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Health networks: actors, professional relationships, and controversies

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Abstract. In recent years international policies have aimed to stimulate the use of information and communication technologies (ICT) in the field of health care. Belgium has also been affected by these developments and, for example, health electronic regional networks ("HNs") are established. Thanks to a qualitative case study we have explored the implementation of such innovations (HN) to better understand how health professionals collaborate through the HN and how the HN affect their relationships. Within the HNs studied a common good unites the actors: the continuity of care for a better quality of care. However behind this objective of continuity of care other individual motivations emerge. Some controversies need also to be resolved in order to achieve cooperative relationships. HNs have notably to take national developments into account. These developments raise the question of the control of medical knowledge and medical practice. Professional issues, and not only practical changes, are involved in these innovations.

Keywords. Health network, innovation, cooperation, professional relationships, electronic health records

1. Background

In recent years international policies have aimed to stimulate the use of information and communication technologies (ICT) in the field of health care and have led to the establishment of health networks [1; 2; 3]. The use of ICT should make it possible to improve coordination and the efficiency and quality of care, thanks to a better exchange and sharing of information between the various health actors [4]. ICT can be an important support for care networks and integrated care, which are also gradually being set up. Belgium has also been affected by these developments: for example, the public health ministry funds local and regional networks ("health network")[2] and a national "eHealth" platform is being set up, in order to improve electronic exchanges of patient data between health practitioners[3]. General practitioners (GPs) can also receive annual financial support from the Sickness and Disability Insurance system for the costs of the software for computerising their patient records.

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[2] https://portal.health.fgov.be/portal/page?_pageid=56,4280388&_dad=portal&_schema=PORTAL

[3] https://portal.health.fgov.be/portal/page?_pageid=56,4280428&_dad=portal&_schema=PORTAL

However, few doctors use their computing tools (such as electronic health records) for medical purposes and for exchanging information concerning their patients with other professionals [1; 4; 5; 6]. The implementation of electronic networks has turned out to face several barriers. Indeed, several studies have suggested that such networks show inconsistent outcomes, which may be related to difficult and variable implementation [1] due, for example, to the preferences of existing support staff, difficulties in integrating systems, [5] and organisational failures [7].

This research explores the implementation of two Belgian health networks (HN), in order to understand how an HN is formed and how physicians collaborate through the HN. In the first phase we followed the actors-partners of the HNs being studied in order to understand the project supported by HNs and the controversies surrounding these HNs. In the second phase of our research (2009) we plan to interview GPs and specialists (as potential users of HNs) to investigate how an HN can be used (or not) by them and their perceptions of these initiatives. A specific research methodology has been worked out. After having explained this methodology, we present our initial results and then discuss them. We finish by drawing conclusions from the first phase of our research and outlining new perspectives for research.

2. Methodology

2.1. Subject: Health networks

This study focuses on a particular form of ICT: the health network. Following international developments, some HN projects are being established in Belgium. These aim to improve the quality of care by developing the electronic exchange of information between health actors (physicians), thereby improving cooperation between actors. The two HNs studied are at the conception and implementation stage. Technically, the data will remain in the original location of creation (a hospital, for example) and only a “master patient index” will be centralised and provide an index for information issued to authorised professionals [8]. Initially, these HNs will be open to all physicians (primary and secondary health care) in their region.

2.2. Approach

The conception and implementation of HNs do not only involve technical issues. Although often neglected, organisational and professional elements are involved before, during, and after the implementation of these technological innovations. Thanks to a qualitative approach, we will be able to understand the process of their implementation, how the actors coordinate their actions in order to participate in the design of the HN, and how they cooperate. The setting-up of an HN raises a series of questions, which a quantitative approach cannot answer.

2.3. Process

In the first phase of our research, the “primary” actors of the HNs studied have been followed: actors that participate in the conception and implementation of the HNs. Data were collected from observation data and thirteen face-to-face semi-structured interviews with primary actors of the HNs (4 general practitioners or GPs, 6 representatives of hospitals, and 2 sponsors) and with non-active actors in the HNs ("negative cases": 1 representative of a hospital). We made sure that the interviews included private, public, and academic hospital representatives. All the actors contacted agreed to participate in the interviews. In addition, they allowed the researcher to participate in their meetings concerning the HN. The interviews were recorded and transcribed, either by the researcher or by a secretary under the supervision of the researcher.

The data were collected and analysed by using a framework developed from grounded theory [9], a qualitative research method that emphasises the generation of the theory from the data collected, thanks to open-coding ("coding" referring to the labelling of key points in the text), axial coding (creating links between the codes, thereby giving rise to new codes), and selective coding (choosing a central code linked with satellite codes) of the material. The investigations developed on the basis of the data collection around the following questions: who are the actors of the HN, what are the goals of the HN, what are the relationships between the actors (e.g. in relation to medical information), and what are the main problems with which the actors are confronted? After the collection of data and the initial empirical analyses, we drew on two major sociological currents: the actor-network theory and the sociology of professions, which help us to understand the emergence of HNs and the process of participation by physicians in HNs.

2.4. Quality control

Some authors have suggested criteria and strategies to improve the rigour of a qualitative design [10; 11]; these strategies should, however, be used with caution [12]. The criteria include credibility and reflexivity. Triangulation is a strategy intended to increase the credibility of our results and implies, for example, combining several techniques, sources of data, and points of view: findings were triangulated from the different data collection methods; we used different sources of data (face-to-face interviews, observation data, writing data); we varied the profile of interviewed actors. With a view to reflexivity, the researchers who participated in the research have varied backgrounds: a physician, an economist, and sociologists. They participated in the working meeting and in each step of the research. An expert committee provided a benchmark for identifying and assessing the relevance of preconceptions.

3. Results

The two HNs studied are focused on primary and secondary health care. They are in the conception and implementation stage, so they are not yet operational for practitioners. These two HNs follow broadly the same logic: do not centralise the data. The data remain in the original location of creation and only a master patient index is centralised [8]. After informed consent of the patients and identification, it will be possible for practitioners to integrate data into their electronic patient records.

3.1. The quality and continuity of care

Within the HNs studied, a project or “common good” [13], unites the interviewed actors around the network: continuity of care for a better quality of care, through access to and sharing of medical information[4].

> *The objective of our network is the objective of the actual physicians, the physicians who treat patients. It is the continuity of care. … we concentrate on the real objective, that is, to treat patients in an appropriate way (public hospital)*

This common good brings together some actors who, a priori, were not required to form an alliance. Indeed some hospitals can be in competition in the health market.

> *There is a lot of competition for us, for our particular hospital. So that is why Mister X wanted to participated in the network. He has a lot of difficulty in attracting patients, as his hospital is in the European market. (private hospital)*

Even if some actors consider that they have not enough time to actively participate in the network for the moment, they still support it: “it is better to be in than to be out.” There is, accordingly, a “transmission” effect of the network, which propagates the necessity of participation in the network in the field of health care.

> *We are not very involved in this project. We are working in our hospital in order to be ready later, to participate at a later date in this network, which is important. I think that all the hospitals of the region that want to provide an excellent service will have to be in the network. (private hospital)*

3.2. Health professionals as primary actors in the health network

At first, some health professionals (GPs and professionals in hospitals), who know each other and have some shared interests, seized the opportunity of a national fund to create an HN. By doing this, they have mobilised all the relevant actors (medical professionals from primary and secondary heath care, at first, but also funders) within a particular geographic territory, interesting and involving them in the building of the network. So the network is maintained thanks to volunteer actors (in a bottom-up configuration). Participation in the HN is not compulsory (unlike in the UK, for example). But the actors respect certain “rules of the games”, such as the national standards *kmher*.

Within an HN one of the actors, a GP, is gradually emerging as the spokesperson of the network and the translator of the objectives of the network to new actors, providing an intelligible link between heterogeneous activities and actors [14]. We have observed that this spokesperson organises and directs the meetings and is an important link with various funders and medical associations. He considers that “*they [other actors in the network] trust me; I have received a mandate to go to the funders, to deliver information*”. During the meetings this spokesperson also plays the role of

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[4] The activity report and the charter of the non-profit organisation that organises an HN confirm this.

mediator in cases of conflict between the network's actors, notably in case of conflicts between hospitals. Several spokespersons can appear for only one HN: the spokesperson of the HN can be chosen according to the actors who he has to meet and according to the social network the potential spokesperson is already invested.

3.3. Relationships between health profession actors

Each individual actor sees particular benefits in collaboration on the objectives of the HN. For example, quality of care means different things to different actors: improving public health (as mentioned in interviews with a GP and an academic hospital) or better follow-up of the patient (making more time for patients and reducing redundant medical procedures, as mentioned by another GP interviewed). For another (public) hospital the network also offers an opportunity to renew its computer system and to align itself with the other hospitals. Two other private hospitals participate in the HN in order to improve their image among GPs: e.g. a hospital has an interest in encouraging GPs to refer patients to it. And a better service provided to GPs can increase the number of patients referred to a particular hospital.

> *We have decided to open our data to the GPs. Otherwise, we run the risk that GPs will not send us any more of their patients. So we are aware that we have to make every conceivable effort to try to be attractive to GPs. It is they who send us their patients. Thus it is clear that we really should rather look after the clientele of general practitioners. (private hospital)*

The objectives and the added value offered by the network need to be repeated often in order to consolidate the network. The adherence of all the actors is repeatedly expressed during meetings. This makes it possible for the actors to unite around the common good of the network.

3.4. Controversies

Some controversies need to be resolved in order to achieve cooperative relationships. These concern, in the first place, matters such as the network's charter (how are the actors represented and how are decisions taken?), the choice of technical solutions, access, and write rights in relation to records. The two HNs quickly adopted a non-centralised solution for the structure of the network: they do not want to create a centralised electronic patient record. After all, the network actors have had to agree on who is authorised to access the records, for how long, etc.

The two HNs do not exist in a vacuum. They have to take national developments into account: the national context plays a role in the development of the network. The success of projects other than the network can influence the progress of the network. Actors of the HNs studied would like to see a national platform looking after the system of access and the security, problems with which all networks are confronted. However the actors must cope with a lack of transparency and communication from actors in other projects such as national eHealth platform.

> *The system of access and the security of the exchange should be set up at a national level so that we do not have problems later in combining all the networks. (private hospital)*

> *We have approached eHealth [national platform] regularly to know if its services were available to us. But we have not received any answers. It is interesting to observe the contempt that they have for initiatives coming from physicians. (public hospital)*

These external influences can hamper the development of HNs, but may also promote it. They can hamper because a national platform should look after the security of networks: security is an issue that involves major costs and national strategic choices (notably in regard to the law about the protection of private data). This partly explains why the regional HNs studied are still in the development phase. Recent developments in the national eHealth platform (formerly "BeHealth") and other national telematics applications such as Ecare[5] (for sickness and disability insurance), however, may lead to increased support from future professional users for regional HNs (in order to oppose these national initiatives). Indeed, some health professionals fear supervision by the sickness and disability insurance system and the health insurers of their data, and thus of their practice.

> *There is the project of Ecare and others projects of the INAMI-RIZIV [sickness and disability insurance authority]; the INAMI-RIZIV is becoming active in this domain. It is surprising. Physicians have the impression of having been swindled by the INAMI-RIZIV. So there is a sort of war that is preparing for [between regional HN and national projects] and with us [the HN] as weapon. (public hospital)*

Finally, there is also controversy about the funding, which is annual and not long-term. This type of funding can put at risk the durability of the project and its monitoring. In particular, the source of funds can be the subject of controversy. For example, some actors do not want health insurers or the sickness and disability insurance system to finance such networks. They fear they might lose their autonomy and also fear that the insurers would gain increasing control over professional practice.

> *I distrust the INAMI-RIZIV [sickness and disability insurance authority]. For me it is an intermediary between the ministry and the health insurers. It is more a supervisory body than an organisation that supports projects. It is not its role. (private hospital)*

3.5. And what about the patients?

Among the actors actively mobilised by the networks, the patient is relatively missing. A legal framework, however, obliges the medical professional to obtain the informed consent of the patient before exchanging information concerning him/her. Currently in the two HNs, patients must give their consent in order to authorise the exchange of their data between professionals and patients will have access to the list of the professionals who have accessed their data [15; 16]. However, direct access by patients to their own data is not yet under consideration.

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[5] Recording system for medical data in relation to certain specific pathologies

4. Discussion

4.1. The HN as an professional obligatory passage point

Thanks to its objectives (quality and continuity of care) the HN tends to become an "obligatory passage point" [17] so that it becomes indispensable: in order to improve the quality and continuity of care, health professionals have to participate in the HN. The two initiatives studied are bottom-up initiatives and this has boosted their potential success: it is health professionals who work on the HN and support it. To consolidate the formation of the network, some "objects" (charter, minutes of meetings, etc.) pass through the network. They can be considered as collective intermediaries that link the actors to each other [13].

4.2. A market of interdependent and distinct parties

As we have observed, it is sometimes necessary to repeat the objectives and reaffirm the adhesion of the members of the HN. Indeed, behind the objective of continuity of care other individual motivations emerge. For example, some actors collaborate with the HN in order to attract more patients and consequently to be more competitive on the health care market. Indeed. health care is in a market of interdependent and distinct parties that struggle for resources, favourable public opinion, territory, and control [18; 19]. These parties have different interests, cultures, and goals that can be in tension with each other, although significant alignments are possible (e.g. around the common good of care continuity); each seeks to advance its own interests [18]. The medical profession is no longer necessarily dominant in the health market. So spontaneous and professional initiatives of an HN can be at the heart of professional issues. The implementation of a professional network and participation in this network can become a means of resisting external constraints and restoring professional dominance.

EHealth platform and initiatives from the sickness and disability insurance authority can be seen as external constraints for the professional actors. Regional networks need some secure processes of identification and authentication of the professional, identification of patients, and need data exchanges to be made secure. A national platform such as eHealth can meet these needs. However, regional networks feel threatened by the way this national platform is being set up: they consider that there has been very little dialogue with the existing networks and with professional associations [20], whereas the regional and local networks were conceived and supported by professionals themselves (top-down configuration *versus* bottom-up configuration). The latter kind of configuration increases the chances of success by decreasing the fear of "big brother" controlling practice. As a consequence, regional networks now have the support of various professional associations and have signed common statements questioning some aspects of the eHealth platform [20].

The history of the eHealth platform reinforces the fear of "big brother" and supervision of practice. Indeed, the platform was conceived on the model of the *Crossroads Bank for Social Security* and by the designer of that Bank. Consequently, some professionals fear links between medical data and social security data. The objectives are also wider than those aimed at by regional networks: support for public policy and exchange of data with health funders. They will have the means to carry out public health analyses thanks to the data collected. Accordingly, this raises the question of the control of medical knowledge: "A fundamental change in the balance of power has come from the ability now of employers or government to analyse the practice patterns of providers more systematically than they can themselves" [18].

4.3. The patients

At the heart of the HN are the patients. The need for the informed consent of patients has not been overlooked by the HNs. One of the HNs has already written a regulation for the protection of data privacy. This provides protection for patients, as well as a means of supervision. Through access to the list of professionals who have accessed his/her data, the patient can influence the correct functioning of the system. In this way professional access to data will be controlled by patients.

4.4. Limits

Thanks to a qualitative methodology we are now in a better position to understand how and why health professionals participate in the conception and implementation of HNs, which project is supported by the HN, and the controversies the actors have to deal with. A number of strategies have been used in order to improve the rigour of our design and validate the results: triangulation of data technique and coding, a multidisciplinary team and an expert committee to lessen the influence of preconceptions on the results. However, some limits to this study need to be reported. The first phase of this study focused only on the primary actors of the HNs and not on private users. The second phase of the study, however, will make good this lack. This study took place in a particular context, which is constantly evolving. More work is needed to determine whether these results are observed in other settings and to see how the HNs studied will evolve in the light of recent national events. We can, however, be confident about the fact that some professional issues will be spontaneously highlighted too.

5. Conclusions

This study suggests that not only technical, but also professional issues are involved in the building of HNs. These findings have some implications for public health policies. Professional issues, and not only practical changes, must be taken into account in order to improve professionals' use of these systems, and reap all their potential benefits, such as collaborative practice. This means, for example, ensuring the security and the supervision of data, as well as a better follow-up of patients. The technical infrastructure should be flexible enough for users and should allow users to respond to their professional needs. This raises the question of the balance between a minimal standardisation and the possibility of personalisation of the use of network. To be used, the network must be able to answer the needs of the user. As professional issues underlie the use of technological tools such as HNs, the manager and funder of the network are also important choices for the health professionals in order to ensure that these professionals actually use the network.

Further research is planned to investigate, in particular, the consequences of participation in such HNs for the practice and more particularly for the doctor-patient relationship. More work is needed to investigate the building of HNs, the participation of health professionals, and their collaboration. Over the coming months we will follow the evolution of these two HNs with regard to the development of the national eHealth platform and practitioners' perception of such initiatives: once they have been designed, HNs still have to be used by professionals.

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