript with a request to correct the statements, if necessary. The data was processed via the qualitative research software MAXQDA®. Memo-writing was applied throughout the process to capture preliminary interpretations. The main analysis is based on the coding of the interview data: During the coding process, segments of the interview data were annotated with short descriptions to sort and summarize the data. The coding was performed in two steps: 1) initial coding and 2) focused coding: [23]

In the initial coding cycle (1), the collected data was labelled with descriptive and in vivo codings (short quotes retrieved directly from the interview data). This process led to an inventory of codes and kept an impression of the original statements of the stakeholders (in vivo codings). These initial results were analysed and scanned for interesting codes. Based on these interim findings, specific codes were identified and underwent a focused coding (2). These codes were analysed again and were coded in more detail when deemed appropriate. Due to the amount of the gathered material and the number of generated codes, it was necessary to set priorities in the analysis. An overview of the coding process is provided (Supplementary Material 2).

Results

Overview of the coded data

The initial coding resulted in a coding system comprising 33 different codes. A total of 3512 individual codings were assigned to the transcribed interview data, covering various topics. To find an answer to the research questions, the second, focused coding cycle concentrated on codes which covered the topics of policy pro-

cesses. This re-examination added a total of 23 codes (sub-codes in Fig. 1), refining the initial code system and offering more information. Fig. 1 shows an overview of these new focused codes: "implementation", "strategy", "consensus-building", "decision-making" and "evaluation", which were enriched by additional sub-codes (Fig. 1).

Mapping the policy process steps according to Roberts et al. [21] to the focused codes revealed that "decision-making", "implementation" and "evaluation" corresponded with the process steps in terms of content and naming. "Strategy" and "consensusbuilding" were, however, not directly named as such as distinct steps in the model.

Fig. 1 also shows information about what the stakeholders addressed more precisely: difficulties during "decision-making", "implementation" and "evaluation"; opportunities in "consensusbuilding" and missing strategies in "strategy" were frequently raised. The stakeholders also expressed perceived needs: need for defined objectives, need for coordination, need for continuity particularly regarding "strategy", need for acceptance building in "consensus-building" and the need for evaluation in "evaluation". Positive statements expressed as optimism and partial success in "implementation", chance for "consensus-building" and positive effect of "decision-making" were voiced as well.

eHealth policy processes: country specific perceptions

Overview

This part of the analysis concentrated on those focused codes with the largest number of associated statements, which promised enough responses from all three countries. They were "implementation", "consensus-building" and "strategy". Pursuing the same logic, the analysis of the supplementary sub-codes is presented for those sub-codes with the highest counts of associated statements, i.e. the sub-codes "difficulties" for "implementation", "opportunities for participation" for "consensus-building" and "missing strategy" for "strategy" (Figs. 2-4). Quotes mentioned in the text are referenced in Supplementary Material 3.

Implementation: difficulties

Fig. 2 breaks down the sub-code difficulties in the "implementation" step. It is possible that one sub-code covers more than one topic and, therefore, the cumulated results (n_{AT} = 20 + n_{CH} = 26 + n_{DE} = 39) exceeded the number of sub-codes in Fig. 1 (applies equally for Figs. 3 and 4). In all three countries, the stakeholders



Fig. 1. Results of the 2nd coding cycle: focused codes (center) and the 23 sub-codes (periphery), n = 279 (including data from all three countries: AT, CH, DE).



Fig. 2. Focused code "implementation": country specific results for the sub-code "difficulties".

made remarks about the "implementation" being "unfit for practice" and about "organisational deficits". The following quote from Austria exemplified what "unfit for practice" meant to them:

The actual purpose [of an application] is often neglected. Therefore, technology is implemented as quickly as possible and you do not consider the effects or whether this is meaningful or supportive. (Q2)

Furthermore, the interviewees reported "difficulties" pointing to politicians, saying there was "inadequate political skill" and "inadequate political will" to implement eHealth solutions and they were addressing stakeholders themselves and their "resistance and reluctance" during the implementation. The opinion was salient among German stakeholders wherein the technology at hand was considered "not state of the art":

I don't see a concept. This is, of course, also due to the fact that the entire "E-Health-Gesetz" is based on solutions that were designed twelve or fifteen years ago. (Q6)

Taking a closer look at the most frequently discussed aspect: The statements on difficulties due to solutions or concepts which were "unfit for practice" covered similar topics across the three countries: the challenge of introducing user-friendly, beneficial solutions and the disruptive change associated with eHealth that was

often only met with timid, small steps. Practical requirements and needs of everyday care could not be met in this manner.

However, perceptions in the three groups also differed: Austrian stakeholders criticised that the given concepts lacked transparency and were incomprehensible. This would lead to problems in practice because "it is unclear what causes a problem" and stakeholders "don't know where to start to fix a problem", as one stakeholder described it (Q1). Among the Swiss stakeholders, one expert judged that the necessary preconditions were not yet met: Focusing on the inpatient sector and offering concepts with a low value for other sectors would result in "empty networks" (Q3). Ultimately, this aspect would prevent projects from "taking off properly" (Q4), as one stakeholder put it. German stakeholders mentioned the difficulty that the given solutions were "unfit for practice" because formal implementation on schedule outweighed addressing actual user needs. Besides the criticism, acknowledgements for the political commitment, intentions and awareness of the need for the introduction of eHealth could be found in all three groups.

Consensus-building: opportunities for participation

"Consensus-building" was the second most frequently emerging focused code (Fig. 1). Compared to German and Austrian stakeholders, this focused code occurred more prominently among the



Fig. 3. Focused code "consensus-building": country specific results for the sub-code "opportunities for participation".



Fig. 4. Focused code "strategy": country specific results for the sub-code "missing strategy".

Swiss stakeholders. "Opportunities for participation" was the most common sub-code.

Fig. 3 illustrates different perceptions between the Austrian, Swiss and German stakeholders covering three aspects: "joint development", "articulating interests" and "approval" (and an additional aspect for the Austrian stakeholders: "initiating change"). Again, looking at the statements in detail revealed similarities and differences across the three groups:

Constructive and continued consensus-building can reduce barriers and level the playing field was a common notion across the three countries; it was acknowledged overall that the process of reconciling various (sometimes opposing) interests can be an enduring overall step in the process.

There were also differences: Stakeholders from Austria acknowledged in retrospect that there were enough possibilities for exchange between the representatives of particular interests, they mentioned "working groups" (Q7) or "platforms" (Q8) as organised options to bring together relevant players. Quite comparably, the picture of "everybody sitting at the same table" (Q10) occurred among the Swiss stakeholders. They elaborated a lot on this aspect, and it was usually positively connotated, as the following Swiss quote reflects: We jointly developed the whole concept and the mechanisms of the [Electronic] Patient Dossier in interdisciplinary working groups involving all the players. This way, we responded to concerns everywhere. It was an elaborate, time-consuming process but it paid off in the parliamentary debate that followed. (Q9)

The statements from the German stakeholders on this topic remained vaguer and were less positively connotated while focusing on the difficulties of bringing together multiple players. They then spoke of the "lowest common denominator" (Q11), showing discontent with the outcome of the consensus-building process.

Strategy: Missing strategies

Fig. 4 illustrates the results from breaking down the sub-code "missing strategy". It shows that the German stakeholders were the ones who made most of the statements in this case. Four different aspects were discussed: "lack of orientation", "missing regulations", "missing resources" and "lack of decisiveness". The German stakeholders mainly addressed the "lack of orientation" and "missing regulations", whereas the picture for Austria and Switzerland was more mixed.

Stakeholders from all three countries talked about the responsibility of respective political authorities in terms of "lack of orientation". A common, reoccurring notion was that the lack of a clear idea and concept about the future of eHealth on a macro level would force individual institutions to find their own solutions in everyday care practice: individual innovation was not negatively connotated per se, but, the stakeholders saw the risk of uncoordinated developments ending up in a complex, tangled situation which would be difficult to manage for policy makers. An Austrian stakeholder referred to this situation as "proliferation" (Q12), and a German stakeholder said "everybody is doing their own thing" (Q15). Adding an outcome-perspective to this point, a Swiss stakeholder referred to "unused potentials for patient care" (Q16) based on missing strategies.

In comparison, the point of missing strategies and lack of orientation was more strongly stressed among the German group. This led to a few perceptions deviating from Austria and Switzerland: Some German stakeholders described the situation as more "chaotic" (Q14) than strategic:

There is a lot of [...] politicking in it, a certain speed in the implementation prior to elections, but then the details are not well conceived. The issue is not promoted in the long run either. (Q14)

German stakeholders pointed out that a meaningful eHealth strategy should encompass strategic research concepts to move from "lighthouse projects" (Q17) to concepts for the entire health care system. It was also addressed that German eHealth policy was not learning from past mistakes, instead the political authorities were "muddling through" (Q18) to avoid conflicts.

Discussion

Interpretation

The present study hinted at five priorities of eHealth policy making: strategy, consensus-building, decision-making, implementation and evaluation that emerged from the stakeholders' perception of the eHealth policy in the three countries. Out of these five priorities three domains stood out that can be summarized as followed:

a) The dual face of the eHealth strategy: eHealth policy requires both a reliable top down strategy plus down to earth procedures leading to systems fit for practice. The stakeholders addressed a lack of orientation, missing specification, a lack of decisiveness and a lack of resources assigned to a strategy. At the same time, current approaches are described as unfit for practice. If the responsible authorities do not fulfill the task of mapping out a strategy it would be likely that health care institutions would seek out their own strategies independently. Our analysis thus would lead to the hypothesis that a loss of control of responsible authorities early on in the process may lead to different paths and paces in the development and, consequently, would lead to even more challenging conditions to manage. The need for strategy appears to be independent of the size of the country.

- **b)** The many voices of the stakeholders: Consensus-building is a must but it is also a demanding undertaking due to the different perspectives to be reconciled. The stakeholders addressed many facets. Well-done consensus-building activities can reduce obstacles, as articulated in this study, but this process is highly demanding: The process needs to be structured adequately, all the relevant players must be included and a certain sense of social cohesion to the cause of introducing eHealth may be helpful. A history of consensusbuilding as seen in Switzerland can foster this process.
- **c) Implementation is the yardstick:** Problems during the implementation process bring to light difficulties in the entire eHealth policy process. Many of the challenges addressed under the topic of strategy and consensus-building reoccur in the implementation process. The stakeholders talked about organisational deficits, resistance and reluctance, low political will and skills. The verdict "unfit for practice" was the most frequently mentioned. The analysis leads to the notion that it takes great effort, intent and competencies to incorporate relevant stakeholders (see consensus-building) and their expertise (see unfit for practice implementations) in the process. Blurry objectives from the politically responsible parties (see missing strategies) are ingredients of failure.

The importance of strategies and reaching consensus among stakeholders [15] and the challenge of implementation [10] have been recognized in related research before. The present study corroborates these findings for countries of different size, different healthcare system and different degree of diversity. This study also adds the notion that national eHealth policy has to address these issues right from the beginning and has to carry on pursuing these goals – even if laborious and cumbersome – in order to avoid frictions in the process of making and establishing eHealth policies.

The results can be mapped onto a model of a policy cycle [21] and signify the focal points. While decision-making, implementation and evaluation match three stages of the policy cycle, strategy and consensus-building are not explicitly mentioned in the cycle according to Roberts et al. [21]. To some degree strategy corresponds to stage 1 "problem definition" and stage 2 "diagnosing the causes". Furthermore, stage 3 of "policy development" could involve interest groups, which hints at "consensus-building". Notwithstanding, this cycle misses two high priorities of eHealth policy making that were identified in this study. Our findings concerning strategy are corroborated by a WHO study that identified high priority actions. Among others, they include national eHealth strategies and explicit political commitment [26].

Limitations and strengths

A few limitations must be considered: This research followed the Grounded Theory approach by Charmaz, which is referred to as the "Constructivist Grounded Theory" [23]. It has to be acknowledged that the emerging codes from the data might be biased by the personal and professional background of the involved researchers, other researchers with different backgrounds may have focused on other aspects. Furthermore, the presented results constitute only an excerpt of the collected material. Due to the richness of the statements made by the 59 stakeholders, this study had to focus on the main findings and neglect the other issues voiced. The matching process to generate similar compositions of stakeholders with similar professional backgrounds in the three country samples is a deviation from classical Grounded Theory methodology. However, there are great advantages in having comparable country subsamples: Differences, similarities and deviating core themes can only be identified and analysed on this basis. Limiting the study to Austria, Switzerland and Germany can also be a point for criticism. Nevertheless, the in-depth data collection and analysis required a selection. Moreover, this research provides a point in time observation only, offering no clear understanding of the eHealth developments. To remedy this limitation, follow-up interviews will be conducted with the same stakeholders. This longitudinal observation will offer a better insight into the evolution of eHealth over time.

Since this is a qualitative study, validity and reliability are connotated differently than in quantitative research and we made effort to ensure accuracy and consistency within the research process [27]: We reported potential biases, presented deviating opinions from the predominantly prevailing assessments (e.g. see Fig. 1), participants had a chance to check their transcripts, the entire research process was documented, and the findings were discussed and checked among the authors.

Conclusions

This study explored the stakeholders' perception of eHealth policy processes in Austria, Switzerland and Germany. While countryspecific core themes and peculiarities were visible, the analysis also revealed similarities in the perception of the policy process. Consolidated, this study's findings point out to three high priorities in eHealth policy: 1) developing and pursuing a consistent eHealth strategy, 2) investing time and resources into consensusbuilding to clear up difficulties early on in the process, 3) governing implementation towards serving patient care through systems fit for practice. Mistakes early on in the policy process reverberate and become apparent at the latest during the implementation step. This study contends that strategy development and consensus-building combined with a clear political intent for useful implementations are core elements of the eHealth policy process.

Funding

This study is funded by Lower Saxony, Germany (grant: ZN 3062).

Ethical approval

Not required.

Declaration of Competing Interest

The authors declare no conflict of interest.

Acknowledgements

This study is funded by Lower Saxony, Germany (grant: ZN 3062).

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.hlpt.2021.100505.

CRediT authorship contribution statement

Laura Naumann: Conceptualization, Methodology, Investigation, Resources, Writing – original draft, Writing – review & editing, Visualization, Project administration. **Birgit Babitsch:** Conceptualization, Methodology, Writing – review & editing, Supervision. **Ursula Hertha Hübner:** Conceptualization, Methodology, Writing – review & editing, Supervision, Funding acquisition.

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