Economic Sciences, Management and Commercial Sciences Review | **Volume: 12 / N°: 02 (2019), p874-893**

Best practices in the integration of sustainable development into health care organizations management in France.

KHALFAOUI Amar
University of M'sila
amar.khalfaoui@univ-msila.dz

Received: 19/05/2019 **Accepted: 13/12/2019** **Published:19/12/2019**

Abstract:
This article aims to identify the economic, environmental and social impacts of hospitals, the role they must play and the challenges they face in achieving sustainable performance that ensures sustainable health development.
The document includes the definition of sustainable health development and the role that hospital organizations can play in improving their sustainable performance and the tools that can help their integration into management.
The paper discusses the experiences of some French health organizations in the field of sustainable management and the possibility of benefiting from Algerian health care organizations.
Keywords: sustainable development, hospital organizations, environmental performance, sustainable health development.
Jel Classification Codes: Q01, Q56, O19, M190.

Corresponding author: *KHALFAOUI Amar,* E-Mail: amar.khalfaoui@univ-msila.dz

1. Introduction

Health is intrinsically linked to sustainable development, the purpose of which is the human being. The balance between the economical and the social environment is meaningless only if it is geared towards the human being and meets his basic needs. As such, health is a vital need, and is not only about not being sick, but a state of complete physical, mental and social well-being.

A health policy, therefore, is not only to treat but also to make prevention, to integrate the whole dimension of the human being and in a systemic way.

The world ecological crisis impacts health. Day-to-day, exposures to pollution, electromagnetic waves, food quality, health at work and more particularly our region which has been intolerably neglected - impose new questions on our lifestyles, on the environment and on inequalities.

Although health organizations have an important role in the socio-economic life of humans, statistics have shown that they are a source of pollution.

In doing so, we ask the following question: "**What are the tools of sustainable management of health care organizations in France?**"

There are thousands of published articles and researches on sustainable development in healthcare and I have chosen two studies which are more relevant for my study:

First study: Federico Lega, Anna Prenestini and Peter Spurgeon, ***Is Management Essential to Improving the Performance and Sustainability of Health Care Systems and Organizations?*** A Systematic Review and a Roadmap for Future Studies, 2013 (Lega F, Prenestini A, Spurgeon P., 2013, pp. S46-S51) .

This study presents and discusses the streams of knowledge regarding how management can influence the quality and sustainability of health systems and organizations. Through the analysis of 37 studies, the researchers found that the performance of health care systems and organizations seems to be correlated with management practices, leadership, manager characteristics, and cultural attributes that are associated with managerial values and approaches. There is also evidence that health care organizations run by doctors perform better than others. Finally, they provide a roadmap that indicates how the relationship between the management and performance of health systems and organizations can be further and more effectively investigated.

Second study: Malliga Marimuthu, Hanna Paulose, ***Emergence of Sustainability Based Approaches in Healthcare***: Expanding Research and Practice, 2016 (Malliga Marimu, Hanna Paulose, 2016, pp. 554-561).

The study explores the scope of sustainability practices in healthcare by systematically examining studies conducted on healthcare related issues within the context of sustainability. The review is focused on three main conceptual aspects – dimensions of sustainability practices in healthcare, drivers of sustainable practices within the industry and strategies to implement sustainability effectively in healthcare. Relevant literature on sustainability in healthcare is referred to address the developed research question. Based on the identified expanding dimensions of sustainability research and practices, future research insights are proposed as conceptual models that reflect the scope of sustainability practices in healthcare.

The answer to this problem will have three parts. The first part will focus on the definition of health organizations and the issue of sustainable development. As for the second part, it will be devoted to the sustainable management tools of health organizations; the third part presents the experience of health organizations in France in terms of sustainable management development.

2. Sustainable development in health care organizations:

Thanks to its highly technical activity and the great diversity of its missions and resources, there is no doubt that the hospital sector must be concerned about its ecological impact. But, beyond that, and considering the economic and social weight of this sector in France, it is in a broader perspective that the responsibility for health care organizations arises (Vernet, 2018)**.**

2-1- The concept of sustainable development “Historic and definition”:

Sustainable development is undoubtedly one of the most publicized themes today. Two world-wide events took place: in 1992 in RIO: the United Nations Conference on Environment and Development; and in 2002 in Johannesburg: the Second Earth Summit under the renewed aegis of the UN. (DETRIE, 2005, p. 41)

Sustainable development was defined in 1987 by the World Commission on Environment and Development (Brundtland Report: "Our Common Future" as: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs". (Deblonde, 2011, p. 8)

Sustainable development (sometimes called sustainability) is based on three pillars:

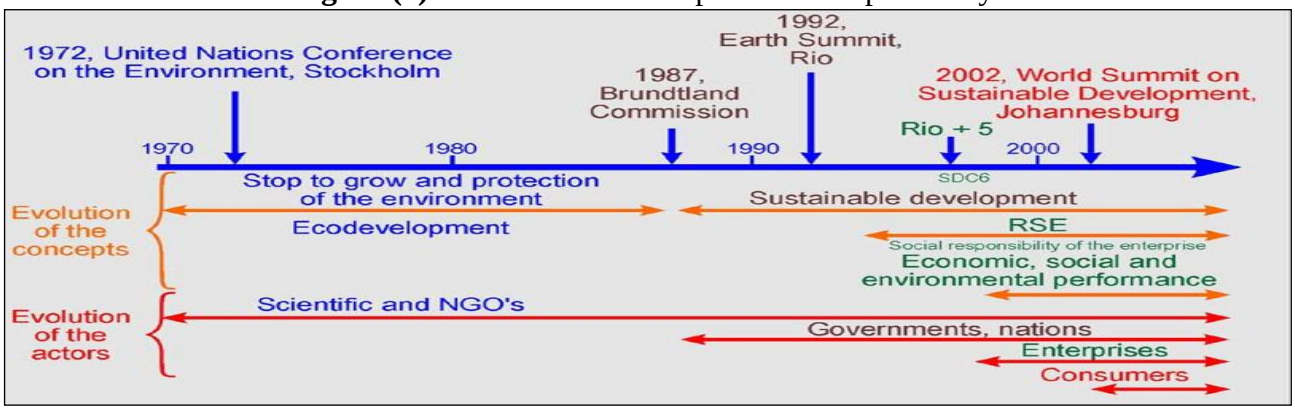
(Cohen-Bacrie, 2006, p. 15)Economic development: the creation of wealth and the improvement of material and industrial conditions. (It is neither a question of curbing the emerging countries nor making the developed countries regress).

- The environmental dimension: the protection of the environment and the rational exploitation of resources,
- The social dimension and equity: this dimension aims at meeting the social needs of human beings and improving health, education, employment...

The purpose of sustainable development is to find a stable and coherent balance between these three issues.

The goal of sustainable development is to create wealth, but by "consuming" less environment and contributing to social progress.

Figure (1): Sustainable Development Concept History



Source: «THE PILLARS OF SUSTAINABILITY» document available on site:
https://dspace.nwu.ac.za/bitstream/handle/10394/2252/Schutte_IC_Chapter2_Sustainability.pdf

2-2- The problem of sustainable development in health care organizations:

Progression of deserts, poverty, epidemics; deforestation, global warming, global and local pollution ... the idea of sustainable development was born from a necessity: the environment and social not too neglected in the current world system (REYNAUD, 2006, p. 3). To make the connection between SD and health, let us recall the definition of health given by the World Health Organization (WHO):

"Health is a complete state of physical, mental and social well-being, and not just an absence of disease or infirmity."

This definition highlights the notion of well-being, which is largely linked to quality of life, one of the principles of SD (Blanchette, 2005, p. 5).

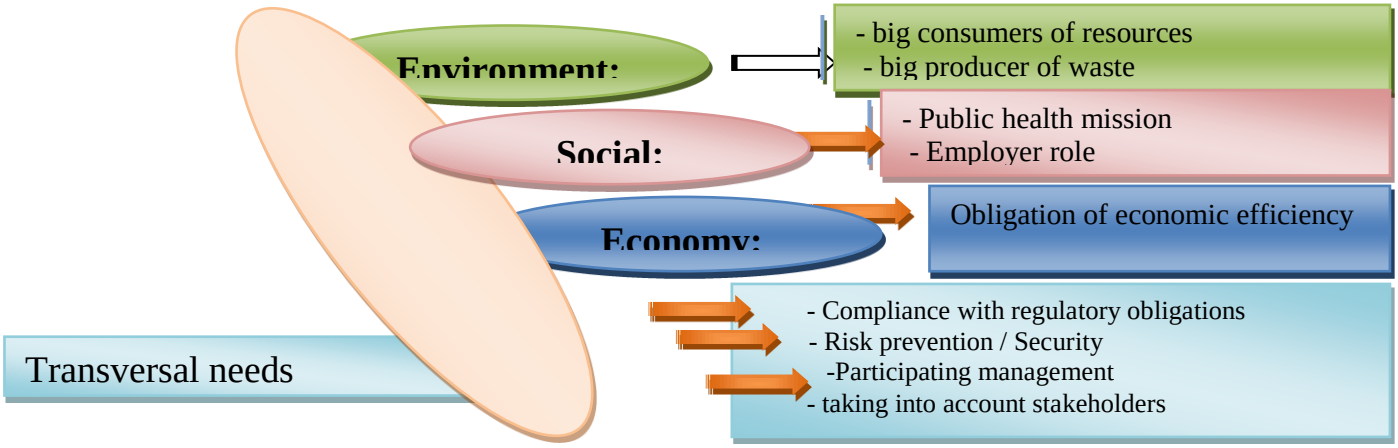
Healthcare organizations have been opposed to the environmental issue for several years because of the volume of its equipment and the energy consumed. They have a considerable impact on the environment (Ulli Weisz, Willi Haas et autres, 2011, p. 192) . The hospital sector

manages its waste and radioactive sources, and ensures the prevention of toxic and chemical risks.

2-2-1 - Sustainable development and the determinants of health:

Sustainable development has 3 dimensions, as shown in Figure 2.

Figure (2): Sustainable development issues for health care establishments



Source: "Sustainable Development in the Hospital Environment" document available on site: www.qualite-securite-soins.fr/app/download/.../11-schneider-develppt-durable-indic.com.

The figure illustrates the links between the main determinants of health and the three pillars of sustainable development (social, environment and economy). The use of a holistic approach incorporating the three pillars of sustainable development should lead to improved health, as this approach will have an impact on the determinants of health. In other words, by addressing the main determinants of health, sustainable development becomes possible and paves the way for healthier Algerians. The main determinants of health associated with the Social/Culture pillar are: social status; support networks; education; the social environment; the hygiene of life; the ability to adapt; healthy development of children; sex and culture. The main determinants of health associated with the Nature/Environment pillar are: the physical environment (clean air, clean and abundant water, food security); biological and genetic heritage. The main determinants of health associated with the economy pillar are: income; employment and working conditions.

It has become an essential component of business and healthcare strategy. The world of health is not an exception. Through the respect of the norms, the research of the health security in all its components (the water, the hospital waste, the infectious risk ...) and the risk management. Sustainable development in health makes it possible to reconcile existing quality approaches (le développement durable en milieu hospitalier):

- The values, missions, activities of a health facility and its notions of social and environmental responsibility;
- The process of continuous improvement of quality in a perspective of continuity and sustainability;
- Risk management with environmental, social and economic risks;

- A respectful care system of humans and their environment.

2-2-2- The challenges of an eco-responsible hospital:

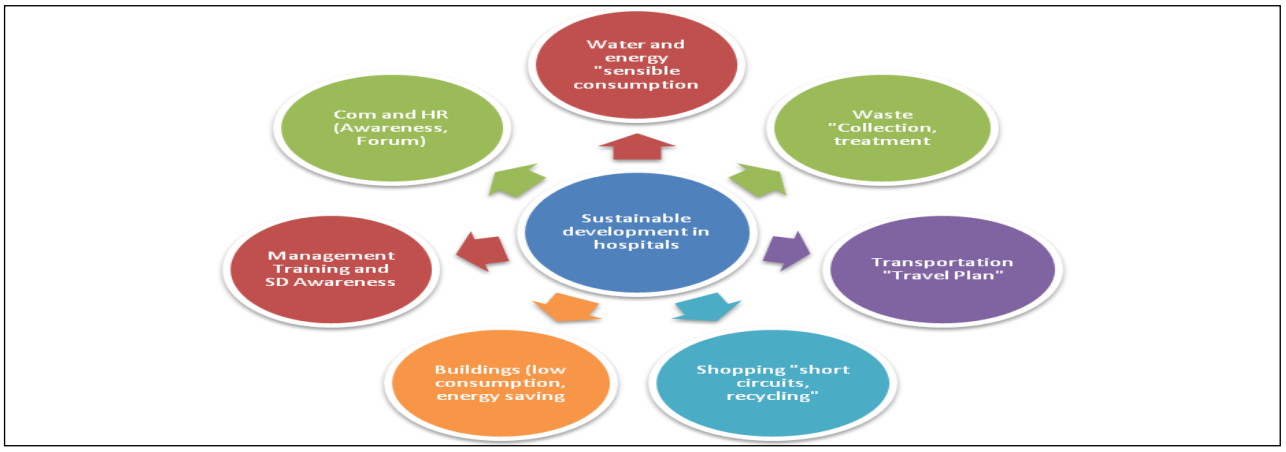
1. The reduction of energy consumption and dependence on fossil fuels;
2. The reduction of water consumption and the issue of liquid effluents;
3. Waste reduction, by volume and cost of treatment;
4. Reduction of greenhouse gas emissions;
5. Protection of biodiversity;
6. The contradiction between individual care and the demands of society.

2-3- The main axes of integration of sustainable development:

Taking social and environmental responsibility into account is not a new phenomenon for the business world. Even though it has been poorly documented from a historical point of view, rare examples in the literature demonstrate the importance of taking environmental and social aspects into account in the activities of companies (Moquet, 2005)**.**

The integration of sustainable development in the daily management of health organizations is based on 7 main axes. The following figure summarizes them:

Figure (3): Managerial approach to sustainable development



Source: Sylvaine Castellano and others, Sustainable Development and Public Health. Towards a new model of Egalitarian health, Paper of Management Sciences 2012/1 (No. 253), P.11.

The diagram above presents seven axes to integrate the sustainable management in the managerial practice of the health establishments; we explain it as follows (Castellano, 2012)**:**

2-3-1- The waste management:

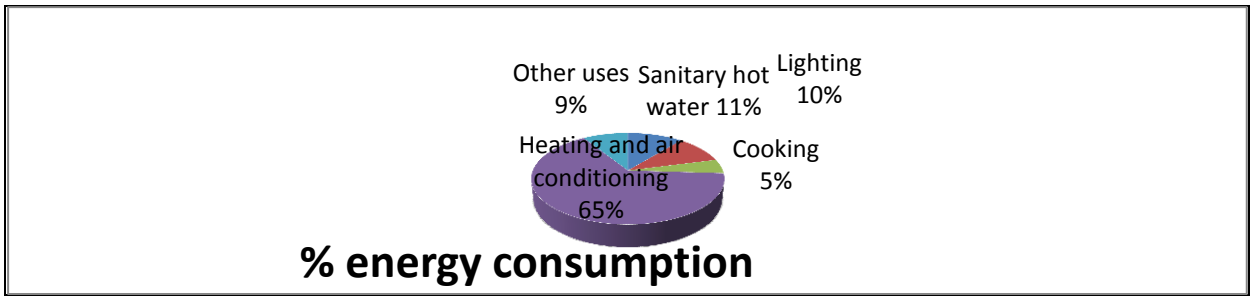
Because of their missions and their nature, hospitals are subject to a specific regulatory and normative framework such as compliance with hygiene rules, the protection of hospitalized patients and staff, and the non-rejection of pathogenic risk substances (infectious agents). , radioactive ...). Also, the establishments are required to ensure the collection and the treatment of the waste resulting from their activity.

2-3-2- The control of energy:

Healthcare organizations are big consumers of energy. The various specific positions such as cooking, laundry, sterilization, radiology, internal laboratories and operating theaters consume a lot of energy (Schneider, 2009). The energy bill in France represents 1.5 to 3 % of

the budget of an establishment. According to the French Environment and Energy Management Agency (ADEME), the health sector would even represent 11% of energy consumption in the tertiary sector. Forecasts show that by 2050, greenhouse gas emissions will have to be divided by 48 and the hospital sector will of course have to contribute to it.
Architects and engineering companies now offer hospitals alternative sources of energy and energy services such as the biomass boiler. This will cover two-thirds of the energy needs to heat the main site of the establishment through the consumption of 20,000 tons of a mixture of bark and wood chips.

Figure (4): Energy consumption of health organizations

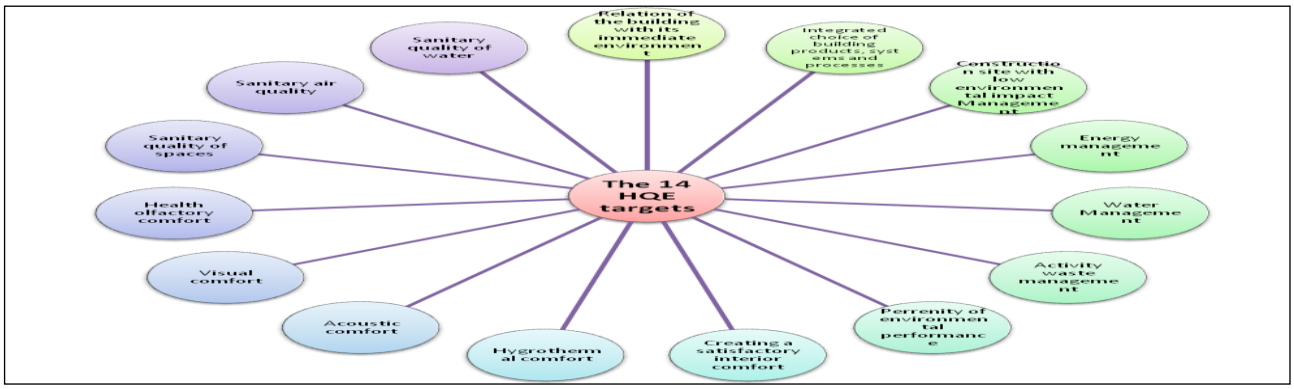


Source: Euro-Health, "Sustainable development in health care organizations ", Monthly information on the bio-health markets – No. 18 - September 2008, West 59120 LOOS - LILLE METROPOLE, p.2.

2-3-3- The HQE approach:

HQE Health Buildings certification to integrate the environment in the logic of construction and promote the environmental quality of operations financed by the Plan .it aims to obtain the Environmental Quality of the Building (QEB) by the establishment of a management system of the operation (SMO). This is complemented by an evaluation system that constitutes certification. The HQE approach aims both at controlling the impact of the building on the external environment and creating a satisfactory interior that takes into account the comfort and health of the user. Two requirements that can sometimes appear contradictory. These are translated into 14 targets to be achieved, which is then the environmental quality of the building. These 14 targets are structured around four themes: eco-construction, eco-management, occupant comfort and sanitary quality of buildings.
Control of impacts on the external environment, site and construction:

Figure (5): Management requirements for sustainable development



Source: Euro-Health, "Sustainable development in health care organizations", Monthly information on the bio-health markets – NO. 18 - September 2008, West 59120 LOOS - LILLE METROPOLE, p.6.

Target selection and relative performance levels to be achieved should be prioritized according to the project of the institution. The SMO is then a powerful tool, specific to each operation, to reach the QEB by specifying the organizational modalities to be put in place between the different actors of the project, and by allowing the choice decision justified by requirements considered as having priority.

The performance level for each of the targets is divided into 3 levels:

- "**Base**": which corresponds to the minimum acceptable performance for a HQE operation;
- "**Performant**": level corresponding to good practices;
- "**Highly Performant**": which corresponds to a level calibrated according to maximum performance in operations with high environmental quality?

If the performance levels may be different for the 14 targets, the QEB profile must provide, so that the HQE certification can be awarded: 3 minimum targets at the "high performance" level, at least 4 targets at the "performant" level and a maximum of 7 targets at the "base" level. The next step may be the establishment of an environmental management system in accordance with the requirements of ISO 14001, based on the improvement of environmental performance, since the HQE approach is applied to all operations.

Here again, organizations should look to this certification soon, and therefore, in this context, to consulting companies for the implementation of the appropriate strategy. From a simple mathematical point of view, there are currently only 2 ISO 14001 accredited hospitals in France, Delay clinics in Bayonne and Champeau in Béziers, whereas there are 85 in Germany and 11 in Spain. In addition, according to the 2008 Sustainable Development Barometer, 5% of the responding organizations would have developed an ISO 14001 certification process. An objective included in the establishment plan for 60% of them.

In addition, health organizations should be encouraged to move towards this approach with the planned implementation of a sustainable health indicator, IDD health, by the C2DS to measure the ecological footprint of each establishment. According to “Olivier Toma”, President of C2DS, this could become a selection criterion for patients who have the choice between several organizations.

2-3-4- The strategy of socially responsible purchasing:

Socially responsible purchasing is the flow of business between buyers and social utility structures. They are a lever to develop the social responsibility of organizations (i.e. the responsibility of the actors vis-à-vis the effects they have on society), and more broadly to take into account the principles of sustainable development.

In France, hospital purchases are a major driver of performance for healthcare establishments, the following points show the causes of this importance given to socially responsible purchasing (Directions générale des soins, 2016)**:**

- Hospital purchases represented 18 billion Euros in 2009;
- Purchases are the second largest expenditure after human resources;
- In a health facility, purchases usually count for:

- ~ 20 to 25% of operating expenses;
- ~ 70 to 75% of investment expenditure

Beyond the aspects strictly related to building, all the suppliers of the hospital or of the care establishment in general, must now seriously consider the environmental component. And this concerns all suppliers, from the service provider to medical device suppliers to maintenance products, light bulbs and electrical tubes or graphic paper. Indeed, if it can appear as a theme in fashion, as for 22% of French, its consideration by public actors is growing. The French state is also aiming to become one of the most committed countries in Europe (EU) in terms of sustainable public orders. To this end, it is committed to implementing a national strategy for sustainable development that provides for a National Action Plan for Sustainable Public Procurement (PNAAPD) to meet this objective by 2009. The ANAAPD sets all 3 years (currently 2007-2009) quantified targets across all jurisdictions in terms of, for example, reducing carbon emissions, saving water, reducing energy consumption, recycling paper or new constructions HQE or HPE (High Energy Performance). As a result, the public procurement code now imposes sustainable development objectives in the definition of needs as well as in the execution of the contract.
The colossal buyer represented by the hospital is asked to play a role to favor this approach. Indeed, with a budget of 65 billion Euros, and the diversity of its purchases, the hospital can influence both the practices of users but also the industrial policy of suppliers.

3- The fields of sustainable development in hospitals:

These 8 fields of action come from the synthesis of the convention relating to sustainable development, (synthesis of Primum Non Nocere). This agreement, signed on May 5 between the State and the health, social and medico-social federations in France, marks the main fields of action of organizations for sustainable development. The 8 commitments to remember are (OLIVIER Toma, 2017):

3-1- The management of sustainable development:

-Promoting the awareness of elected community leaders and directors of organizations services of the importance of sustainable development in the strategy of their institution, particularly through the action plan of social work and social development.
-Including sustainable development in the establishment project.
-Clarifying responsibilities for issues related to sustainable development in the institution.
Setting up programs or strategic action plans for sustainable development (environmental charters, ISO 26000 approach, ISO 14001 certification, EU environmental management system and Eco Management and Audit Scheme (EMAS ...), High Quality Environmental approach (HQE).
-Formalizing and monitor indicators measuring actions having an environmental or societal impact.
-Training their staff - and in particular professional or elected senior managers - in the issues and the adoption of behaviors that contribute to their sustainable development policy.

3-2- Communicate on the issues of sustainable development

Relay all the information and recommendations formulated by the health, social and medico-social sector federations concerning sustainable development, deploy pedagogical actions for sustainable development through awareness-raising actions involving staff and patients, users, accompanied people, suppliers and / or partners.

Diffuse messages on sustainable development via the available communication media.

Engage and develop eco-communication approaches that favor the eco-design of media and communication tools.

3-3- Well-being and health:

To develop the sustainable management of human resources, to contribute into the improvement of the health of the personnel and the improvement of the working conditions, to make from establishments and health services and medico-social actors of the social progress.

3-4- Socially responsible purchasing:

Healthcare and medico-social establishments, by the volume and diversity of their purchases, can have a significant impact and a ripple effect in many professional sectors by integrating into the choice of products and services they buy, the social or societal criteria.

The choice concerns the products but also that of the services chosen, and in particular the numerous external providers to which the health establishments call for certain activities (catering, laundry, sterilization, etc.) (ADEME, 2018)**.**

Inform and encourage suppliers in the hospital and medico-social sector to engage in this process. Encourage them to offer eco-designed, eco-socially or socially responsible products and services.

3-5- Preservation of resources: We can summarize them into the following points:

- Inform and encourage central purchasing organisms to integrate common criteria for respecting eco-socially responsible criteria in the choice of their suppliers;
- Dematerialize procedures and actions (invoicing, purchasing, supplies, ...) to train their buyers in responsible purchasing so that they integrate sustainable development criteria in their activity;
- Review their purchasing policies by integrating the concept of the overall cost of a product or service (taking into account the impact of a product or service at all stages of its life cycle: manufacturing, supply, storage, distribution, use, elimination);
- Optimize supplies to limit the frequency of deliveries and packaging;
- Undertake a reduction in packaging and a shared responsibility with the manufacturers for the elimination of packaging;
- Undertake a reflection on the single use, without however jeopardizing the achievements in terms of hygiene of care and reduction of nosocomial infections;
- Promote integration with circular economy models when possible;

- The reduction of water consumption in health, social and medico-social establishments and services is a priority objective.
- Integrate High Environmental Quality (HQE) criteria into new building programs.
- Encourage the consideration of global warming in summer comfort requirements in new building programs.
- To tend to very high energy performance objectives for buildings involved in tertiary activities, while taking note of the specificities related to healthcare activities.
- Conduct energy audits of buildings to know the energy consumption per m^2, with systematic inclusion in the specifications of an analysis of the possibilities of recourse to renewable energies.
- Enlist in the "sustainable building" plan as part of renovations, tending towards buildings with the highest energy performance.
- Pursue and favour, as far as possible, the use of renewable energies during new constructions, heavy renovations of buildings or replacement of thermal installations with regard to technical and economic possibilities (solar, wood, geothermal, etc.).
- To this end, health, social and medico-social organizations and services will be able to put in place measures to monitor the share of renewable energies in their energy consumption and to solicit public support for major installations of heating and cooling networks from renewable energy.
- Conduct GHG emissions assessments and adopt a prioritized action plan to reduce these emissions, and adapt to the effects of climate change.
- Communicate the results of these reviews and inform about opportunities to reduce GHG emissions through behavior change.

3-6- Waste management: Health organizations can ensure better waste management by respecting the following points:

- Inform and train stakeholders on existing regulations (dangerous substances, waste). Carry out waste diagnoses on the different types of sites;
- Identify existing good practices and generalize them on all types of sites;
- Sensitize all professionals to the recovery at source of toxic waste and unused drugs;
- Encourage the establishment of a report on the management of liquid effluents in the establishment and/or the service, to ensure the identification of the potential risks generated for the operation of collective wastewater treatment systems or the aquatic environment, and studying the feasibility of a liquid effluent management plan;
- Reduce the production of waste at its source, for example by focusing on products with less packaging, bulk products or bulk packaging, and having a specific action to reduce the consumption of paper, cardboard, plastic film;
- Sort and collect waste selectively to send them into specific sectors;

- Provide personnel with the material means to act in favor of prevention and sorting (sorting system for paper, bin in canteens for waste bios, composters in green spaces, terminals on each site for batteries ,. .);
- Train the staff to sort the waste, ensure the training of the maintenance staff to respect the sorting instructions.
- Adopt responsible practices for paper consumption.

3-7- Sustainable mobility:

Integrate into their fleet clean and economical vehicles or, at least, eligible for the "ecological bonus", except for service requirements.

Set up establishment relocation plans.

Promote the use of public transportation and alternative modes of travel for the private car for staff, patients whose health permits, users, accompanied persons, their entourage, and visitors.

Set up partnerships with local authorities and local transport companies in order to improve the service and to adapt public transit timetables close to their site.

Offer eco-driving training to staff using a vehicle (ambulance, technical services, internal transport,).

3-8-- Information Systems:

-Integrate environmental criteria into consultations and the choice of suppliers (like the Energy Star label for example).

-Review their overall purchasing policy by integrating the notion of overall cost of IT supplies (equipment and consumables).

-Initiate a cost study of the electricity bill related to the use of their information system within their organizations and services to reduce consumption and costs.

-Define a printing strategy to reduce consumption and office costs (paper, printers, fax, ...).

-Sensitize and train SIS staff to integrate sustainable development criteria into the reflections and actions leading to the development of SIS in organizations and services.

-Sensitize and train the users of the computer equipment to a reasoned practice of the tools at their disposal.

-Set up the web-conference to limit travel.

-Has something been forgotten?

-Has the subject of air quality been forgotten? A major challenge to consider.

-Chemical risks, the prevention of exposure to electromagnetic fields, nanoparticles, endocrine disruptors, the preservation of biodiversity and the eco-design of care are all topics to be included in our strategies.

4. Sustainable management tools for health organizations:

4-1-The barometer of sustainable development in health:

The barometer of sustainable development in health, social and / or medico-social organizations and services is an annual survey conducted among all French organizations. It

makes it possible to measure the consideration of sustainable development and to identify ecologically and socially responsible actions.

4-2- The Health IDD tool:

It is a self-diagnosis tool specific to the health sector. It is the first indispensable step of a much more global strategic approach.

4-3- HQE certification:

HQE certification concerns the environmental quality of buildings.

4-4- The ISO 14001 standard:

This standard deals with environmental management and makes it possible to set up an environmental policy that reduces the impact of activities on the environment.

This standard of voluntary application, no text of law obliges an organization to set up its requirements. The purpose of ISO 14001 environmental management is to help an organization better manage its sources of impact, improve its environmental performance and wait for the objectives it has set itself to improve its environmental performance (Baron Valérie, 2007, p. 7) **(Baron, 2007)**.

4-5- The integrated management system "Quality, safety and environment":

An integrated system goes beyond the loyalty of customers; also seek the protection of the environment and the safety of people at workstations. An integrated system will formulate and implement a quality-safety-environment policy (QSE), orient the company in a logic of control of the risks of improvement of its performances in matters of environment, health and safety of its staff (Florence Gillet-Goinard, 2006, p. 15)**.**

The policy and objectives of an integrated management system are:

- Statement and commitment of the management (Bernard Froman et autres, 2007, p. 63);
- Communication and motivation of all staff;
- Dysfunction prevention policy:
    - Prevention of nonconformities (ISO 9000).
    - Prevention of accidents (regulation, SEVESO directive, BS8800, OHSAS 18001 ...).
    - Prevention of pollution (regulation, eco-audit, ISO 14000).

4-6-The ISO 26000 social responsibility standard:

Corporate Social Responsibility (CSR) is a concept that refers to companies' voluntary integration of social and environmental concerns into their business activities and stakeholder relations. CSR allows companies of all sizes to contribute to reconciling economic, social and environmental ambitions in cooperation with their partners (Mérylle AUBRUN et autres, 2010, p. 22) **.**

ISO 26000 presents the general principles of liability. These principles are:

- The admissibility;
- Transparency (accountability);
- Ethical behavior;
- Recognition of stakeholder interests;
- The principle of respect of the laws;

- Consideration of international standards of behavior;
- Respect for human rights.

The non-rectifiable ISO 26000 can provide guidelines for operationalizing Corporate Social Responsibility and health organizations.

4-7- The Agenda 21

Agenda 21 is a global and concrete project whose objective is to progressively and sustainably implement sustainable development on a territorial level.

Agenda 21 invites the entire international community to act in favor of sustainable development. Associations, businesses, individuals, and communities are all called upon to be actors of change in multiple domains: poverty, health, housing, air pollution, marine, forest and mountain management, water resources, agriculture and waste management (L'Agenda 21).

5. Good practices in sustainable development of health organizations in France:

In France, many decisions and actions are implemented at the highest level to promote sustainable development in political and managerial decisions, particularly in the health sector. We list here the main ones (Hervé LECLET, 2011, pp. 7-8) **:**

In 2005, the concept of sustainable development and the rights and duties defined in the Environmental Charter were incorporated into the preamble of the French Constitution. This reflected France's strong commitment to the European Sustainable Development Strategy (ESDS).

In 2007-2008, the Grenelle Environment Forum committed public organizations and announced strong objectives for sustainable development.

As part of the Grenelle Environment Forum, a framework agreement was signed on 27 October 2009 between the Ministries of the Environment, Health and Sports, the State Secretariat for Ecology, the Environment and Energy Management Agency (ADEME) and the hospital federations (FHF, FHP, FEHAP). This agreement involved health organizations' commitment to the Grenelle Environment Forum and created a barometer of sustainable development in health.

The barometer of sustainable development in health is a set of questions addressed to health organizations to know and share actions and experiences in the health sector. It is updated annually.

In March 2009, a partnership was signed between the High Authority for Health and the Committee for Sustainable Development in Health (C2DS). The objective was to promote sustainable development in health organizations, particularly through the certification of health organizations by the HAS.

5-1- Report of the experiences of French Health Organizations in the fields of sustainable development:

Health organizations (hospitals, clinics, etc.) number 3,000 in France and represent more than one million jobs. Therefore, there is a significant part of the society which is directly

concerned, without mentioning the numerous partners involved (suppliers, service providers ...). They receive more than 13 million people who benefit from their care and social assistance, but they are also major emitters of waste and consumers of energy and water. It is therefore clear that health care organizations have a responsibility within society, which encourages them to engage in sustainable development, for lasting relationships with all stakeholders in society (Cabinet LAMY Enirenment, 2017) **.**

In this part, we will expose the efforts of some French health organizations in terms of sustainable development:

5-1-1-Establishment Of a Sustainable Development Strategy:

Table (1): Presentation of sustainable development strategies put in place

The facility	**The actions conducted**	**Communication "published report"**
University Hospital (UH) of Angers	Strategic orientations for sustainable development adopted in 2008 by the different organizations. Establishment of a commission for sustainable development. Integration of Sustainable Development into the 2011-2012 Transition Settlement Project.	
UH of Bordeaux	Enlisted in a sustainable development approach since 2008. Adoption of an Agenda 21 (2010-2015) action plan based on seven strategic themes. Signatory of the 10:10 commitment by the Good Planet Foundation. Integration of sustainable development into the 2011-2015 settlement project. Establishment of a sustainable development department, a steering committee, a project group and working groups.	Presentation of the Agenda 21.
Regional and University Hospital (RUH) of Brest	Commitment in an Agenda 21 in 2007. Establishment of a Steering Committee. Publication of a sustainable development report in 2008. Presentation of the sustainable development step.	2008 Sustainable Development Report - Agenda 21
H. of Esquirol – Limoges	Agenda 21 adopted in 2009. 14 working groups. 35 actions initiated. Presentation of the sustainable development step.	2010 Annual Review of Agenda 21. - Agenda 21 Carbon report.
RUH of Lille	Establishment of a multidisciplinary project team since mid-2008 as part of the Strategic Project "Sustainable Development. Declination of this project into action plans of 8 priority objectives validated by the Executive Council.	Presentation of the sustainable development approach.
UH of Nantes	Elaboration in 2010 of a 2010-2015 multiannual sustainable development plan. The axes: Organize structure, manage the process and communicate; master the consumption of natural resources and energy; encourage respect for the environment; take into account the well-being of	

	professionals; develop public health actions and promote responsible professional practices.	
H. of Niort	Commitment to a sustainable development approach in 2010. Establishment of a Steering Committee and organization of working groups.	Presentation of the sustainable development approach.
H. des Pays de Morlaix	Adoption of an Agenda 21 in 2009. Identification of 6 projects: accessibility and transport, HQE approach, preservation of resources, quality, risk management and prevention and training schemes.	
H. of Saint-Nazaire	Commitment to a sustainable development approach in 2009. 2010-2011 action program (43 measures) and 2010-2011 sustainable development report.	Presentation of the approach - 2010 report
RUH of Tours	Commitment to a sustainable development approach in 2008 with the setting up of a steering committee. Establishment of six transversal working groups on the following topics: the hospital travel plan; effluent and soil waste management; sustainable purchases; construction (buildings); energy, water, greenhouse gases; prevention and promotion of health. Presentation of actions for Sustainable the Development Week 2010. Indeed, the hospital is a major economic player in the territory, a major consumer of energy, and a major producer of waste.	Supported by the general management of the University Hospital Center and led by a multi-professional committee, the initiative now allows many actions to be developed, such as the management of energy expenditure and the control of CO2 emissions into the atmosphere.

Source: prepared by the researcher on the basis of documents entitled:

* "Sustainable development and health organizations benchmarks",

* Marie-Christine Burnier and Barbara Vernet, Reducing its ecological footprint: the hospital accepts the challenge - initiatives, documents available on site:
https://www.techniques-hospitalieres.fr/article/29-reduire-son-empreinte-ecologique-lhopital-releve-le-gant-ii-initiatives.html.

5-1-2-Waste management:

The hospital is a major economic player in the region, a major consumer of energy, and a major producer of waste, most health organizations in France is making efforts to reduce the rate of waste.

Table (2): Health organizations experience in waste management

The establishment	The acts carried out
UH of Angers	Reduction and sorting of waste at the source. Specific collections for certain recoverable waste. Participation in the European Week for Waste Reduction (SERD) in 2011. Press release on the actions carried out. - Presentation sheet of the actions carried out during the SERD 2011.
UH of Nantes	About fifteen identified waste management channels (quantitative and financial monitoring). Gradual implementation of the sorting of office papers via "trash trees" (individual collectors) within the framework of an agreement with a reintegration association.
RUH of Tours	Establishment of waste sorting to increase their recovery, collection of used

	batteries and lamps of personnel, control the production of hazardous waste, collection of used textiles.... Signature with a reintegration association (Tri37) of an agreement to recycle textiles. In total, more than 3,600 tons of recycled waste in 2010, representing a revenue of € 13,782.

Source: prepared by the researcher on the basis of documents entitled:

* "Sustainable development and health organizations benchmarks",

* Marie-Christine Burnier and Barbara Vernet, Reducing its ecological footprint: the hospital accepts the challenge - initiatives, documents available on site: https://www.techniques-hospitalieres.fr/article/29-reduire-son-empreinte-ecologique-lhopital-releve-le-gant-ii-initiatives.html.

5-1-3-Energy and building:

The construction of buildings must take into consideration the energy saving "eco-build". The following table shows some practices of health organizations in France.

Table (3): Health organizations experience in waste management

The establishment	The acts carried out
H. Blois	Eco-constructed logistic platform inaugurated in 2011 (waste treatment and transport service)
H. Henri-Laborit– Poitiers	Signature of an Energy Performance Partnership Agreement with Cofely, and the GDF SUEZ Group in December 2011. Objectives: 24% reduction in energy consumption and 88% energy mix.
Federation of Private Hospitalization - FHP Languedoc-Roussillon	Carbon balance of 26 clinics, a local hospital and the FHP-LR. (2011). Objective reduction of 20% of their GHG emissions by 2021. Sentinel Carbon Trophies.

Source: prepared by the researcher on the basis of documents entitled:

* "Sustainable development and health organizations benchmarks",

* Marie-Christine Burnier and Barbara Vernet, Reducing its ecological footprint: the hospital accepts the challenge - initiatives, documents available on site: https://www.techniques-hospitalieres.fr/article/29-reduire-son-empreinte-ecologique-lhopital-releve-le-gant-ii-initiatives.html.

5-1-4-Travel and transport:

The transport issue is clearly identified as a pivot of the reduction of greenhouse gas emissions (Fédération Hospitalière de France, 2015).

Table (4): The experience of Bordeaux University Hospital

The establishment	The acts carried out
UH of Bordeaux	Adoption in 2009 of the travel plan for professionals and users. 5 strategic axes: inject and sustain a dynamic PDA; structurally improve the conditions and safety of travel; facilitate and secure alternative commuting to work; facilitate and secure alternative business trips; facilitate and secure reception and internal displacement on the sites. Presentation of the PDA. Results of the 1st evaluation of the PDA

Source: prepared by the researcher on the basis of documents entitled:

* "Sustainable development and health organizations benchmarks",

* Marie-Christine Burnier and Barbara Vernet, Reducing its ecological footprint: the hospital accepts the challenge - initiatives, documents available on site:

https://www.techniques-hospitalieres.fr/article/29-reduire-son-empreinte-ecologique-lhopital-releve-le-gant-ii-initiatives.html.

5-1-5-Social Policy And Awareness:

Table (5): Social and awareness actions

The establishment	The acts carried out
H. of Esquirol – Limoges	Establishment of a solidarity day in 2011 for the benefit of three associations (SOS Bébés 87, Secours Populaire and Médico Lions).
FHP Languedoc-Roussillon	Signature of a partnership with Face Hérault for the fight against discrimination (2008): training of directors in forms of discrimination, program of reintegration of people in difficulty ...
Intercommunal Hospital - IH Robert-Ballanger	Aulnay sous Bois. Organization in November 2010 of a Sustainable Development Forum in the hospital
UH- Rouen Hospitals	Creation of a mobility village during the week of mobility in 2010 and a Waste Village for a week in April 2011 to raise awareness among agents: interactive games, quizzes, photo rally.
RUH of Tours	Organization of a Sustainable Development Forum in 2011 for agents.
UH Angers	Establishment of a cultural policy for hospitalized persons and nursing staff in the framework of the interministerial program "Culture and health".

Source: prepared by the researcher on the basis of documents entitled:

* "Sustainable development and health organizations benchmarks",

* Marie-Christine Burnier and Barbara Vernet, Reducing its ecological footprint: the hospital accepts the challenge - initiatives, documents available on site:
https://www.techniques-hospitalieres.fr/article/29-reduire-son-empreinte-ecologique-lhopital-releve-le-gant-ii-initiatives.html.

6. Other useful measures for the integration of sustainable development in the management of health organizations:

6-1-The environmental dimension at the heart of the 2012 Hospital Plan:

The 2012 Hospital plan will mobilize for the period 2008-2012 nearly 10 billion Euros of investments, including 5 billion made by the State, direct aid from the Health Insurance. It has two objectives (PASCAL, 2008) **:**

- Improve the efficiency of hospital supply;
- continue the technical modernization of the health establishments engaged with the 2007 Hospital Plan, of which it is an extension.

6-2-Certification of health organizations V2014:

Health facility certification, conducted by the Haute Authority of Health (HAS), is an obligatory external evaluation procedure that takes place every four years. The V2010 certification manual integrates sustainable development through eight criteria (La Haute Autorité de Santé, 2014):

- Criterion 1.b: commitment to sustainable development
-Criterion 3.d: quality of life at work - criterion 6.f eco-responsible shopping and supply.
- Criteria 7: water management; b air management; Energy management; local hygiene and waste management.

7. Conclusion:

The objective of this study is to demonstrate that the ecological and social impact of health care organizations is to expose the best practices of French organizations in terms of being part of a sustainable development approach.

Health care organizations have an important role to play in sustainable development. This implies first and foremost a significant environmental impact in terms of energy and water consumption, waste production, greenhouse gas emissions, pollution caused by transport of patients, visitors and staff, etc. Regarding the social dimension, the working conditions are stressful and the schedules are shifted. Finally, the economic dimension is largely impacted by the financial weight of these health organizations. All these characteristics seem a priori not very compatible with the notion of sustainable development.

This is why, facing these three determinants of sustainable development in health, the leaders of health organizations in Algeria must decide to commit themselves to sustainable development. The actions led by the experiences of health organizations in France have focused on the involvement of human resources, the quality of life at work, eco-responsible purchasing, the management of resources and waste by limiting waste, the good treating patient, etc.

Through the presentation of the experiences of the French hospital organizations as well as official institutions concerned with health care, the major axes that the Algerian hospital organizations, whether public or private, can benefit from benchmarking and experiences are clearer.

Administrative integration of sustainable development in strategic health planning: It is through the establishment of a special committee or working groups concerned with sustainable development by drawing directives strategies and we can benefit from the requirements of Agenda 21 health.

Medical waste management: From the foregoing and in the field of sustainable management, it can also benefit from the most important experiences, especially in reducing medical waste at the source and determining a detailed medical waste management channels, such as the experience of the hospital CHU of Nantes. Determining the list of recyclable and treatable waste as used batteries, lamps, and it is also evident from the offer of the French pilot to benefit from cooperation with active associations in the field for good management and constructive partnership.

Energy saving: considering the requirements of sustainable development in the hospital that have been reviewed, Algeria can benefit from Projects of building and reformatting public hospitals and developing a book of specifications that guarantees the achievement of energy efficiency and reducing pollution, risks as well as a good quality-cost and health care system.

Transportation: We can greatly benefit from the CHU of Bordeaux experience. Among the most important themes we find energy saving and pollution reduction, health and safety in transportation for both workers and patients, the ease receiving and forwarding patients.

Social Side: organizing solidarity campaigns, limiting racist practices and discrimination, providing a safe work environment, organizing forums and dialogues for sustainable health development as well as activating dialogue mechanisms and incorporating sustainable development into the goals and interests of workers (administrative and medical staff) at all levels.

Other mechanisms were also reviewed that enabled France to direct the efforts of its hospitals and public health institutions towards the voluntary initiative to adopt sustainable development, which Algeria can undoubtedly benefit from its content and the results of its application as the 2012 hospital planner as well as the French hospital standardization certificate issued in 2014. In addition to the well-known and reviewed administrative systems of quality, Environment, safety and occupational health and as well as social responsibility.

8. Bibliography List:

Directions générale des soins. (2016, 12 31). Consulté le Décembre 16, 2018, sur https://www.centre-val-de-loire.ars.sante.fr/sites/default/files/2016-12/kit_appui_PHARE_0.pdf

Mérylle AUBRUN et autres. (2010). *ISO 26000 responsabilité sociétale : comprendre, déployer, évaluer.* Saint-Denis Cedex: France.

ADEME, A. d. (2018). Consulté le Décembre 17, 2018, sur http://www.ecoresponsabilite.ademe.fr/n/les-enjeux-lies-aux-achats-socialement-responsables/n:95

Baron Valérie. (2007). *Pratiquer le management de l'environnement « les réponses à vos questions".* Saint-Denis: AFNOR.

Bernard Froman et autres. (2007). *, Qualité Sécurité Environnement « construire un système de management intégré.* Saint-Denis: AFNOR.

Blanchette, C. (2005). *LA SANTÉ DANS UNE PERSPECTIVE DE DÉVELOPPEMENT DURABLE,, Santé et services sociaux,.* Québec: Direction de santé publique de la Montérégie.

Cabinet LAMY Enirenment. (2017). *Quelle est la place du développement durable dans la politique des établissements de santé*. Consulté le Novembre 30, 2018, sur http://lamy-environnement.com/wp-content/uploads/2017/08/Quelle-est-la-place-du-d%C3%A9veloppement-durable-dans-la-politique-des-%C3%A9tablissements-de-sant%C3%A9-_-.pdf

Castellano, S. (2012). Développement durable et santé publique. Vers un nouveau modèle d'une santé égalitaire ? *La Revue des Sciences de Gestion 2012/1 (n° 253)*, 11.

Cohen-Bacrie, B. (2006). *Communiquer efficacement sur le développement durable.* Paris: les Editions Démos.

Deblonde, J.-M. (2011). *Le développement durable « Une réponse à une crise globale ».* Paris: Edition ELLIPSES.

DETRIE, P. (2005). *L'entreprise durable.* Paris: éditions DUNOD.

Fédération Hospitalière de France. (2015, Juin 15). *Baromètre annuel du Développement Durable*. Consulté le Décembre 07, 2018, sur https://www.hospitalia.fr/Resultats-du-Barometre-annuel-du-Developpement-Durable-2015_a567.html

Florence Gillet-Goinard. (2006). *Bâtir un système intégré Qualité-sécurité-environnement.* Paris: éditions d'Organisation.

Hervé LECLET. (2011). *Développement durable : principes et applications en santé, Guide Hygiène et Sécurité dans les établissements de santé.* Saint-Denis: AFNOR Editions.

La Haute Autorité de Santé. (2014, Mars 31). *https://www.has-sante.fr*. Consulté le Décembre 8, 2018, sur Manuel de certification des établissements de santéV2010: https://www.has-sante.fr/portail/upload/docs/application/pdf/2014-03/manuel_v2010_janvier2014.pdf

L'Agenda 21. (s.d.). Consulté le Janvier 15, 2019, sur L'Agenda 21 : du global au local, disponible sur site :: http://www.agenda21-cluses.fr/index.php?id=165

Lega F, Prenestini A, Spurgeon P. (2013). Is management essential to improving the performance and sustainability of health care systems and organizations? A systematic review and a roadmap for future studies. *Value in Health*.

Malliga Marimu, Hanna Paulose. (2016). Emergence of Sustainability Based Approaches in Healthcare: Expanding Research and Practice. *Procedia - Social and Behavioral Sciences*.

Moquet, A.-C. (2005). De l'intégration du développement durable dans la stratégie au pilotage et à l'instrumentation de la performance globale, 2005/1 (n° 3), p. *Revue Management & Avenir*, 11.

OLIVIER Toma. (2017, Mai 30). *Les 8 engagements développement durable du secteur santé*. Consulté le Décembre 04, 2018, sur http://politiquedesante.fr/8-engagements-developpement-durable-sante/

PASCAL. (2008, Octobre 18). *LANCEMENT DU PLAN HÔPITAL 2012 : AU CŒUR DE LA MODERNISATION DU PAYSAGE HOSPITALIER FRANÇAIS*. Consulté le Décembre 07, 2018, sur https://www.cadredesante.com/spip/profession/Lancement-du-Plan-Hopital-2012-au

REYNAUD, E. (2006). *Le développement durable au cœur de l'entreprise « pour une approche transverse du développement durable »*. Paris: éditions DUNOD.

Schneider, L. (2009, Mai 28). *www.qualite-securite-soins.fr*. Consulté le Novembre 30, 2018, sur https://www.google.com/search?q=le%20d%C3%A9veloppement%20durable%20en%20milieu%20hospitalier%20

Ulli Weisz, Willi Haas et autres. (2011). Sustainable Hospitals : A Socio-Ecological Approach. *Revue GAIA 20/3*, 192.

Vernet, M.-C. B. (2018, 01 03). Consulté le Novembre 30, 2018, sur https://www.techniques-hospitalieres.fr/au-numero-a-l-article/6-revue-techniques-hospitalieres-n747-test-ukoo-a-supprime