GREEN HEALTH CARE SEGMENT: A FUTURISTIC APPROACH

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ABSTRACT
Health sector is much talked about now a days, despite of having one of the most world renowned infrastructures and goodwill of India in healthcare sector is actually detaining. Most of the hospitals prefer to be traditional, in case if they try to adopt the Green concept money and space both pose a great hindrance. Can renewable and non conventional concept be attached to Hospitals in the form of Green hospital, especially in the country like India?, Has raised alarming bells. Though the concept is nonconventional but it has gained success in most of the European countries. The future of health care Industry especially hospital largely depends on Green Hospitals.

Keywords: Green; Hospitals; Environment; Waste; Health; Building; Pollution; Success; Infrastructure; Government

INTRODUCTIONS
The present research paper attempts to identify the concept and acceptance of Green Hospitals in India. Paving the way of success in Modi – Obama Era, the concept of Green hospitals is a contemporary and a relatively new subject especially when we are talking about the non metro and other sub – urban cities and rest of India. India is known for its vast and ultramodern health care sector but ironically most of the health care centers and hospitals are not securing the footprints of Carbon Emission. In this regard the concept of Green Hospitals and its application can play an important role. Green Hospitals cannot only be considered as a unit rather they are the indispensible part of the future health care movement. Government of India has also taken positive nod in this regard but some important hindrances like acceptance, infrastructure and lack of willingness both from the business community and social India pose a challenge to its success, but indeed its renewable and non conventional. India is known for its vast health care sector but ironically despite of best efforts of Government and private sector units still the reach of this aforesaid sector is limited. Green hospitals are the health care centers that usually take care of the effective and efficient supply of health care services along with an active contribution towards the eco friendly environmental inputs. The concept has first been practically carved in USA, and such hospitals/ centers have actively used the recommendations of US Green Building Council. The Global Green Hospitals work multidimensional to satisfy the agenda of healthy and environment safety. One active initiative in this step is the Global Green and healthy hospitals network empanelling about 9700 health centers and hospitals round the Globe (Source - https://noharm-global.org/issues/global/global-green-and-healthy-hospitals).
In order to sustain economically and ecologically three important parameters have to be emphasized viz Green Commitment, Quality Services and Efficiency. It is not an easy task because it requires the combination of dimensionally opposite fields of construction, logistic, medical practice, healthcare supply and waste management. The success of the above alliance largely depends upon the delivery system and the efficient application of the concepts. The Green Hospitals is a comprehensive health care facility committed to reduce the carbon emission. These facilities are facing toward future and have developed into sustainable efforts to ease the patient with the disease curing facilities via adopting a Green approach. In this case the environmental friendly practices are adopted for designing and managing the facility along with green logistic and green waste management. This concept proves to useful for the developed country, but the mind boggling question lies ahead “Can we apply this concept in India?” Although we have adopted the concept of LPG in early 90’s, but its implementation is restricted mainly to trade and commerce. We the people are still traditional and inclined toward traditionally tested practices and still we hesitate a lot to accept the change. Probably our demographics, strong cultural influence and responsibility don’t allow us to accept the change.

OBJECTIVES
Following were the main objectives behind the present research work

1. To know about the Green Hospitals
2. To know proposed method of introduction of the Green Hospitals and its Challenges

(Note – Before formulating objectives a small pilot study was conducted in Delhi/ NCR and after that these objective were designed)

RESEARCH METHODOLOGY
The present work is based on the concepts of exploratory research and the concepts of convenience sampling have been used to select samples. The sample size was of 200 respondents and the sampling area encompasses Delhi / NCR. Data sources considered were primary and secondary. The responses were obtained with the help of a self administered questionnaire, personal interviews and interactions and the tenure of the research was of two months. Though no special statistical tools have been used but the concepts of averages and general mathematics has been extensively used.

SCOPE OF THE RESEARCH WORK
The scope of the present research work is limited. The concept of exploratory research work and convenience sampling has been used and the tenure of the overall work was of two months. The research work has covered the response of general / local people, professionals and owners of private hospitals. The recommendations and findings is limited to North Indian City only, however it can be generalized to the parts of India provided the demography, physiographic and legal constraints are similar

IMPORTANCE OF THE RESEARCH WORK
The research work will prove to be beneficial for all the people who are attached to the work, above all the findings and recommendations are beneficial for the government for policy framing and conceptualization of the Ideas of Green Hospitals and also its application may lead to increase in knowledge and thinking horizons of the local dwellers. The research work may also increase the practical feasibility of the Green Hospitals and may provide some important inputs to all those who wish to study the same field.

Requirements for Green Hospitals to Be Operational
Like the global citizenship the concept of Green Hospitals is gaining importance. All the stakeholders, Construction lobby and healthcare participants are now getting awareness about the concepts and benefits of Green Hospitals. Though the success rate of the concept depends upon the spread of information and education regarding this but its slowly acceptance with respect to India is visible.
Now days the concept has become an important ingredient in Hospitals planning projects. There is a positive node to going green. Following are the list of some fragments, which are to be taken care off while designing the concept

1. Energy and Atmosphere
2. Indoor Environmental Quality
3. Site of Constructions of the Hospitals
4. The Construction Designing
5. Renewable Sources of Energy and its supply
6. Green Transportation and Green Logistics
7. Waste Management (Recycling and Reuse)
8. Food, water and Canteen Facilities

**Green Hospitals: A Solution for Tomorrow**

As hospitals typically use significantly more resources and produce more waste than comparably sized commercial buildings, the effective deployment of environmentally driven strategies to improve resource management is of critical importance in the development of sustainable healthcare facilities. A World Health Organization (WHO) report published last year urged hospitals to proactively address the environmental footprint of the healthcare sector by reducing power consumption, utilizing alternative energy generation, and through the recycling and conservation of resources. A range of energy efficiency measures, which rightly form the starting points for many global green hospital initiatives, are being adopted both in the renovation of existing facilities and the construction of new hospitals. Core measures include the use of energy efficient medical equipment and lighting systems for hospitals to reduce energy expenses, as well as the deployment of technologically advanced energy management systems that leverage onsite renewable energy sources.

These transformational energy solutions, coupled with the implementation of efficient water management and a focus on the reuse of resources, can greatly reduce the overall environmental impact of healthcare facilities, increase efficiency, and reduce cost of operations. Besides the goal of reducing carbon footprint, hospitals are also looking at how to introduce the increased use of daylight lighting and natural ventilation into the healing environment. To raise the standards of patient care, a sustainable hospital design should also look at improving air quality by exploring ways to reduce the amount of harmful toxins and contaminants used across clinical departments. A significant but perhaps less heralded development in new green hospital initiatives is the growing integration of advanced workflow optimization into the early stages of facility design and construction process.

**FINDINGS**

<table>
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<tr>
<th>Awareness about Green Hospitals</th>
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<tr>
<td>Yes = 15%</td>
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<td>No = 85%</td>
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**Figure - 1**
Interpretation: 95% of the respondents were unaware of the concept of Green hospitals; this finding was not a surprise as the concept is contemporary new to the people. This clearly demarks that the information regarding the same is to be properly published and expressed.

Figure – 2

Finding regarding Test and Try

**Finding regarding Test and Try**

- Yes = 5%
- No = 95%

Interpretation – About 95% of the respondents were against the concept of trying green hospitals as they don’t want to try and test the health related issues to a contemporary new concept. They want to go the traditional way.

Figure – 3

Regarding Infrastructure

**Regarding Infrastructure**

- Yes = 20%
- No = 80%

Infrastructure - It was a shocking reality that only 20% of the hospitals in Delhi/NCR are having the infrastructure to support the Green Concept and rest 80% of the Hospitals are devoid of it. It clearly shows that in absence of the infrastructure the introduction of Green concept is not possible.

Figure – 4

Regarding use of Recycled Material

**Regarding use of Recycled Material**

- Yes = 45%
- No = 55%
Interpretation – As per the findings only 45% of the respondents were ready to use recycled material during hospitalization, however 55% of the respondents were against the idea, they want to go for pure dimensions.

PROBLEMS AND CHALLENGES

- Most of the people are unaware of the concepts of the green hospital (as a result of absence of the requires Information and Explanation), so its generation is doubted in present scenario.
- The lack of infrastructure support and facilities with Hospitals also doubts its generalization.
- Respondents/ People want to use new equipments and tools rather than recycled one also pose a challenge.
- The Recommendations regarding construction of Green Hospitals is not an easy task to follow and carry out, which again is a problem.
- Absence of proper recycling facility and knowledge is a major hindrance.

Things which are to be taken care of while designing green Hospitals (http://archivehealthcare.financialexpress.com/201106/hospitalinfra10.shtml)

- Choose an environmentally friendly site (avoid farmland, wetlands, flood plains, environmentally sensitive lands, and hazardous substance sites).
- Design for sustainability and efficiency building (identify opportunities to incorporate recycled materials into the building, such as beams and posts, flooring, panelling, bricks, doors, frames, cabinetry, furniture, trim, etc).
- Energy conservation initiatives (orient building to take advantage of solar energy for heating and day lighting and to encourage natural ventilation and passive cooling).
- Evaluate safe strategies to recycle wastewater/gray water for other purposes on the site.
- Ensure that building elements are installed and calibrated properly to meet the project’s environmental health goals in addition to mechanical, electrical, and plumbing system requirements.
- Use of green-complaint materials and products during the construction of hospitals (High-reflectant roofing, high-performance windows - double-glazed, argon, etc., renewable building materials, such as bamboo flooring, wool carpet, strawboard, linoleum, poplar OSB, sunflower seed board, wheatgrass cabinetry, hemp fabrics, etc.)
- Establishing a waste separation and recycling program, and educate staff as to the benefits.
- Source almost all our materials from green certified manufacturing units both in India and abroad.

Establish a “Green Team” of staff from all departments to monitor progress toward environmental goals.

CONCLUSION

The concepts of Green Hospitals are comparative new to the Indian subcontinent. These hospitals are too innovative and can cut the carbon emissions to a greater extent. These hospitals can offer numerous advantages but in absence of proper information, infrastructure and lack of interest the prospect of Green Hospitals in Doubted. Proper applications of the concepts can lead to an innovative approach in the health care sector by following which major milestones can be achieved.
REFERENCES


