

# Innovation in Medical Practice, Interests and Challenges

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**Abstract:- Innovation in medicine has always existed. It is the necessary adaptation so that the health system can survive while adapting to the times and the environment. Today, the innovative approach consists of a more global and systemic vision of health, associating all the actors: users, their entourage and health professionals. The health practices resulting from innovation are undoubtedly linked to a transdisciplinary and pluri-professional culture and to a common, rather than siloed, training of health professionals. The research from which innovative practices will emerge will have to be based on this innovative vision of health combining basic sciences and humanities. The authors underline the need for regulation and the ethical aim for the sustainability of innovative practices in health.**

**Keywords:-** Innovative practices; Environmental medicine; Health; Sustainable development; Ethics ;Regulation; Training.

## I. INTRODUCTION

The founding principles of the French health system since 1945 are based on the need for access to quality care for all. These principles are based on the concept of equity in access to care and more broadly to health care. National and international systems are trying to move towards greater quality and safety for the patient and at the best cost for their society, but this is not without influence on creativity and innovation in health care. This notion of efficiency, if accepted to some extent by health professionals, seems to be met with non-approval and sometimes even exclusion from care by some of our fellow citizens. However, it is clear that efficiency and cost control have become essential in health care practices. The notions of equity and equality are the founding values of the health system in France. The fact that some people are excluded from care or even do not have access to it is inconsistent with the historical development of medicine, hospitals and health care.

Hospices were care homes for the elderly and chronically ill, religious houses established to give hospitality to pilgrims and travellers. It was an asylum, a place where one could take refuge from danger, need or distress. A hospital is a public or private institution that has spent some time in a hospital. agreements with the State

where all patients may be admitted for treatment. Historically, the "s" has been replaced by a circumflex accent, colloquially known as a hat. Does not this "hat" now give the hospital a more regulatory than humanistic meaning?

Today, we are faced with an imbalance between the values that have carried the system and the reality on the ground. We have moved from a logic of welcoming everyone and health for all to the control of the health system. economic in the "company" hospital. Despite the large sums of money involved, the succession of hospital laws, the desertification of vocations to the health professions and the tension in the hospital world remain. Access to care for all is compromised and professionals denounce a loss of meaning in their activity. The whole system of norms and values is being destabilised. When a value is affected, standards are impacted. However, in any system, the norm leads, indicates, directs the behaviour of each individual. The world of health is no exception. By changing the value and consequently the norm, behaviour is also changed. Unanticipated changes in behaviour are the cause of resistance to change and deregulation [1].

In the world of health, the founding value has produced norms that produce roles, behaviours, pathways, training. The system holds together. If it becomes unbalanced, there is a risk of leading to tensions over positions and instrumentalisations in a context where values have changed. The innovative approach aims at a more systemic vision of what health is today, i.e. a holistic approach that corresponds to a country's capacity to participate in the development and maintenance of human capital and the well-being of its citizens. Innovation in medicine is a term that includes new medical devices, medical technologies and expert systems to support professional practices [2].

Faced with this approach, many questions arise: do these innovative practices respond to a new need? Do they aim to fill gaps? Are they linked to political issues around care and health? Do they require new ways of learning and new skills for all health actors?

## II. INNOVATION AND RESEARCH: WHAT LINKS?

The question of innovation cannot be considered without that of research. Biomedical research and in health is part of the field of life sciences research. The American Heritage Dictionary [3] defines life science research as one of the branches of natural science research, which deals with the structure and behaviour of living organisms. Broadly speaking, it includes the sectors of agronomic and food sciences, biology, biochemistry, biochemistry, biochemistry and biochemistry of living organisms. medical and health care. The holistic approach emphasizes interaction with other disciplinary fields: physics, chemistry, mathematics, humanities and social sciences. Health research today cannot be considered without these disciplinary interactions, but also, and above all, without ethical reflection on these practices. Biomedical research, according to the American Heritage dictionary [3], "involves the application of the natural sciences, biology and physiology, particularly to medicine".

Clinical research is defined as "research applied to humans with the goal of advancing health care techniques" [3]. Public health research [4] includes "research activities related to the health and well-being of the population and their determinants, aimed at the production, integration, dissemination and application of valid and relevant scientific knowledge to the exercise of public health functions".

With respect to "health research", the Pubmed database references 5,154 articles in French and 1,274,702 articles in English, a ratio of 0.4%, while the keyword "public health" lists 124,496 articles in French and 4,995,735 in English, a ratio of 2.5%. This shows that health research is still poorly invested as a concept in French-speaking countries. Health research will have to mobilize not only the basic and biomedical sciences but also the human and social sciences. A brief review of the literature reveals an international consensus on biomedical, clinical and public health research, which is not the case when the concept of health research is discussed.

## III. WHAT IS HEALTH INNOVATION?

N. Alter [2] defines innovation as new devices, new medical technologies or innovative expert systems to support professional practices. According to the dictionary alphabetical and analogical of the French language, innovation is the action of innovating. It is the result of an action leading to something new. It is "to introduce into an established thing something new and yet unknown". The verb innover is associated with the verbs change, invent and find. E. Zola wrote "New methods haunted him, launched him into innovations". On the contrary, what is not innovative is characterized by archaism, routine and tradition. Innovation has to do with all time created brakes and resistance. H. de Balzac, said "To innovate nothing is the law of the land".

The corollary of innovation is transformation, change or even resistance to change. M. Crozier and E. M. Crozier and E. Fridberg [5] see change as a process. For change to occur, a system of action must be formed, i.e. new human relationships and new forms of social control must be put into practice. This process will generate actions, reactions, negotiations and cooperation. Thus, sustainable change will be the result of a collective process through which the resources and capacities necessary for the constitution of new games will be mobilized, the implementation of which will allow the system to orient or reorient itself. For these authors [5], "Gambling reconciles freedom and constraint. The game is a human construct. It is linked to the cultural model of a society and to the capacities of the players". The organisation of health and acceptance Innovative practices in this area are not exempt from this process. In sociology, M. Visinand [6] defines resistance to change as "central and inescapable. It's the real black box of ideas for change. This sociological analysis can be complemented by a linguistic and documentary analysis. Resistance to change is defined as by P. Collette as "the implicit or explicit expression of defensive reactions to the intention to change" [7]. For E. Morin, resistance is "forces that oppose the reorganization of behaviours and the acquisition of new skills or in other words, restrictive forces" [8]. On 20 October 2011, the General Commission for Strategy and Foresight, an institution attached to the Prime Minister, proposed two analysis notes concerning health innovation: note 245 which deals with telemedicine and note 255 which deals with multidisciplinary collaboration. These notes are based on a severe diagnosis which shows that France has fallen behind in these two areas. This organisation and the High Council for the Future of Health Insurance are organising a symposium entitled "Innovation and organisation of care" on 3 September 2014. This High Council is committed to a cycle of reflections on the challenges of technical progress for the organisation of care and health insurance. Numerous questions will be discussed based on concrete cases and examples taken at the level of international [9]. For the organizers, the discussions will focus on the advent of major innovations that may be likely to disrupt the therapeutics and conditions of care of This is in terms of quality of care and quality of life in a context where funding margins are shrinking.

For the World Health Organization (WHO), the innovative approach consists of being part of the notion of health system, i.e. looking at a health problem through the entire system that integrates all the actors that will have an impact on it. The WHO wants to identify best practices and techniques throughout the world and bring all countries and health actors to have an innovative approach to their learning. This organization wants to invest in public health geopolitics and to register innovative practices at the international level. In order to identify them, WHO wishes to identify the dynamics of power rivalry, particularly due to the disruption of the global health system. between public and private authorities. The idea is to promote the emergence of health experts who will need to acquire new skills through regular learning. They will be able to deal with increasingly complex events whose determinants are

economic, social, cultural and health-related. The challenge of human capital development lies in the promotion of a non-segmented vision of care with the objective of adapting the individual to his or her environment.

In France, the Haute Autorité de Santé (HAS) produces recommendations. Health professionals remain reluctant to adopt these recommendations. R. Bataillon [10] stresses that if we talk so much about the evaluation of professional practices, it is because we know that the simple distribution of recommendations has little impact on the quality of care. There are a certain number of obstacles to the implementation of recommendations for good practice, because what is at stake is both the way of thinking, of drawing up and disseminating recommendations and their inevitable link with continuous training complementary to initial training. Physicians do not always observe these good practices [11]. One of the explanations is given by Donald Schön, who differentiates between recommendations resulting from studies and the reality of the situation "In the world In the real world of practice, problems do not present themselves to the practitioner as data, they must be constructed from materials, problematic situations, which are intriguing, disturbing and uncertain" [12]. Evidence-based medicine must take into account the reality and variability of clinical situations. It is important to follow the HAS recommendations, but it is also important to learn how to decide, to appreciate the context, to decide whether or not to apply the recommendation, depending on the context and the patient [13]. According to R. Bataillon [10], it is necessary to produce recommendations for new practices by including them resolutely in a co-production with health professionals, by specifying the clinical interest deemed useful for better patient management and by questioning health professionals about their own practices. It also specifies that we should stop talking about methods but rather introduce the notion of approach. Furthermore, he specified that there should be no segmentation between training on the one hand and the evaluation of practices on the other. All these elements contribute to the organisation of a global and coherent professional approach. It is around these principles that the HAS, as part of its missions relating to continuing professional development (CPD), has published a list of methods and procedures that have been the subject of practical sheets that are currently being validated. It must be noted that there is no consensus in France today on the term "innovative health practices". The Health Council of Canada has developed the Evaluation Framework for Innovative Practices (FNEC) and the FNEC Rating Guide, in order to provide clear and methodical indications to evaluate the innovative aspect of health care practices, programs, services and policies. Anglo-Saxons use the term "guidelines" which is an integral part of their practices.

#### IV. ON THE NEED FOR REGULATION OF INNOVATIVE HEALTH CARE PRACTICES

The Health Council of Canada classifies innovative health practices into three categories: emerging practices, promising practices and leading practices. This classification is based on four evaluation criteria: quality of evidence, impact, applicability and transferability. It defines innovation as "a deliberate process of transforming practices through the introduction of a curricular, pedagogical or organizational novelty that is disseminated and which aims at sustainable improvement and successful implementation of these practices". The corollary of this is the assertion that there can be no sustainable innovative practices without training and without research. The innovation process goes through three phases: the pilot phase, the appropriation phase and the institutionalization phase. It is the latter that concretizes the generalization of the practice and its absorption by the system. There is therefore no innovation without generalization. The pilot phase corresponds to the experimentation phase, the appropriation phase corresponds to the generalisation by health professionals who make it a best practice, what Anglo-Saxons call "best practice". A practice becomes a best practice when it has been evaluated both in terms of its process and its effects. It is therefore linked to the world of research [14]. It seems essential to regulate these new practices flexibly and to associate them with valid and certifying training, not only with an evaluation process. It is also necessary to have an approach to training and research that is not only individual or in a stream. It is necessary to target the collective expertise of all health professionals. At the outset, the updating of knowledge is an ethical duty for the professional since he or she is called upon to give the best possible care to the people he or she cares for. Physicians and academics felt this need very early on (as early as the 1950s). This is how postgraduate education came into being. The hospital-university reform of 1958 laid the foundations for this education, but it was not until 1970 that continuing education for all was introduced. In 1996, the reform of Social Security makes medical training mandatory for all practicing physicians [15]. The law of 4 March 2002 concerning the rights of the patient and the quality of the health care system recalls the need for training.medical continues. In 2004, the creation of the HAS and the evaluation of practices were concomitant. This assessment was extended to dental surgeons, midwives and pharmacists with the creation of the Continuous Professional Development (CPD). The HPST law of 21 July 2009 [16] proposed a merger between continuing professional development and evaluation of professional practices. This law inserts Article 59 of the Public Health Code sets out the main principles of the CPD, but also, and above all, the compulsory nature of the obligation and the principles for monitoring compliance with this obligation. The criteria quality of training actions are then defined by decree. The decree of 30 December 2011 sets a single definition of CPD based on common objectives for all health professions [17]. To meet this individual obligation, each professional must follow a program that meets the following conditions: comply with a

national orientation determined by the Ministry or by the Regional Health Agencies if they identify a specific need in their territory; include one of the methods and modalities validated by the HAS after the opinion of the independent scientific commission (CSI) of doctors created by law 2009-879 of 21 July 2009; be implemented by a registered CPD organization with a favorable assessment from the CSI. CPD falls within the scope of service activities within the meaning of the European Union directive. This continuing education system, if it is cross-cutting and multi-professional, will be able to enable the establishment of a culture of innovation shared by health professionals regardless of their initial training.

## V. WHAT PLACE FOR THE PATIENT IN THE PRACTICE PROCESS INNOVATIVE?

It was around the 1990s that public authorities put forward the idea of involving users in the development of health policies. The term user then became synonymous with patient, patient, client, beneficiary and citizen [18]. At the same time, bioethics laws have regulated human experimentation. In 1994, the affirmation of the general principles for the protection of the person introduced in the Civil Code the rules of organization of sectors of medical activities such as those of medical assistance for procreation, transplants or provisions relating to public health or the protection of persons who lend themselves to medical research [19-21]. Research on humans is regulated, including research on new treatments in these fields. In terms of innovative practices, it is a question of a paradigm shift for each individual in the management of his or her health. Beyond new techniques, it is the very relationship of the individual in the face of his illness and health that is invested. But also the way in which the data available to it will be taken into account as an element in assessing the quality of the medical professionals. The concept of the patient-tracer has recently emerged [22]. This "pathway-oriented" method focuses on the overall care of the patient, the interfaces between sectors and to interprofessional and interdisciplinary collaboration, integrating the experience of the patient and that of his or her family members and enabling multidisciplinary and multi-professional teamwork. The patient becomes a key player in assessing the quality of care provided to him/her.

This method for improving the quality and safety of care is set out in an experimental guide [22]. The HAS recommends using this methodology during certification visits to establishments. Acceptance of new methods of care requires not only the support of the person being treated or to be treated, his or her family and friends, but also that of the health professionals themselves.

## VI. INNOVATION AND ETHICS

Etymologically, ethics comes from the word Ethos. We could define ethics as a set of convictions, social rules by which a human group organizes itself and makes its life social possible. The great Larousse dictionary defines the concept as "the philosophical part which studies the foundations of morals and as a set of rules of conduct or principles. For more than 50 years, the emergence of medical ethics in general and health ethics in particular has demonstrated the questioning of professional health care practices. If any debate.

Ethics is about values and the meaning of action, it also depends on a legislative, philosophical, historical and socio-professional context. For R. For R. Misrahi, "ethical reflection is first and foremost awareness of the need to act. of a problem before being the solution" [23]. 23] Different branches of ethics can be distinguished, including utilitarian ethics, which considers an act to be good or bad depending on the consequences it produces. In other words, utilitarianism asserts that a good act is the one that generates the greatest intensity of pleasure or happiness over the pain of the suffering person. Deontological theories are part of normative ethics. This theory does not consider the consequences of whether an act is good or bad. It is the intrinsic quality of an act that defines whether it is good or bad. The deontological values underlying this theory are predispositions to perform one's duty according to a know-how and a know-how of being. Deontology preserves the possibility of withholding, at least momentarily, exceptionally serious information, but encourages giving the sick person all the information he or she expects. Beauchamp and Childress [24]

- have identified four founding principles for ethical reflection:
- autonomy and freedom;
- respect and beneficence;
- justice and fairness;
- confidentiality and truth.

Contemporary reflection in health ethics is based on these four principles. With regard to innovative health practices, these principles should be respected because they take into account not only of the merits of the act but also and above all of the actors and, above all, of the patients. According to J.F. Braunstein [25], the problems linked to the social acceptance of innovation appear to be as complex as they are opaque to innovative entrepreneurs. For this author, there is a tangle of notions and variables that prevents any rational reading of the acceptance or rejection of an innovation by the general public. In the case of health innovations, it is easy to imagine the significant, even difficult to quantify, risk that will be involved. The variables that determine the so-called "social acceptability of the innovation" must be identified [25]. We Let us add that it is necessary to identify the obstacles to innovative practices.

Experiments aimed at making the patient responsible for his or her own diagnosis in chronic pathologies such as diabetes, using new technologies (I-phone, tablets, etc.) will have to be perfectly tracked and analyzed, both for users and for those who are reluctant to use them. The question that arises in these experiments is that of the benefit/risk, that of the decision between the patient's quality of life outside any care-giving intervention and that of the patient-caregiver relationship in this new context. As G. points out Canguilhem [26,27] "In What should be borne in mind is the care of the patient as a whole and his or her place in the therapeutic process, and in order to do this, the scope of the definition of the normal and pathological. "Neither the living nor the environment can be said to be normal if they are considered separately. Normality can only be assessed in their interaction. For example, in the case of pain chronic, the patient must be able to regain normality in the experience of his or her pain and establish new rules of life. Thus, "Healing means giving oneself new and sometimes higher standards of living.

To the old ones", so necessarily never identical. For G. Canguilhem [27], the concept of normal is produced according to 2 types of procedures: the statistical methods that define a standard, its mean, the mean of the normal, and the mean of the normal. and its standard deviations, societal and moral assessments that encompass ethics and politics: "The physician must take into account the individual and subjective dimension of the disease, the conscience and the feeling of being sick". We are invited to reflect on innovative practices, from an ethical, non-judgemental point of view. of values but in a global vision that is caring, societal and without a priori stigmatization. The merits of a new practice will have to consider the following question: we can do it, we know we can do it. do it, but do we have to do it for the good of the patient?

## VII. INNOVATION AND HEALTH SUSTAINABILITY

Although the term "sustainability" emerged in the 1980s and has become part of the mainstream vocabulary, sustainability and sustainable development remain paradoxical notions with a blurred, and widely controversial, particularly in the health field. The need to introduce these concepts into the world of health today makes it necessary to reflect on public and private normative frameworks, such as the following the evaluation of actions and measures taken in a coherent approach. It is necessary to define a content specific to sustainable development: what is its specificity? What does it have to do with growth, poverty, biodiversity, climate change?

The first principle of the Rio Declaration in 1992 places health as a major concern of sustainable development and establishes the precautionary principle. Taking into account the environmental factor and the interactions of individuals with the environment are a constant concern of contemporary medicine. Science and technology are more than ever involved in our major societal problems: controversies over genetically modified

organisms, climate change, the explosion of nanotechnologies, etc. Understanding these issues requires a better understanding of the social dynamics of the production of knowledge and innovation. Understanding the different forms of science/society linkages and the main social mechanisms that will be experienced by the future generations. the sciences (institutions, organisations, exchanges between researchers, construction of content) must be understood in order to better understand how society and its decision-makers constrain the development of new knowledge and the development of new technologies. the development of science and technology. In terms of sustainable development and its interactions with health, it is important to understand the approach. The procedural approach according to F.D. Vivien et al. [28] consists of defining a priori the development of the principles and decision-making procedures implemented. According to these authors, sustainable development must be considered in its economic vision, in its heritage and its cross temporality as follows than in his evaluation. Sustainable development should not be seen as a soft social norm but as a major societal challenge [28]. Questions arise and have been addressed in the course of the European conference in Brussels [29] to find recipes for sustainable health care in a context of demographic change and economic constraints, pressures on health care systems, and the need to ensure that the health care system is sustainable. extraordinary health systems. The main themes were: how to conduct sustainable health care? How to share pan-European best practices in health care? sustainable health? There is evidence that current solutions focus more on reducing costs rather than investing in keeping people healthy and productive.

The innovative approach is to focus on sustainable health care to ensure that people reach old age in good health. Recent decades have been characterized by an increasing awareness of the importance of the environment in our daily lives [30]. 30] "Climate change has had a profound impact on our health. Industrial as well as domestic pollution is a cause for concern, often justified, due to frequently perceptible meteorological conditions" [31]. M. Boulangé and G. Kanny specify that it should not there is only a pessimistic approach to the effects of a harmful environment on our organisms, but there are antidotes. They are inspired by the naturalist Jean-Jacques Rousseau to aspire to the benefits of a comforting nature "I am surprised that baths and the healthy and beneficial mountain air are not one of the great remedies of medicine and morality. Perhaps it is in this approach that tomorrow's innovative health practices will find their essence. This idea, which combines the sustainable adaptation of the individual to his environment, meets the very definition of health, i.e. finding a physical, mental and social balance and leads to the concept of environmental medicine.

## VIII. CONCLUSION

Innovative practices bring challenges and issues. The first are those of trust between health professionals and between practitioners and patients. Without this prior trust, it is impossible to have a congruent caregiver-caregiver relationship. The challenges of efficiency (quality and cost control) of innovative practices in a health system are faced with the obligation to make the best use of money at his disposal. Regulation of practices is a sine qua non for the acceptability of controlling expenditure, based on criteria deemed legitimate by both professionals and patients. In order to find lasting solutions to the environmental challenge, it is necessary to involve all stakeholders: healthcare professionals, patients, politicians and economists. We are faced with logics that sometimes converge and often diverge, with conflict situations and power issues. Believing in the involvement of health actors is the whole issue of health sustainability. We must not be afraid of change or novelty. The right attitude is the openness and involvement of all stakeholders. Identifying the issues at stake in the health field is the major determinant in finding solutions to the major challenges ahead. Finally, the ethical issue is paramount: the right care aims to respond to a fundamental human demand, that of being treated as well as possible and in the best conditions in a changing environment. And perhaps this can be applied to medicine as proposed by Dr F. Baumann, this reflection reported by André Malraux: "The most extraordinary thing is that it undoubtedly makes sense" [32].

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