

## INTERPROFESSIONAL COLLABORATION IN E-HEALTH ENVIRONMENT

**\*K. Trifonova, \*K. Slaveykov, \*\*L. Despotova, \*Zl. Trifonov**

*\*Department of Ophthalmology and General Medicine, Trakia University, Stara Zagora, Bulgaria*

*\*\*Department of General Medicine, Medical University, Plovdiv, Bulgaria*

*Corresponding author: Kalina Zlatkova Trifonova, Armeiska 11, Stara Zagora, 6000, Bulgaria,  
e-mail: [kali\\_tr@yahoo.com](mailto:kali_tr@yahoo.com), GSM: 0888852673*

### ABSTRACT

**Purpose:** Analysis of the need and benefits of interprofessional collaboration in e-health environment. **Methods:** Review of existing literature **Results:** Literature evidence suggests that ineffective collaboration between physicians results in suboptimal patient healthcare. The main difficulty arises from the different working environments and perspectives. The data suggests that for optimal results physicians must see themselves as having complementary and non-competitive roles in patient care. **Conclusion:** To alleviate the tension and improve the results from interprofessional collaboration an environment with open communication is required, in which the patients' safety is the primary concern.

*Keywords: Physicians, communication, healthcare*

**Introduction:** As e-health becomes an integral part of the healthcare system the ability to consult and communicate between physicians improves. In this new setting the ability to efficiently collaborate with other specialists becomes of paramount importance.

Health care is a team sport, but too often practitioners act as individual players.(1) For example, evidence suggests that doctors and nurses do not always work collaboratively in health care settings and that this contributes to suboptimal patient care. (2) Perceived competition, leadership struggles and confusion about the role have hindered collaboration between nurse practitioners and physicians. (3)

Interdisciplinary collaboration has the capacity to affect both healthcare providers and patients. Research has shown that the lack of communication and collaboration may be responsible for as much as 70% of the adverse events currently reported. (4) Interdisciplinary healthcare teams have become the new model for patient care delivery in today's complex healthcare environment of increased specialization and disciplinarity of healthcare providers. (5)

**Aims and Tasks:** Analysis of the need and benefits of interprofessional collaboration in e-health environment

**Material and methods:** Review of existing literature

**Results:** There are different barriers in the interprofessional collaboration. For example the power of seniors (experienced) over juniors (inexperienced), are a barrier to interprofessional working. New developments in health care such as the generic skill-mixing approach, and a drive towards true patient-centred care - using patient power to govern the priorities of interprofessional teams - may be the way to overcome these barriers. Professional groups are known to have differing moral and ethical philosophies of care. The paternalistic approach of the cure-oriented medic versus the public health and social advocate stance of the health visitor are examples. Professionals have markedly different pay scales according to their professional group and their role within it. Resource allocation can be a source of conflict. There is the issue of funding for staff. Seeing money being used to employ staff from one group to provide a service normally provided by another can cause resentment. Staff shortages can also damage interaction as groups withdraw in an attempt to limit demands made upon them. (6)

Collaboration between general practitioners (GPs) and specialists has been the focus of many collaborative care projects during the past decade. In the Netherlands semi-structured interviews were conducted with eighteen medical specialists. 'Teaching GPs' and 'regulating patient flow' (referrals) appeared to dominate when the motivational factors were considered. In addition, specialists want to develop relationships with the GPs on a more personal level. Most specialists believe that there is not much they can learn from GPs. 'Lack of time', 'no financial compensation', and 'no support from colleagues' were considered to be the main concerns to establishing collaborative care practices. Additionally, projects were often experienced as too complex and time consuming whereas guidelines were experienced as too restrictive. (7)

E-health is increasingly valued for supporting interprofessional collaboration. (8) Telehealth is the delivery of health care at a distance, using information and communication technology. The major rationales for its introduction have been to decrease costs, improve efficiency and increase access in health care delivery. (9)

Electronic consultation (e-consultation) is an emerging tool that primary care clinicians can use to communicate with specialists about patients asynchronously- at different times that are convenient for each physician. To conduct an e-consultation, clinicians use either a Web-based program or a shared electronic medical record. Early adopters of e-consultation describe positive experiences for patients, clinicians, and health systems, including improved continuity of care, access to specialists, convenience, and information transfer. (10) Electronic communication and data-processing are by no means a new phenomenon in general practice. The next logical step might be to include telemedicine, i.e. images, sound, video, and other kinds of medical information in the communication process. (11) A number of barriers must be overcome before computerization is widely embraced in primary care: e-health often takes too much time and is too expensive; the quality of Web-based medical information is inadequate; software programs may not interact with one another; patient privacy must be protected; public and private insurers rarely pay for electronic communication with patients; and the computer could interfere with the patient-physician relationship. Studies have shown that some computerized systems, such as reminder prompts and physician performance feedback, may improve physician performance and patient outcomes, but if these systems are too time-consuming, physicians may not use them. If primary care practices are to benefit from the electronic revolution, they must redesign their clinical processes to ensure that e-health facilitates rather than hinders the work of physicians. (12)

In study conducted in Norway 47 real-time video conferences carried out to examine collaborative work and the medical talk involved. Sixteen of the observations were consultations wherein general practitioners (GPs) and specialists shared knowledge with the purpose of solving a medical problem related to a patient under treatment. The analysis of medical talk in consultations shows that collaborative work among GPs and specialists creates a shared understanding of the patient's clinical history and treatment trajectory. Collaborative work in and between different levels of the health care service expands knowledge, creates opportunities for learning in everyday settings, and improves the quality of knowledge distribution in the health care system. (13) Videoconferencing technologies can vastly expand the reach of healthcare practitioners by providing patients (particularly those in rural/remote areas) with unprecedented access to services. (14)

Online learning (e-learning) has a nascent but established history. Its application to interprofessional education (IPE), however, is relatively new. Over the past 2 decades the Internet has been used increasingly to mediate education. We have come past the point of "should we use the Internet for education" to "how should we use the Internet for education." Luke R. et al. have begun research on the optimal development of online learning environments to support IPE. (15)

An evidence-based, interprofessional educational course involving first-year undergraduate students studying medicine, nursing, physiotherapy and occupational therapy has been piloted at the

University of Liverpool. Part of the content was developed in an online format. To capture the development process and the e-learning writing experience, a focus group was arranged for the content writers. Team working contributed to the success of the writing process, reflecting the theme of working inter-professionally. (16) A similar study was conducted in London. The training ward was evaluated using a multi-method design and data was collected from all participants involved in this pilot: students, facilitators and patients. The study show promising results for improving interprofessional collaboration. (17) The process of teaching interprofessional collaboration through e-learning creates a new setting for lecturers. In a study from 2010 Gordon F. et al research the best pedagogy methods for teaching online. (18)

Attending to the shortage and sustainability of health care professionals and resources in rural areas is a continuing challenge. In response, there is a heightened focus on new models of healthcare delivery and collaboration that optimise the quality of patient care, respond to complex health needs and increase professional job satisfaction. Whelan JJ et al research Interprofessional rural health education within universities as a way of addressing these challenges.(19)

The participants of the Electronic Collaboration working group of the 2010 Academic Emergency Medicine in USA consensus conference developed recommendations and research questions for improving regional quality of care through the use of electronic collaboration. (20)

Interprofessional collaboration is also a problem when patients are transferred between hospitals. In a study from 2010 a team examines current status, barriers, and data necessary to optimize the initial destination and subsequent transfer of patients between and among acute care settings. (21)

**Conclusion:** Although barrier such as seniority, moral and ethical views, payment and role in the team are yet to be overcome, interprofessional collaboration is still the priority of modern day medicine. The patient centered model requires a fully functional team of physicians to provide the required health care. To alleviate the tension and improve the results from interprofessional collaboration an environment with open communication is required, in which the patients' safety is the primary concern. Most studies suggest that with proper education and courses team efficiency could increase and the larger part of barriers could be overcome.

#### References:

1. Weinstock, M., Team-based care, *Hosp Health Netw.*, 84(3):6 p following 28, 2, 2010
2. Weller, J., Barrow, M., Gasquoine S., Interprofessional collaboration among junior doctors and nurses in the hospital setting. *Med Educ.*, 45(5):478-87, 2011
3. Merkeley, K., Fraser, D., Effective collaboration: the key to better healthcare, *Nurs Leadersh (Tor Ont)*, 21(2):51-61, 2008
4. Fewster-Thuente, L., Velsor-Friedrich, B., Interdisciplinary collaboration for healthcare professionals, *Nurs Adm Q.*, 32(1):40-8, 2008
5. Kilgore, R., Langford R., Reducing the failure risk of Interdisciplinary healthcare teams, *Crit Care Nurs* . Apr-Jun;32(2):81-8, 2009
6. Daly, G., Understanding the barriers to multiprofessional collaboration, *Nursing times*, 100(9): 78, 2008
7. Berendsen, A., Benneker, W., Schuling, J., Rijkers-Koorn, N., Slaets J., Meyboom-de Jong B., Collaboration with general practitioners: preferences of medical specialists--a qualitative study. *BMC Health Serv Res.*, 4; 6:155, 2006
8. Gagnon, M., Légaré, F., Fortin, J., Lamothe, L., Labrecque, M., Duplantie, J., An integrated strategy of knowledge application for optimal e-health implementation: a multi-method study protocol, *BMC Med Inform Decis Mak.*, 8:17, 2008

9. Wade, V., Karnon, J., Elshaug, A., Hiller, J., A systematic review of economic analyses of telehealth services using real time video communication., *BMC Health Serv Res.*, 10:233, 2010
10. Horner, K., Wagner, E., Tufano, J. Electronic consultations between primary and specialty care clinicians: early insights. , *Issue Brief (Commonw Fund)*, 23:1-14, 2010
11. Kjaer, N., Karlsen, K., Telemedicine and general practice--future or present. Telemedicine, a way to strengthen the gatekeeper role?, *Ugeskr Laeger.*, 164(45):5262-6, 2002
12. Bodenheimer T, Grumbach K., Electronic technology: a spark to revitalize primary care?, *JAMA.*, 9;290(2):259-64, 2003
13. Nilsen, L., Ludvigsen, S., Collaborative work and medical talk: opportunities for learning through knowledge sharing, *Commun Med.*,7(2):143-53, 2010
14. Jarvis-Selinger, S., Chan, E., Payne, R., Plohman, K., Ho K., Clinical telehealth across the disciplines: lessons learned, *Telemed J E Health.*, 14(7):720-5, 2008
15. Luke, R., Solomon, P., Baptiste, S., Hall, P., Orchard, C., Rukholm, E., Carter, L. Online interprofessional health sciences education: From theory to practice. *J Contin Educ Health Prof.*, 29(3):161-7, 2009
16. Varga-Atkins, T., Cooper, H., Developing e-learning for interprofessional education, *J Telemed Telecare.*, 1:102-4, 2005
17. Reeves, S., Freeth, D., The London training ward: an innovative interprofessional learning initiative, *J Interprof Care*, 16(1):41-52, 2002
18. Gordon, F., Booth, K., Bywater, H., Developing an e-pedagogy for interprofessional learning: Lecturers' thinking on curriculum design, *J Interprof Care*, 24(5):536-48, 2002
19. Whelan, J., Spencer, J., Rooney, K., A 'RIPPER' Project: advancing rural inter-professional health education at the University of Tasmania., *Rural Remote Health.*, 8(3):1017, 2008
20. Baumlin, K., Genes, N., Landman, A., Shapiro, J., Taylor, T., Janiak, B., Electronic collaboration: using technology to solve old problems of quality care. *Acad Emerg Med*, 2010
21. Rokos, I., Sanddal, N., Pancioli, A., Wolff, C., Gaieski, D., Inter-hospital Communications and Transport: Turning One-way Funnels Into Two-way Networks., *Acad Emerg Med.*, 17(12):1279-85, 2010