EDITORIAL

More room for telemedicine after COVID-19: lessons for primary care?

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Background

The COVID-19 pandemic has put under pressure all the European health care systems, regardless of their type and structure. Telemedicine (TM) has been an almost unavoidable answer for primary care (PC) services to contain contagion during the first period of this catastrophic event. Starting from general practice, the pandemic has dramatically undermined the traditional face-to-face contact of the patient–physician relationship and brought TM to the forefront of PC on a broad scale, as never before [1].

Here, first, we briefly summarize the main features of PC in Europe. Then, we look over the vast literature on TM and discuss the major concerns which have limited its widespread adoption before the pandemic. Finally, we depict a radically different post COVID-19 scenario for PC in Europe, in which TM could be exploited to the utmost.

Primary care

PC includes all the health services that are the first level of contact for individuals and families, and from then on a source of continuous, comprehensive and coordinated regular care to meet their health needs [2]. In terms of health policy, the most important function of PC is the coordination of care within the whole spectrum of healthcare services [3]. Beyond general practice, the services included in PC range widely from a European country to another, depending on national wealth and type of health system. For instance, in the Italian National Health Service (NHS) infant vaccinations, population screenings, outpatient consultations, counseling for family planning, home care and rehabilitation services are all part of PC [4].

Regardless of the different health frameworks, general practitioners (GPs) are the pivotal providers of PC throughout Europe, as they are the front-line health professionals to whom patients turn for any health-related concerns. GPs are also considered crucial 'gate-keepers' for filtering secondary care induced by specialist consultants [4]. This is their traditional role in the 'Beveridgian' public health systems (like the British and Italian NHSs), more recently played by GPs also in 'Bismarckian' social health insurance systems (like the Belgian and Dutch ones) [5]. Although GPs' costs are mainly covered by public services or social insurances in all European nations, they are still officially self-employed physicians (in Italy and the UK too). For historical reasons, GPs are a sort of 'small businessmen' inside the health care systems [6], differently from their colleagues in hospitals who are usually employees in their workplace.

Finally, out-of-hours and timely access to PC have become common issues in this era of ageing populations [7, 8], further amplified by the increasing shortage of GPs throughout Europe. In addition to practice nurses, a recent strategy in PC has been to involve pharmacists, by far the third largest group of health professionals in Europe [8]. Pharmacists should help reduce the GPs' workload by encouraging adherence to prescriptions, especially for patients in poly-pharmacy such as the older and chronic ones with multi-morbidity.

Telemedicine

TM is a very general term open to various interpretations, starting from its definition, more than one hundred of which had already been counted in 2007 [9].

Overall, TM can include the storage, retrieval and transmission (via various communication routes) of personal data and information on patients' health (e.g., digital images and clinical parameters) to support clinical decisions by and between health professionals [10–12]. However, we still find it useful for our subject to return to the very first TM definitions which, without including the flow of information, were

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more strictly patient-oriented [13]. These definitions refer to TM as a virtual interactive communication tool between physicians and patients remotely located, thus assuming TM as an alternative to the traditional face-to-face consultation in the same place. Following the first telephone exchanges at the end of the last century, synchronous TM can now be practiced through modern and hi-tech audio–video devices (e.g., smartphones, tablets and laptops). Currently, the potential interest on TM in developed countries goes far beyond the initial opportunity to periodically consult patients living in rural or island areas [14, 15], and can be extended at least to patients unable to travel on account of disability problems, financial restraints or work commitments [11]. As a matter of fact, the technical barriers that potentially limited widespread TM usage in the past have been gradually overcome [16], thanks to the drastic cost reduction of audio–video devices too [11]—more than 80% of 16–74-year-old EU citizens had accessed internet via multiple devices in 2016 [17].

Several studies have shown that TM is not inferior to traditional consultations in terms of clinical efficacy and quality of life, especially for chronic diseases which require periodic check-ups [18–22]. The most paradigmatic example is diabetes—probably not by chance the very first pathology to which the concept of patient empowerment was applied [23]—due to the crucial importance of lifestyle and thus the major role played by patients in the management of their own health.

As expected, TM also proved cost-effective from the health and societal perspectives [21, 22], thanks to lower direct (clinical) and indirect (travel and work loss) costs. In general, TM should help pave the way to effective, efficient and patient-centered health care in the long run [3, 15], facilitating and speeding up the interaction between patients and health professionals [21].

Critical issues

Although the widespread adoption of TM seems to be apparently unavoidable in this era dominated by information technology (IT), its diffusion has been rather limited so far in clinical practice, especially in PC. Despite the ample evidence and consensus that TM interventions in PC are feasible and acceptable to both patients and physicians [3, 24], many different concerns have been raised on TM during the last decades. Without claiming to be exhaustive, here we try to summarize the most cited and meaningful ones for PC.

The historical concern about the low knowledge of IT tools among health professionals and patients has now been substantially reduced in practice, even among elderly people [17]. Moreover, this cannot be considered an insurmountable hurdle in PC, by definition, once it is accepted that TM is a complementary tool to traditional care rather than a full replacement [25]. Once a solid and empathic patient-physician relationship is established, a really patient-centered care allows people to freely discuss with their doctor whether or not a technical choice like TM fits in a specific circumstance [23]. TM does not have to become a one-size-fits all solution, rather it must be always user- and case-sensitive [26]. The personalization of these decisions is even more important in PC, a level of care inevitably characterized by a highly heterogeneous population [27]. Also, this kind of approach implicitly addresses the ethical concern that TM could raise inequality of access by penalizing patients who are less IT-skilled or poorer [28]. Once acknowledged that patients can access PC health professionals in the way that suit them best, TM must be considered simply a new form of communication now available in addition to the traditional ways.

Various ethical and legal concerns have been often voiced on TM with reference to patient's confidentiality and privacy [25]. These concerns mainly stem from security issues related to the repository of electronic medical records—thus more technical than ethical [26]—and are usually ascribed to a lack of specific legislation on TM [13]. In general, confidentiality and privacy protection are major issues in any field in the era of IT [29], and a specific definition of sensitive health-related data is hardly meaningful [25]. Yet, patients—especially those chronically ill—are usually much less concerned than healthy citizens about privacy, expecting the benefits of rapid communication with clinicians to outweigh the risks [29]. Ethical concerns on privacy have been even extended to TM consultations, claiming that confidential information might be overheard by relatives or friends who are present during conversations [11]. However, a warning or reminder to the patient/caregiver at the very beginning of the conversation should be enough to address these issues.

Last but not least, a major economic concern on TM stems from its financial impact on traditional healthcare services, especially in those fragmented health systems widely adopting tariff lists, if fees for TM services have not been fixed to compensate for the loss of income due to missed practices and consultations [12]. Besides hospitals, this can become a real hurdle for TM in PC too, notably in European countries where many GPs still work single-handed and risk losing a substantial proportion of their own personal income.

In summary, TM is very likely to improve clinical practice and continuity of care for patients who have established relationships with their physicians [30], and its widespread adoption seems to be more a matter of labor organization and health care funding than technology and ethics. That is why today the real priority for European health systems is to incorporate comprehensive strategies for boosting TM [14, 31], rather than further research projects on it.

Future prospects

In general, the demand of PC services can vary a lot, even within the same country, depending on the catchment area. Overall, two major 'drivers' of PC access in Europe are the mix of populations (e.g., the shares of children and elderly people) and territories (e.g., sparsely populated and urban areas). Working people are the social category mostly penalized by piecemeal delivery of PC services in modern European societies. Besides being potential patients themselves, they can be caregivers for children and frequently for elderly relatives [8]. Since this may imply several hours away from home or work, working people would substantially benefit from wider usage of TM in PC [1].

From the supply side, we fully share the opinion that larger-scale organizations comprising a wide range of health professionals have become a pressing priority for a modern PC [32]. Working together is important to ensure high-quality care for patients [15], and co-location should facilitate communication and boost teamwork in PC too [33]. Therefore, a rational strategy would be to merge all the existing sites providing different health and administrative services at local level into single 'PC centers' open at least 12 h per week day, bringing together all the health and non health professionals working in PC, including GPs, who should become full-time employees like their colleagues in hospitals [8]. Beyond filtering minor ailments away from hospitals better and minimizing internal administrative overlaps, these organizations would offer several advantages. First, facilitated access to PC services, especially for working people, being open all day long. Second, increased provision of home care for elderly people who really need it (e.g., those unable to travel), thanks to the ample staff available. Third, enhanced management of out-of-hours for continuing PC, due to broad consolidation. Fourth, better understanding of PC services by patients and their caregivers, thanks to the merger of piecemeal deliveries. Finally, PC centers should be able to exploit IT tools better in the long run. Besides facilitating the management of electronic medical records, these large organizations should help develop 'clinical scribing' in PC [33], i.e., the team-based documentation of patients' clinical data, a very useful support for health professionals regularly practicing TM. The development of IT skills within a PC team should help clinicians recoup time with patients—always their foremost activity—and limit burnout symptoms [34].

To match health care demand and supply, we wonder whether tariffs (i.e., fixed prices per service) are the right choice [35]. Since competition cannot work by definition in a 'market failure' context such as health, setting fee-for-service tariffs is necessarily an arbitrary exercise, leading to financial distortions and eventually irrational allocation of resources [36]. Moreover, 'artificial competition' among health care services undermines their coordination and synergies—a paradoxical outcome indeed, especially in PC.

Rather than pricing and competing according to economic theory, we believe that planning and budgeting from business administration principles is the appropriate culture for managing health care organizations [35]. A national network of large organizations in PC could be rationally governed by local budgets fixed on a per capita basis and weighed according to age and density of population, with systematic monitoring of inputs (costs) and outputs (health services provided) facilitated by modern digital reporting systems.

To conclude, we think this proposal for a future PC, based on the positive lessons we can draw from the COVID-19 pandemic, is feasible and should in due course increase efficiency through tools such as TM.

Compliance with ethical standards

Conflict of interest Livio Garattini, Marco Badinella Martini and Michele Zanetti have no conflicts of interest directly relevant to this article.

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