

The Situation of Patients and the medical Health Care in Future

Elisabeth TM van der Gulik

Dutch Royal Academy of Medicine, Maetis Ardyn Arboservice, Utrecht, the Netherlands

***Corresponding author:**

Drs. Elisabeth van der Gulik, MD emer. Hon DL, Retired from Maetis Ardyn Arboservice, Member of Royal Academy of Medicine, Chirurgijn 21, 1188 DK, Amstelveen, The Netherlands

Submitted: 26 Feb 2020; Accepted: 06 Mar 2020; Published: 31 Mar 2020

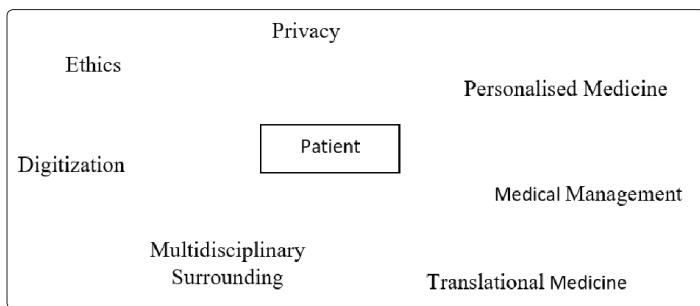
Abstract

New contributions to the development of health care give a different look to the place of the patient. It appears that the outcome of medical treatments may depend of the specific medical and physiological condition of the patient and even other kind of conditions outside the patient may contribute to the results of the whole of medical treatment. New entities as effectiveness, participation of the patient, ethics, technics, digitization, multidisciplinary approach of research and consultation, deliver a total different look to the way as to how health care has to be secured. New specializations in medical law, medical management, tend to be developed day by day. New specializations of medicine will bring more effectiveness in using medical procedures. For example, translational medicine tends to find the best effective way of setting up new treatments, new scientific investigations. The introduction of personalized, predictive and preventive medicine, the translational medicine and precision medicine will enhance the implementation of scientific findings. Every contribution in this development has to consider the effect to the result in the health care system. The importance of the condition of the patient remains always the leading motive.

Introduction

In a world, where health care has been developed with numerous initiatives and facilities, the patient will find himself in a complicated gathering of treatments. This development asks for a different look to the patient. We have to think about the specific condition of a patient and the specific results every time we deliver a certain treatment and scientific investigation. Economical or personal circumstances have their influence on the individual so that the same medical treatments appear with different outcomes.

New entities as effectiveness, participation of the patient, ethics, technics, digitization, multidisciplinary approach of research and consultation, deliver a total different look to the way as to how health care has to be secured. New specializations in medical law, medical management, tend to be developed day by day.



Looking with new interest towards the patient as an individual will provide us with new insight about the real needs to obtain the right medical procedure. In doing so new ways of scientific investigations have been developed. For example, Translational medicine, as a

new science, has the purpose of providing us with easier obtained results of treatments and cures. Personalized Medicine will serve to find the best possible treatments, adapted to the needs of the patient. Medical research will follow the same intention of looking for the most effective and costs reducing way of investigations. Efforts will be made so that scientific results will be easier implemented.

The Patient, Being Confronted With a Complicated Medical System

The effect on the patient being confronted with a complicated medical system must not be forgotten. To find out what really matters about his condition, an effective communication between health care worker and patient will be the best way of getting the best medical results during the whole period of medical contact. The reality of the situation exists in the notion, that the patient himself is the important subject, with all his personal and individual qualities. He is a person who has to deal with a continued development of the world around, amidst of new technics and scientific information.

Paying attention to the patient as a unique individual will bring a lot of confidence in the medical relationship. The patient, who has to cope with so much information, will be drawn to the right position so that he will follow the medical instructions and will find his way to recovery. Typical properties of the patient that might change the response to a medical treatment completely will make a great difference in the outcome and has to be recognized when making medical decisions.

At this point new medical specializations and technics have been busy to find a positive contribution to the resolution of health care

problems. In cases, where patients are in need of extra medical information or when they need to contact with their care supplier, the use of e-health facilities will help. Regular monitoring of a specific health situation, and websites with advice how to cope with certain disabilities, bring a useful assistance at the disposition of patient and specialists.

Paradigm of Health Care Organization and Anticipation

Specialists, technicians, researchers, nurses and people around are busy in finding their way in a busy world inside and outside the health care situation. Different ways in the daily working circumstances may be followed to cope with the new developments and directions all round. Effectively working together by transparency in contact and behaviour will bring health care workers and patients closer to each other. In doing so, cost-effective measures will be found, resulting in united approach of common problems, which often appear as overlapping each other.

Scientific investigations will help finding solutions in medical care and treatments. One of the problems to new scientific adventures, are expenses, needed to realize a new investigation. Central legislation, indicating how to set up medical investigations, provided with quality and behaviour codes, may be helpful in preventing waste of time, wasting of products and of energy. At last: co-operation worldwide brings the know-how of the latest progress in research available for as many centres as possible. This might be very helpful in implementation of new fundamental discoveries, looking for new applications in medicine. In short: we are facing a new way of health care organization.

The Development of Sub-Specializations and Sciences in Medicine

The one, who profits by new developments, is the patient. The amount of discoveries about different illnesses have given new hope for many patients. To be able to manage these new discoveries, sub-specializations have been introduced. New specializations and new sciences in medicine and new medical technics and research followed. Medical organizations, their medical personnel, technical enterprises, assurance funds, have to become part of an innovative system, in which participants are obliged to give up their isolated thinking and give way to suggestions and opportunities from outside. All activities must lead to the tenability of medical care in the future. New entities as effectiveness, participation of the patient, ethics, technics, digitization, multidisciplinary approach develop.

In the writing of new projects, the ethical condition of the investigation has to remain within the rules, drawn up by a specialized professional team. Ethics concerns the rights of the patient and the way, how an investigation should be set up. The researcher should follow the rules of integrity in his work, being honest in obtaining the right results and in solidarity with his colleagues. In advancing to the best treatments and new chances for medical specializations and sciences, Translational Medicine, Personalised, Precision, Predictive and Preventive Medicine take care of the patient as a person with an individual state of physical, mental, social and spiritual well-being. The importance of the specific condition of the patient has become leading motive.

Translational Medicine

Translational Medicine has to be seen as a form of Translational Science, using scientific findings from laboratory research

investigation to be implicated in health care. Clinical trials and clinical research are part of this kind of research as also biomedical investigation, resulting in new therapies, medical procedures or diagnostics. Researchers and clinicians work together to deliver more accuracy in diagnoses and treatments. In cancer treatments, changes in the administering of chemotherapy as a cure for cancer have been successful. In combined neurological and clinical research, new developments in the field of immunology are hopeful in getting more knowledge about several neurological diseases and their treatment.

Examples would be as follows: 1. The application of a medicine in different episodes, to build in a rest period for the patient, in between a series of given doses. 2. Targeted therapy by using an extra pharmaceutical product as adjuvant therapy, in addition to the existing chemotherapy, or the use of immunotherapy. 3. An example of effective co-operation may be found in the mission of the Human and Translational Immunology (HTI) Program at the Yale School of Medicine to accelerate the application of new developments in the field of immunology to the treatment of different human diseases. The administrative base has been situated within the Department of Immuno-biology and its core laboratories. Also, multiple sclerosis is part of the investigations in this program.

Looking for alternatives for antibiotics will probably be a hot item in future. Finding replacement of medicines, which tend to become scarce or not effective, has proved to be seriously problematic. Difficulties in policy making and funding by governments and industries are often the cause. Even, when new products finally have become available, a problem to get permission to bring them at the market may block the use of these. Regenerative medicine, as a form of Translational medicine, will in future provide cell-based therapeutic interventions in which stem cells will be used for cardiac repair and treatment of degenerative and age-related diseases.

Personalised Medicine

Scientists and clinical specialists may define personalized medicine more especially as directed to the needs of the diseased, as described in individual patient cohorts. Translational Research and Medicine as well as Personalised Medicine make use of clinical data, epidemiological data and available bio sample databases for research and clinics. The study of human disease genetics will bring new insights in the way health systems and organs are connected with one another. Protein structure is determined by a particular gene in the body. When enzymes and proteins may be analysed and compared with genetic findings, the origin of irregularities in metabolism, immunologic mechanism, transport, motion, regulation and storage may be better explored.

So, when phenotypic and genotypic features of a patient have been established the therapeutic strategy may be adjusted to the individual patient and more information about the risk of complications of the treatment and the natural tendency for a certain illness would be available. Also Precision medicine has to be seen as a form of Personalized medicine. What is then Precision medicine? Precision medicine is a new developed medicine, dealing with laboratory skills, the so-called computational biology and biomedical analyses. Computational science in biomedical research, health Informatics, computer science, will obtain an important place in health care. Medical technicians and engineers stand at the basis of the introduction of the use of robots and the application of different complicated computational programs in health technology.

Biomedical investigations will be helpful in the search of the right organ donor or as will be expected in the future, in the search of the right stem cells, when techniques and science are ready to be applied. Expertise centrums in genetics provide the patients with the possibility of improvement of their lives and that of their family in genetic related syndromes and developmental disorders. Genomic analysis, with the use of artificial intelligence, will help to determine the expectation of the outcome of the use of a drug, called pharmacogenetics.

Genetic Counselling and Molecular Biology

Big datasets, so called Big Data, have been determined, containing the large information of the genomic analyses of individuals. Molecular profiling tests and DNA sequencing are common practice in these laboratories in the determination of chromosomal abnormalities, responsible for many genetic disorders. Professional genetic counselling brings more insight how to deal with the outcome of DNA tests for individuals and families. Molecular biology tests have been developed to determine the kind of infectious diseases, viral as well as bacterial. Spectrometry and computational power may be used to the determination of a drug effect.

Patient Participation and 4p Health, Predictive, Preventive, Personalised, Participatory Health Care

Health care will only be complete with the implementation of the patient's contribution. In the design of clinical research projects and clinical guidelines, patients have already been given the chance to participate. Giving a particular notice of studies in which patients have given their opinions about different treatments will provide more suitable health care decisions. Sharing this kind of information will help to understand the positive or negative effects of treatments.

Holistic Approach

When communicating with the patient before the instalment of a treatment or when the treatment progresses, the health care practitioner or specialist may discover typical problems, that might prevent from obtaining satisfying results. A holistic approach will take into account the social and psychological situation of the patient. Way of living, lifestyle strategies and multifactorial medical management in any family at risk may prevent or delay the onset of complications. To be mentioned are neurologic diseases, diabetes, cancer, anxiety, several other situations, where a holistic approach of the patient assures a more satisfied condition of the patient and a way to rehabilitation. Physical therapy and exercise have been proven beneficial for Parkinson's disease and would cause a delay of getting Alzheimer and any other kind of dementia. Working on a healthy lifestyle will help patients with diabetes, as equally members in any family known with the risk of developing diabetes. Empowerment of the cancer patient by music, dance and creative therapy has been proven.

An example that would again fully illuminate the value of such an approach would be given in cases where a family appears to be genetically affected by anatomical defects, suitable for adapted exercise and physiotherapy.

Viewed in this light any health condition is considered as an individual state of physical, mental, social and spiritual well-being. The main idea of the person-centred medicine is to promote health and, therefore, reduce disease burden with the sick person. Traditional, complementary and alternative medicine may all be of help to achieve this effect.

Horizon Europe Project for a Better Society

Integration of bio-informatics into clinical practice asks for the knowledge of how to understand the output of genomic analysis and taking decisions from it. In Europe, the EU, the European Union, has been developing a big project, called HORIZON EUROPE, which is the name of an enormous subvention program for the years 2021 until 2024. Important challenges, related with health organization and many other public domains have been taken up to better the European society.

One of these challenges will be found in taking care of the urgent need of continued training of medical doctors, health care workers, researchers and decision makers in policy, educators and bioinformatics experts. The BioS subvention program, BioS stands for Bioinformatics, will offer courses in different medical fields and in obtaining new skills. Virtual training, called e-learning, and use of videos will be an important part of the project. The target of developing new skills considers 800 European doctors, representing a population of 10.000 health care professionals. They will have the opportunity to make acquire new skills as social attitude, biomedical analysis, medical statistics, clinical genetics, and medical interpretation.

Deans of Medical schools have been informed about the HORIZON EUROPE project. It will be quite certain, that curricula in universities and medical training schools would be adjusted now and in the future, so that medical studies and studies in technics and management will bring the right education with the last developments of knowledge included.

Renewed attention will be paid to Integrative medicine, Palliative medicine and Stratified medicine. Rare diseases will equally get more attention as being part of Personalised medicine. Multidimensional interaction of internal and external risk factors, genetic background, ethics, structure and rules, environmental risk factors, lifestyle, culture and many other relationships are all recognised as contributing to the citizens' well-being and have been taken in the decision making of the huge HORIZON EUROPE project [1-16].

Conclusion

The actual patient finds himself confronted with all kinds of specialized health care workers and specialists, who all will have to be adapted to a continuously changing health care system. Students and health care professionals will follow adjusted curricula, so that new knowledge of medicine, science, technics, and management can be implemented.

Therapeutic strategies may be adjusted to the individual patient and the risk of complications of the treatment. The patient will take part in scientific projects. By E-health, information and monitoring the communication with the patient will be optimized. Funding and equipment programs, as will be realized by subvention projects will be of great support to the continually developing health care organization.

References

1. BioS Project-Erasmus Plus biosproject.media@gmail.com <https://bios-project.eu>
2. Boeckhout M, Douglas CMW (2015) Governing the research-care divide in clinical bio banking: Dutch perspectives. Life Sciences Society and Policy 11: 7.

3. Boerhaave Continued Education, Population Health Management (2017) LUMC Campus, The Hague, The Netherlands
4. Characiejus D, Jasmina Hodzic, John JL Jacobs (2010) “First do no harm” and the importance of prediction in oncology. The EPMA Journal 1: 369-375.
5. Coebergh, Committee of the Federa at the time of developing the Code of Conduct (2011) Human Tissue and Medical Research, Code of conduct for responsible use.
6. Cohrs RJ, Martin T, Ghahramani P, Bidaut L, Higgins PJ, et al. (2014) “Translational Medicine definition by the European Society for Translational Medicine”. New Horizons in Translational Medicine 2: 86-88.
7. González ER, Mouttapa M (2013) Urban Revitlization and Health Justice: Questions and Recommendations. Californian Journal of Health Promotion 11: iv-vii.
8. Golubnitschaja O, Baban B, Boniolo G, Wei Wang, Rostyslav Bubnov, et al. (2016) Medicine in the early twenty-first century: paradigm and anticipation - EPMA position paper 2016. EPMA Journal 7: 23.
9. Health-RI (2017) Research Infrastructure, Business Plan. <https://www.health-ri.org>
10. Huber MAS, J André Knottnerus, Lawrence Green, Henriëtte, Alejandro R Jadad, et al. (2011) How should we define health. BMJ 343: 235-237.
11. Prstacic M, Dias Allesandrini C, Carvalho MM, Vrkljan M, Eljuga D (2011) Croatian-Brazilian Project, Breast Cancer and Clinical Research on Creative and arts-expressive/supportive (Psycho)therapies. Libri Oncol 39: 83-91.
12. Schrijvers G (2016) Integrated Care: Better and Cheaper, 2016, SDU editors, The Hague, The Netherlands.
13. Van der Gulik E (2019) How can you describe personal medicine? J Stem Cell Res Med 4.
14. Van der Gulik E (2020) How Neurologic Treatment Profits by Good Communication. EC Neurology 12: 01-02.
15. Van der Gulik E (2018) Initiatives, which contribute to a better Health Care System, Stem Cell Res Th 3: 114.
16. Wilhite AW, EA Fong (2012) Coercive Citation in Academic Publishing. Science 335: 542-543.

Copyright: ©2020 Elisabeth van der Gulik. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.