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New ways to produce shared knowledge to improve cooperation in overcoming societal challenges in healthcare: the lever of innovative interface organizations in France

Abstract
Nowadays new digital devices have raised questions in the healthcare sector. They have given new possibilities to both improve care and master costs but may also create new constraints. In France the problem of “walling off” areas of healthcare, especially between primary care and the hospital sector, has led to the development of new healthcare interface organizations (HIO). They constitute innovative areas to develop coordination and cooperation between all the involved actors, including patients and their families. Using an information and communication approach, we analyze how HIO may represent an interesting lever of improvement through production of shared and collective knowledge both regarding the healthcare quality of empowered patients but also for the evaluation of the services proposed by these new HIO.

Introduction: context and objectives
Healthcare systems are in crisis in all developed countries with problems of costs and quality of care. The French healthcare system may be considered “out of breath” (Isaac 2014) being overly curative. ICT may help to transform it into a more preventive system within an e-Health context with new information, communication and shared knowledge challenges.

At present, France is a tackling specific problem: the “walling off” or compartmentalization of medical activities, especially between primary care and hospitals, is fueling social and territorial inequalities in healthcare, at both individual and collective levels. The French healthcare System is reasonably effective, particularly in term of access for all its citizens, but it is also very expensive – 12% of GNP – and thus inefficient.

Transforming a predominantly curative system into a more preventive one is a great challenge in terms of the new approaches required, from coordination to cooperation, in turning to new uses of shared data. Moreover, the key challenge is sharing data to build contributory knowledge favoring new cooperation between all the actors involved, including the empowerment of patients (cf. 2002 Law and the idea of “sanitary democracy”). All this in a context of “augmented human”, “quantified self” and full use of data (big and open) and their specific characteristics within the context of healthcare (regarding particular legislation), leading to the development of new socio-technical devices, especially platforms.

1. Researcher’s position and methodology
This paper was developed in the context of a Master’s degree and is based on
cooperation with health insurance offices and especially with new health interface organizations (HIO) from an economic intelligence perspective of organizational intelligence (Wilensky 1967). The research is aimed not only at boosting the competitiveness of companies but also building social cohesion in areas (Carayon 2003) faced with the particular challenges of e-health and inequality.

In the field of information and communication science, we work in accordance with the perspective proposed by F. Bernard (2006) which sees the convergence of four issues – connection (interaction), meaning, knowledge and action – in an “engaging” framework based on building knowledge for (research) action, by insisting on the complementarity of information and communication approaches.

We focus on A. Mucchielli’s (2010) “situational and interactionist semiotic” approach with the importance of interactions in specific contexts to give meaning to the actions of all the actors, including patients and their families. We also attach importance to socio-technical devices, that is, ICT tools. We propose a position that we call ICOE (Information and Communication for Organizing Ecosystems) which includes (public or private) organizations, socio-technical devices such as platforms and of course, territories. In accordance with the "organizing" dimension (Weick 1969), we advocate the integration of socio-technical devices (as platforms of activities) in the wake of Simondon (Du mode d’existence des objets techniques, 1958) and also Callon-Latour’s "actor-network theory" or sociologie de l’acteur-réseau (2006).

We also look to the "Montreal school" (Cooren and Robichaud 2011) emphasizing the importance of interactions and speech acts following the lead of research conducted in France – “Language and Work” or Langage et Travail (Borzeix and Fraenkel 2005) – to better understand the “iceberg of activity”, considering the importance of language at work (communication challenges) to improve coordination with the aim of trying to produce shared knowledge to build cooperation between all actors.

We extend this approach to the complementarity of communication (interactions, discourse at work, etc.) and information: importance of data, particularly to build shared knowledge for action, focusing on information and communication scenarios to produce shared knowledge.

Following the lead of Le Cardinal et al. (2001), we also assert the importance of trust, especially in the management of complex projects. In this respect, we highlight its importance in regard to issues of recognition at work (self-esteem of actors) and of professional identities, thus including affective aspects and representations of the different actors.

As well as giving special consideration to innovation in relation to “everyday activities” (Alter 2005) we also affirm the need for new intermediation in knowledge production and, therefore, the societal dimension of innovation in organizational areas considered as ecosystems (Godet et al. 2010).
According to M. Doueihi (2011) we insist on the role of social platforms “not because they manage the access and the storage of data, but because they have become thanks to the activities of the (human) users, areas of convergence between information, communication, knowledge and sociability” with all the importance of social networks and new digital identities.

This is all done with the intention of trying to improve cooperation in healthcare through new shared knowledge with the idea of constituting “strategic communities of knowledge” such as those described by N. Moinet (2009), which are of particular relevance to healthcare, with the idea that “collective intelligence is first the “intelligence of link” (Zara 2008). The challenge is then to develop conditions to promote collective intelligence rather than the individual intelligence of each actor. This objective meets the imperative need to tackle the great challenge of social and territorial inequality in healthcare (both individual for people and collective for territories) and thus, especially, the issue of “medical deserts”.

2. Healthcare Interface Organizations (HIO) as innovative areas between primary care and hospitals

New healthcare interface organizations (HIO) constitute innovative areas developed since the 1980s to reduce the tendency to “wall off” and create divisions between primary and hospital care, and so to promote cooperation between these two key areas of medical provision in France. First to appear were the Hospitalization at Home (HAD: Hospitalisation à Domicile) and Healthcare Networks (réseaux de santé), then Medical Houses (MSP: maisons de santé pluriprofessions), followed ten years ago by MAIA, for coordination of devices for Alzheimer patients and, more recently, PAERPA, for elderly people with little autonomy. We can also refer to CLIC, Information and Coordination Local Centres (centres locaux d’information et de coordination).

All focus on the challenges of coordination (Bloch and Hénaut 2014) to improve follow-up patient care, particularly through PPS or personal health plans (Plans Personnalisés de Soins) or patients pathways (parcours de soins). With the exception of MSP (which corresponds to a grouped medical exercise and not to a functioning network), these different interface organizations share the key mission of coordinating healthcare, not delivering it directly but organizing it. They are not new care organizations but contribute to improving the coordination of existing organizations.

They meet important challenges, the first being to show that their existence matters and that their services add value in a healthcare world often characterized by the individualism of its actors. There is also the risk of hard competition in same territories creating new divisions. Bloch and Hénaut (2014) insist on the visibility of their action in an integrative approach within a territory.

As already underlined, these health interface organizations, mainly created for
improving coordination of GPs in primary care, strongly rely on the development of new socio-technical digital devices such as electronic health records. In France DMP (dossier medical partagé) are increasingly being incorporated into platforms such as PTA (Territorial Platforms to Sustain Primary care Activities – Plateformes Territoriales d’Appui), experimentally developed with the TSN (Digital Health Territories – Territoires de Soins Numériques) (2013, 17), probably for integration in regional information systems. Information and digital devices are essential, and there are often digital as well as medical “deserts”.

The question of the services provided by these new tools is essential. It explains for example the success of Diraya medical records in Andalusia (Spain) and the failure of the DMP in France launched in 2004 with a lot of attention. We may also point out the importance of telemedicine activities especially for disadvantaged areas such as medical deserts.

Another key point is the notion of patient pathways (traceable and interoperable) promoted by these interface organizations, especially healthcare networks. But these are health organizations and not just cure organizations. Most patient follow-up care, often in complex situations (patients suffering from multi-pathologies, isolated and with limited financial resources) “is not mainly to cure” (G. Mick1); helping GPs better manage these complex cases is the main justification for HIO.

These HIO must also justify the use of public money with regard to their evaluation. In France, evaluation is a large part of so-called “new public management policy” or NMP (Nouveau Management Public) for rationalization of public power actions. But there have been much abuse and suffering, with Ogien (2009) speaking of “the hospital seized by quantification”, and Gaulejac (2005) referring to “a managerial ideology resulting in social harassment”.

Mintzberg (2001) pointed out the excesses of the word “efficiency” (which has become a "bad name"), given the excesses of some quality approaches, which have generally become rigid quantitative controls that can lead to sanctions and not to development aid.

In this context of often difficult relations between interface organizations and their sponsors, we have worked on new approaches of evaluation, corresponding to an information and communication approach, based on the creation of new shared knowledge to improve services to patients while also involving them more.

3. From information and communication challenges to shared knowledge building

The initial investment, as already mentioned, may create a favorable context for sharing knowledge, especially with “strategic knowledge communities” (Moinet 2009),

1 Gérard Mick, specialized doctor and researcher, is President of ‘UNRS (National Union of Healthcare Networks – Union Nationale des Réseaux de Santé).
but also with a strong dimension of knowledge production for action in everyday situations (better follow-up of patients i.e. traceability of pathways, to improve the quality of care). The aim is to promote a new cooperative spirit supported by new socio-technical devices and emphasizing the training dimension. These innovative interface organizations are two-way learning organizations: they train their members to spread the spirit of cooperation and openness towards other professionals and they also build a collective intelligence from the knowledge of all their members (professionals, but also patients and their families).

Some patients change considerably (Mick) and are more demanding, often becoming experts in their disease and actors in their own health, fulfilling notions of "health democracy" and "empowerment". The High Authority for Health (HAS – Haute Autorité de Santé) has proposed adopting certain process approaches in quality management including enhancing the role of patients: "tracer patients" (patients traceurs) and "expert patients" (patients experts) would put into practice the concepts of PPS, Personalized Project of Care (Projets Personnalisés de Soins), and care pathways.

In our ICOE position (see above), we insist on the "performativene capacity of information". "Information is an action, in the sense that it makes a representation" (Vigouroux and Zugasti 2017).

In partnership with healthcare interface organizations, we are working to develop innovative, qualitative, participatory and immersive methodologies to co-build shared knowledge devices with all actors, integrating their feelings and emotions and their development. We try to achieve this by converging representations and firstly by trying to develop a shared language around shared objectives to try to overcome the compartmentalization of different approaches to various jobs. It is also a question of apprehending and valuing the creativity dimension to favor cooperation in a dynamic of "improvisation and working together" (Ménissier, Martin-Juchat and Lépine 2017).

The new approaches centered on the information and communication issues that we propose also include the promotion of HIO by trusting in their capacity for continuous self-improvement. Here again, cooperation (communication) is built on new uses of shared data, more often produced collectively for shared purposes: traceability of care and valorization of the services provided to both patients and professional members of these interface organizations.

We are working on new approaches to care pathways around the notion of “tracer patients” with a project to create an observatory of care pathways. This will involve trying to converge three types of process: compliance with benchmarks, implementing change and development of innovation with improvisation and creativity (Caliste and Bourret 2015). Promoting adaptability is therefore essential.
4. New cooperative approaches to platforms and socio-technical devices for shared knowledge

All these perspectives aim to promote the appropriation and better use of new socio-technical devices (computerized patient records, platforms, telemedicine tools, etc.).

Computerized patient records constitute a first step, for monitoring patient care pathways. We compared the French DMP (Personal Medical File – Dossier Médical Personnel) and Diraya medical records in Andalusia (Spain). The French DMP launched in 2004 was largely a failure because of the defective project management behind development of this tool. There were several changes of operators and it was not a cooperative project with users, hence their fear of it being above all a control tool to boost the activity and revenues of Health Insurance or CNAMTS\(^2\) (French doctors are paid for each medical act). Since 2017, the DMP (having changed the designation for medical records belonging to patients from “personal” to “shared” records) has been entrusted to CNAMTS, which is experimenting with new approaches, making it one of the axes for improvement of the services provided to its users. The case of Diraya medical records is different, due to better project management: cooperation with users, continuity of the project team and development of real services to users (making appointments, health data management, etc.). It is a concerted device that has really focused on the development of shared knowledge; the word *diraya* means knowledge in Arabic.

Coordination of the different actors has become a key issue in France. The public authorities rely heavily on the development of intermediation platforms: both for general services for all citizens (cf. Ameli .fr platform for CNAMTS) but also specific services to improve cooperation for primary care professionals. This is the case of PTAs (Territorial Support Platforms – Plateformes Territoriales d’Appui) for primary care and, more recently, SNACs (Digital Services for Coordination Support or Services Numériques d’Appui à la Coordination ) emphasizing both notions of care pathways and new areas of care (*territoires de soins numériques*\(^3\)).

As with any technique (Ellul 1990), these new tools are ambivalent. They can both contribute to improvements but also, by creating new constraints, as ERP\(^4\) they risk causing discouragement (Mayère 2017) owing to new forms of “tailored services” or “uberization”.

There are many tensions between costs, standards and values among the different job cultures that need to be taken into account. The rigid models often proposed by National Healthcare Offices frequently lead to despondency and suffering at work and rarely meet the needs and the particular context of the different interface organizations.

\(^2\) CNAMTS: Caisse Nationale d’Assurance Maladie des Travailleurs Salariés.


and the specificities of their (complex) patients or their professional actors.

A customization approach defining invariants for all structures but with a large part left to local adaptations could be an interesting way forward. It is a matter of developing a collective intelligence (contextualized for each interface organization) in a perspective of continuous improvement of the service provided to the two types of users (professionals and patients) by also integrating the other actors (public services, local authorities, etc.).

One essential aspect is to insist on incorporating the indispensable human dimension into these socio-technical devices, in a context of co-production of services through the cooperation of all actors. Accordingly, ethical issues are unavoidable and "technical performance must be up to human requirements" (Thiel 2003).

Conclusion

Health Interface Organizations (HIO) thus constitute spaces for innovation and the development of collective intelligence to develop and improve patient services, which are interesting to study in the context of the profound changes provoked by e-health devices.

The production of shared data leading to a form of collective intelligence can greatly contribute to the improvement of the services provided to the different users of these interface organizations (health professionals but also patients and their families) and bolster their legitimacy for sponsors.

The first step, often through training activities, is to converge the representations of all actors to create the conditions for collective intelligence development in a perspective of continuous improvement. In a second step, the appropriation and adaptation (customization) of the socio-technical devices proposed to these interface organizations must make it possible to produce shared knowledge and then collectively set up new modalities for more contributive evaluation methods in a context of continuous improvement developed with involvement of all the actors.

New health interface organizations (HIO), involving public and private organizations and fostering cooperation among all the actors, including patients and their family, can play an essential role as spaces for innovation, building cooperation around shared knowledge. If healthcare is still a competence of national states, the opportunities offered by cooperation at European level should not be forgotten, such as the Epsos (Smart Open Services for European Patients) project for patient mobility in the European Union. Based on shared knowledge, these health interface organizations (HIO) therefore constitute an important lever of personal mobility and integration in the European area.

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References


