

Unintended Consequences of Telemedicine Implementation

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Abstract— This poster present preliminary findings and research questions from an ongoing sociological research project on Norwegian telemedicine. The aim is to illuminate unintended consequences of implementing telemedicine technology, and to raise the question if these unintended consequences can explain the slow diffusion of telemedicine in routine clinical care.

Keywords - Telemedicine; health care innovation; Norway

I. BACKGROUND

Norway's application of telemedicine has been in the international front [1]. Still, as in other countries, the digitalizing of Norwegian health care takes time. During the more than 20-year history of Norwegian telemedicine the field has met unexpected barriers. Internationally both policy makers and medical expertise now ask for large-scale implementation of standardised systems, whereas most services that exist are local and small-scale [2]. This has caused claims that the diffusion of telemedicine is too slow [3].

The aim of this poster presentation is to illuminate unintended consequences of implementing telemedicine, and raise the question if these can explain the slow diffusion of telemedicine in routine clinical care.

We have conducted a literature review, as well as 10 in-depth interviews with key informants from the Norwegian telemedicine and e-health sector.

II. PRELIMINARY FINDINGS, NEW QUESTIONS AND DISCUSSION

According to preliminary analysis of existing literature and our interview material, there are at least three unintended consequences of telemedicine that actors in the field are aware of, but that receive little attention in implementation processes.

- First, on a micro level: the very access to telemedicine (for expert advice and second opinion) adds to patients and professionals *feelings of trust and reassurance* whether it is used or not [4][5]. This implies telemedicine has consequences also when it is not used, and thus that decisions on whether to continue or close down telemedicine services cannot be based on frequency of use - evaluations.

- Second, on an organisational level: as intended the implementation of telemedicine affects work procedures in health care organisations. An unintended consequence of this is that new work procedures often ends up altering previously established structures of power and responsibility as well, and thus lead to *organisational disturbance* [6]. It is very rare that all actors in an organisation welcome the disturbance of established structures. We ask if the opposition towards the organisational changes that comes along with new technologies might represent a main barrier for the successful implementation of telemedicine systems.
- Third, in health care policy telemedicine is often suggested as a practical means for a more efficient, improved and equal health care service. Our study revealed that actors in administration, management and politics also ascribe symbolic value to telemedicine: and we ask if *telemedicine can become symbolic politics* [7]. If so, this indicates that telemedicine implementation can be slowed down by local, regional and national disputes on health politics and the organising of health care. We therefore argue that on-going local and national political battles in the health care area need to be assessed as part of telemedicine feasibility and process evaluation studies.

III. CONCLUSIONS AND FUTURE WORK

The preliminary findings from our sociological research reveal that there are at least three unintended consequences of telemedicine implementations that in different ways can explain slow diffusion. On a micro level both patients and professionals can be content with the technology ensuring their access to expert advice and second opinion. This implies that actual use is not always the outcome of implementing a telemedicine service. On an organisational level telemedicine brings with it organisational disturbance. Opposition towards the new structures of power and responsibility that comes with telemedicine systems might be a part of the explanation for slow diffusion. On a macro-, or policy level, telemedicine can become symbolic politics; the implementation of new technologies in clinical work is linked to on-going political disputes in health care. This can slow the processes of implementation in local, regional and national contexts. There is need for awareness of intended

and unintended consequences of telemedicine in implementation processes.

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