Journal of Cancer Education
https://doi.org/10.1007/s13187-020-01945-5

Doctor@Home: Through a Telemedicine Co-production and Co-learning Journey

Luca Miceli[1] · Francesca Dal Mas[2,3] · Helena Biancuzzi[3] · Rym Bednarova[4] · Alessandro Rizzardo[5] · Lorenzo Cobianchi[6,7] · Eric S. Holmboe[8,9,10]

Accepted: 14 December 2020

Abstract

Telemedicine and remote visits are becoming more and more popular in several medical disciplines, including oncology. The Covid-19 pandemic has enhanced the need to continue to meet patients' ambulatory care necessities ensuring social distancing and limiting the access to clinical facilities. The National Cancer Institute of Aviano, Italy, has recently launched a program called "Doctor @ Home" (D@H). The pillars of the program are the co-production of the oncological care and the co-learning approach, which sees the clinical staff "hand in hand" with patients to maximize the outcome of the care, trying to take advantage of the new tools offered by modern technologies.

Keywords Telemedicine · Learning-by-doing · Co-production · Doctor@Home

Telemedicine has been defined as the use of electronic information and communication technologies to provide and support healthcare at a distance [1]. The recent COVID-19 pandemic has catalyzed an unprecedented need to deliver care remotely, following the social-distancing requirements and the disruption in hospitals worldwide [2]. This enforced aspect has fostered the fast development of telemedicine services across a variety of medical specialities, including radiology, psychiatry, dermatology, cardiology, and internal medicine [1], to continue to meet patients' ambulatory care necessities [3]. Many have forecast that virtual visits will keep taking place even in a new normal [4], as telemedicine has proved to improve access to care and allow better resource efficiency and lower costs compared with the traditional in-person hospital or ambulatory visits [1]. Several studies have investigated the public's perception [3], experience [5], and satisfaction [6] of telemedicine; many have concentrated on the necessary technological solutions employed [7], following the need for user-friendly but secure platforms and tools [8].

The National Cancer Institute of Aviano (Italy), one of the most recognized institutes and research centres in Europe in the field of oncological surgery and cancer treatments, has recently launched a brand new telemedicine program, named Doctor@Home (D@H), in cooperation with the local government of the Region Friuli Venezia Giulia. This program was initially activated for oncological checkups related to pain therapy, and it is now open for all the follow-up visits offered by the Institute. The first meeting between the clinician and the patient takes place in-person at the hospital. The patient can choose whether he or she wishes to join the telehealth path or to schedule the following appointments in person. The online visit takes place through an online platform, not excluding the possibility of further meetings in presence, if necessary or desired. The patient has to provide a valid e-mail address, to which the medical personnel can refer. On the day and time set

✉ Lorenzo Cobianchi
lorenzo.cobianchi@unipv.it

1 Department of Pain Medicine, IRCCS C.R.O. National Cancer Institute of Aviano, Aviano, Italy

2 Lincoln International Business School, University of Lincoln, Lincoln, UK

3 Ipazia, International Observatory on Gender Research, Rome, Italy

4 Pain medicine, Hospital of Latisana (ASUFC), Latisana, Italy

5 Pain medicine, Papa Giovanni XXIII Hospital, Monastier, Italy

6 Department of Clinical, Surgical, Diagnostic & Pediatric Sciences, University of Pavia, Corso Str. Nuova, 65, 27100 Pavia, PV, Italy

7 General Surgery Department, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy

8 Accreditation Council for Graduate Medical Education, Chicago, IL, USA

9 Yale School of Medicine, New Haven, CT, USA

10 Northwestern Feinberg School of Medicine, Chicago, IL, USA

Published online: 14 January 2021

for the visit, the medical staff generates the meeting on the "LifeSize" certified platform and communicates the access code to the patient. The patient can either launch the app downloaded on his or her smartphone device or access the link received by e-mail, and he or she is recognized by the system through the unique social security number badge. At the end of the visit, the medical staff creates an encrypted digital report which is sent to the patient via e-mail, along with an unlock code. In the event that a medical prescription is required, an identification code is also sent by e-mail, to allow the patient to collect the documentation at any pharmacy.

While the D@H program per se may not be new, the National Cancer Institute of Aviano has decided to concentrate the protocol and ongoing experience on two very relevant and probably underinvestigated aspects related to telemedicine: co-production of the oncological service and continuous learning.

Co-production in services happens when the user is actively engaged in adding value to the service that he or she needs, thus cooperating in its creation along with the provider [9]. In healthcare, co-production sees the active involvement of the patient, who is called to work together with the clinical staff in reaching the medical outcome, by behaving in specific ways or performing certain activities [10, 11]. In the D@H program, doctors and patients need to find new ways of communicating, of describing symptoms and concerns, since physical touch is not possible. Some post-surgery visits may even require the involvement of a caregiver, who should perform some maneuvers such as palpation and Blumberg's sign. The clinical staff has a relevant role in guiding the patients through this journey, which also allows citizens to get used to the potential of technology. Specific translation tools may be required [12, 13] to offer such patients' guidelines about the recommended behaviors or the needed actions, like the presence of one more person. While the program is on, being approved at a regional level, most of such guidelines are still missing; thus, learning looks crucial to create awareness about the best practices.

Therefore, the second pillar of the program, according to the National Cancer Institute of Aviano, is the learning aspect. The clinical staff is employing a learning-by-doing approach to discover how to manage the oncological patient through the screen in the best possible way. Such learning-on-the-job is performed in an interprofessional way, not only involving medical professionals but also patients, employing co-learning to support co-production of care. Medical doctors engaged in the program may rely on the help of colleagues with different specialities, nurses, and psychologists to understand how to manage better the remote visit and the relationship with the patient. The learning paradigm also involves the patients, who are required to understand how to take advantage of the secure and safe possibility offered by the technology, without moving back and forth, with the support, help, and guidance of the oncological staff.

The D@H program aims to merge co-production and co-learning employing four different phases:

1. Co-assess: D@H clinical staff should support patients in systematically self-assessing their symptoms, and describing them in the best way. Self-assessment should be recorded even between follow-ups;

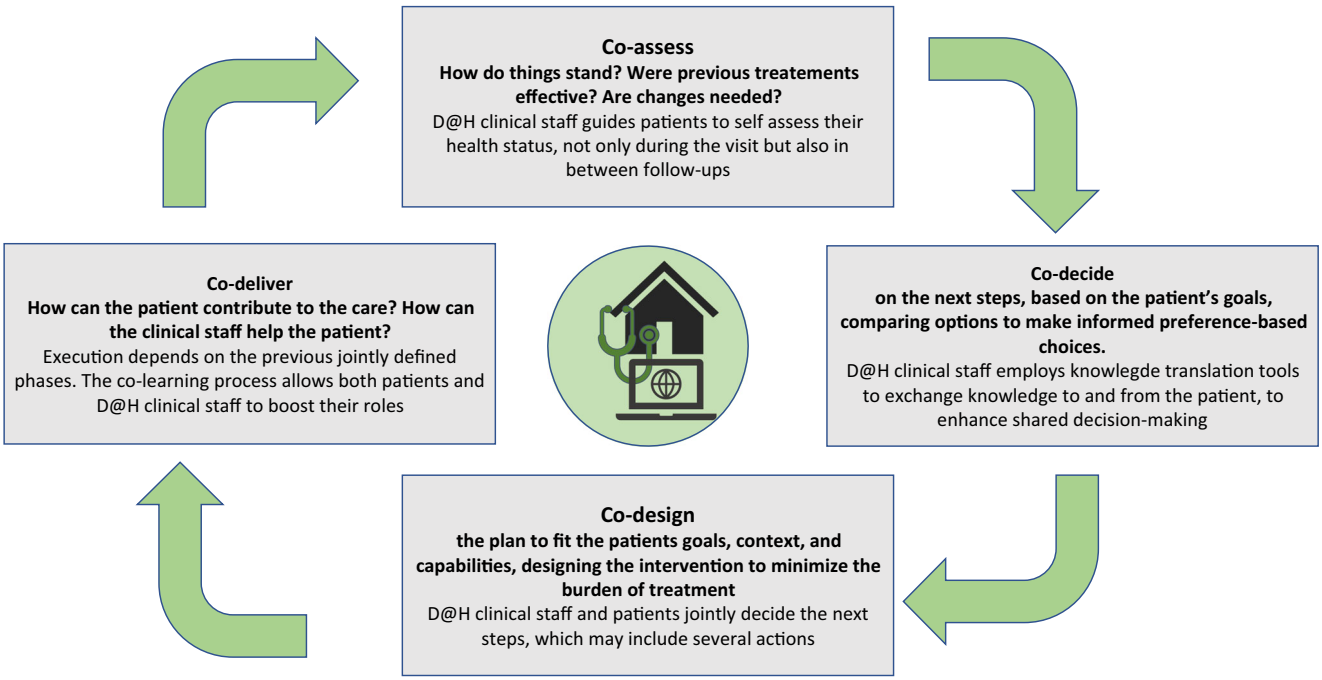

Fig. 1 D@H co-production and co-learning cycle. The framework is adapted from Elwyn et al. [11]

2. Co-decide: D@H clinical staff should employ knowledge translation tools to transfer their medical knowledge to the patient, and gather knowledge from the patient about his or her wills, aims, and urgencies. Understanding the patient's needs can promote shared decision-making about the following steps and rehabilitation;
3. Co-design: once D@H clinical staff and the patient understand each other, there is room to co-design the oncological treatment plan and the telehealth component of that plan, the actions to be performed, and best behaviors to maximize the medical outcomes;
4. Co-deliver: while the patient needs to take action following the three previous phases, telemedicine can support D@H clinical staff to monitor the progresses, and help or guide the patient whenever needed.

The D@H co-production and co-learning cycle, inspired by Elwyn et al. [11], is described in the following Fig. 1.

Co-production of the healthcare remote service and continuous learning stand so as the two main theoretical and practical building blocks of the D@H program, which results and tools are to be shared with the healthcare community, contributing to shaping the oncological healthcare system in the time to come. While telehealth visits are seeing a dramatic increase in oncology and other clinical disciplines, the co-production and co-learning aspects may even have an impact on the future of postgraduate medical training.

References

1. Nikolian VC, Williams AM, Jacobs BN, Kemp MT, Wilson JK, Mulholland MW, Alam HB (2018) Pilot study to evaluate the safety, feasibility, and financial implications of a postoperative telemedicine program. Ann Surg 268(4):700–707. https://doi.org/10.1097/SLA.0000000000002931
2. Grasselli G, Pesenti A, Cecconi M (2020) Critical care utilization for the COVID-19 outbreak in Lombardy, Italy. JAMA 323(16):1545–1546. https://doi.org/10.1001/jama.2020.4031
3. Sorensen MJ, Bessen S, Danford J, Fleischer C, Wong SL (2020) Telemedicine for surgical consultations–pandemic response or here to stay? Ann Surg 272(3):e174–e180. https://doi.org/10.1097/sla.0000000000004125
4. Cobianchi L, Pugliese L, Peloso A, Dal Mas F, Angelos P (2020) To a new normal: surgery and COVID-19 during the transition phase. Ann Surg 272:e49–e51. https://doi.org/10.1097/SLA.0000000000004083
5. Reed ME, Huang J, Parikh R, Millman A, Ballard DW, Barr I, Wargon C (2019) Patient–provider video telemedicine integrated with clinical care: patient experiences. Ann Intern Med 171(3):222–224. https://doi.org/10.7326/M18-3081
6. Grenda TR, Whang S, Evans NR (2020) Transitioning a surgery practice to telehealth during COVID-19. Ann Surg 272(2):e168–e169. https://doi.org/10.1097/SLA.0000000000004008
7. Jain S, Khera R, Lin Z, Ross JS, Krumholz HM (2020) Availability of telemedicine services across hospitals in the United States in 2018: a cross-sectional study. Ann Intern Med 173(6):503–505. https://doi.org/10.7326/M20-1201
8. Auerbach AD, Neinstein A, Khanna R (2018) Balancing innovation and safety when integrating digital tools into health care. Ann Intern Med 169(8):592. https://doi.org/10.7326/L18-0409
9. Osborne SP, Strokosch K (2013) It takes two to tango? Understanding the co-production of public services by integrating the services management and public administration perspectives. Br J Manag 24(S1):S31–S47
10. Batalden M, Batalden P, Margolis P, Seid M, Armstrong G, Opipari-Arrigan L, Hartung H (2016) Coproduction of healthcare service. BMJ Qual Saf 25(7):509–517. https://doi.org/10.1136/bmjqs-2015-004315
11. Elwyn G, Nelson E, Hager A, Price A (2020) Coproduction: when users define quality. BMJ Qual Saf 29(9):711–716. https://doi.org/10.1136/bmjqs-2019-009830
12. Dal Mas F, Biancuzzi H, Massaro M, Barcellini A, Cobianchi L, Miceli L (2020) Knowledge translation in oncology. A case study. Electron J Knowl Manag 18(3):212–223. https://doi.org/10.34190/EJKM.18.03.002
13. Dal Mas F, Biancuzzi H, Massaro M, Miceli L (2020) Adopting a knowledge translation approach in healthcare co-production. A case study. Manag Decis 58(9):1841–1862. https://doi.org/10.1108/MD-10-2019-1444