Designing Of an External Way Finding System for a Teaching Medical College

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I.   Introduction

Way finding system is the planned integration of visual information, using which people understand and make decisions about navigating their way. Way finding system and signages are used as synonyms, though they are not entirely the same. Although signage plays an important role in way finding, the entire problem of way finding cannot be solved by adding more sign boards [1].

People seldom visit hospitals unless they have to, being generally unfamiliar with the facilities and have trouble finding their way on their own. Patients and visitors coming to a healthcare facility have a common non-medical goal to navigate the complex, highly technical medical environment at a time when illness, stress and fatigue have depleted their emotional, physical and cognitive functions [2].

The present study was carried out to analyze the Way Finding requirements of the college and to make appropriate recommendations for implementation of a suitable Way Finding system for convenient navigation of the college campus by patients and visitors.

II.   Methodology of the study

The study was carried out at a teaching medical college over a period of 30 days and the study was of observational and descriptive design.

The entire campus of the college was methodically studied and analyzed for use of signages towards guidance of patients and visitors visiting the college campus and various deficiencies in existing signages were noted for identifying gaps in the Way Finding system of the institution. Further inputs were collected by conducting informal unstructured interviews were carried out with patients at random and physically tracking such patients trying to navigate the college campus. Finally, various international guidelines were studied to arrive at an optimum design for the Way Finding system of the college.

Based on various inputs acquired from available literature as well as knowledge of the existing ground situation, an effective Way Finding system was planned by undertaking activities as mentioned below

- **Identify the departments for which way finding is required -** We developed a list of all the areas identified to be of concern to visiting patients. The Department of Radio diagnosis and the Diamond Jubilee block were the two areas observed to be creating maximum difficulty for patients and visitors to locate[Fig1].

- **Identify strategic locations -** Based on knowledge gained while following patients trying to navigate the college campus and inputs received by interviewing such patients, strategic locations were identified for location of the Way Finding system being planned [Fig 1].

- **Designing of signage for each location -** Various factors like the content, specifications, height and font size were then considered to design individual signages along with their placement in identified locations.

Observations and Discussion

Way Finding system has been identified as an effective tool of a Patient information system towards navigating the campus of healthcare organizations as well as promoting a "**Patient friendly**" image for the institution.

An effective Way Finding system is been recognized is usually characterized by following functional parameters: -
• **Patient centric** - The entire way finding system should be planned taking into consideration the requirements of patients, the main goal of implementing the system being enhanced patient satisfaction.
• **Bilingual / Pictorial** - All Signages need to be bilingual i.e in Hindi or the common local language and English. Pictorial presentations need to be utilized to guide illiterate patients and internationally accepted graphics used for standardization.

• **Standard specifications** - International specifications for hospital signages can be conveniently utilized in absence of national standards for India[3,4,5].

• **Ergonomics relating to user interface** - Various factors such as size of letters on sign boards, height and width of sign board, light , illumination, color and location need to be studied in association with user requirements for maximum benefit from the designed system.

• **Integration with the built environment for better aesthetics**
• **Ease of maintenance of the system**

While analyzing the existing signage system of the college, various deficiencies were identified as given below:-
• Multiple widely dispersed signages, confusing rather than guiding patients and visitors to navigate the college campus
• All the existing boards were written in English only, due to which several patients were not being able to utilize the signages
• The existing boards were not clearly visible in various locations and information on such boards was not adequately spaced.
• Information given in few of the sign boards are outdated and patients were observed reaching wrong locations, being misguided by the outdated content.
• Sign boards were dull without any visual appeal. The color and appearance of some of the sign boards was such that several patients passed by the boards without noticing them or their content.
• There was confusion among patients regarding Golden Jubilee block and Diamond Jubilee block due to similar sounding names, which added to the difficulties created by the existing signage system of the college.

III. Results & Discussion
The new Way Finding system was designed in view of the identified gaps in the present system with a set of standardized parameters, namely
• Height of the signage boards
• Width of the signage boards
• Color of the boards and font color
• Size, spacing and alignment of letters on the boards
• Use of pictorial symbols and graphics
• Location of the signage boards at identified strategic locations within the college campus

Height and width of the singage boards was decided depending on the visual angle from which an individual patient of average height will visualize the signage.

Font size of letters was decided as per specifications outlined in Table 1, following international standards mentioned in the earlier paragraphs. Considering these standards, the viewing distance of each board was measured and font size calculated for each signage board. A sharp contrast was maintained between the background and font color for better visual discrimination, particularly by patients of geriatric age group.

Horizontal and vertical spacing of the content of individual signage boards was decided as per specifications outlined in Table – 2.

Since a part of our patient population are illiterate, certain additional measures were taken to assist them in Way Finding by use of pictorials and numerical codes. The adage that a picture is worth a thousand words is specially true in Way Finding. Simple, easily understandable pictures with symbolizes various departments were used, using internationally accepted graphical symbols. A specific code number was allotted to each department of the college and same numbers were clearly mentioned on the sign boards, so that a semi literate patient can locate his or her location just by following the numbers written on the signages[Fig 2,3,4].

The Way Finding system designed is expected to help patients in comfortably negotiating the large college campus without any inconvenience whatsoever. Moreover, the graphics in the signage system will help illiterate patients in way finding, thus adding value to patients experience inside the college campus. However, the biggest benefit that will accrue out of the newly designed Way Finding system will be '**Patient Empowerment'** in utilizing the facilities of the teaching medical college.

A good and simple Way Finding system is an effective way for enhancing the image of a hospital[6]. Service hospitals need to undertake similar studies to plan a scientific Way Finding system, thus facilitating the process of navigation of the hospital complex easy and convenient for patients and visitors and further improve their service reputation among the dependent population.

IV. Conclusion

In absence of any national standards for Indian healthcare organizations, ill planned hapazard signage in many of our hospitals creates confusion and dissatisfaction, rather than guide the patients and visitors to their desired locations. A systematic study of needs for an effective Way Finding system, followed by rational planning as per standard guidelines will add to the efforts of hospital management to make the visit of patients convenient, satisfying and memorable.

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Table -1 : Font size and viewing distance

Viewing Distance	Character Size	Viewing Distance	Character Size
6	10 mm	30	50 mm
7	12 mm	36	60 mm
9	15 mm	48	80 mm
12	20 mm	60	100 mm
15	25 mm	72	120 mm
18	30 mm	90	150 mm
24	40 mm	120	200 mm

Table 2 : Horizontal and vertical spacing of letters in signage system

Horizontal spacing	
Min 3 x	**Between left border & left hand column**
Min 3 x	**Between longest line of the right hand column and the right border**
Vertical spacing	
Min 2 x	**between top border and the highest message unit**
Min 2 x	**b/n message unit when using one character size only**
Min 2.5 x	**between bottom border and the lowest message unit**

Note – 'X' denotes the size of font used in the sign board ; font size of letters on the signage board being 10mm, a minimum distance of 30mm should be left between left border and left hand column of the signage.
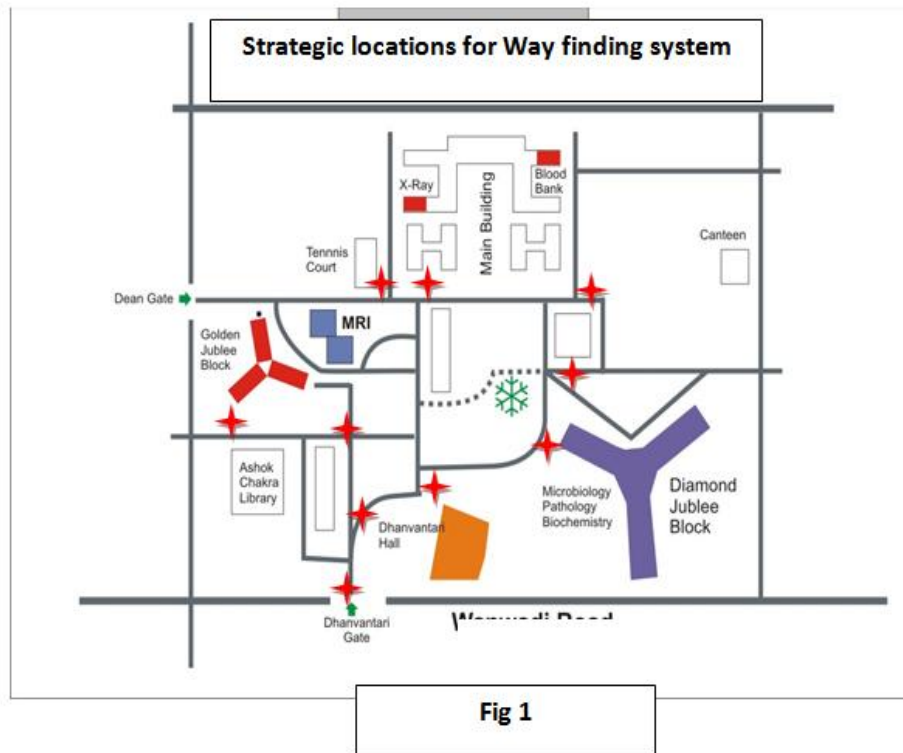
Fig 1 : Pictorial depiction of layout with depiction of strategic locations

Fig 2 : The figure depicts the sample signboard used in the way finding system with the above mentioned specfications