Design of a Primary Health Unit on Wheels for Rural Areas

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Abstract:
Health is not merely the absence of disease, but a state of complete physical, mental and social well-being, which is essential for leading a productive life. In order to maintain good health, healthcare facilities with better understanding of essential components, such as immunisation against major infectious diseases, prevention and control of local endemic diseases and so on play a vital role. People in rural India, especially in the far flung places lack basic medical facilities and as a result suffer from infections, diseases and disability. They have to travel long distances to get the basic medical assistance. There is an acute need to provide basic clinical pathological, diagnostic, scanning and preventive medical services to rural population. Since building up such facilities for every village is not possible, concept for a vehicle that facilitates such service was developed in the current project.

Functional and operational requirements for such a vehicle were identified through literature review, user study and market study. Rural area in the northern part of Karnataka close to Bijapur was selected for the project. Information pertaining to the problems faced in those areas was collected by interviewing doctors and people in those areas. Based on the user study, Quality Function Deployment (QFD) and Product Design Specifications (PDS) were generated. Product study was carried out in order to identify the types of equipments available for carrying out a particular test.

The exterior and the interior were then designed by considering various factors. The exterior was designed based on the bench mark model selected and the interior was designed based on the PDS generated. Three different concepts based on the interiors were designed, keeping in mind the ergonomics. Once modelled, the concepts were rendered and validated. One concept that was identified as the best suited for the application by the potential users was selected. A 1:10 scale model of the selected concept was crafted using a medium density fibre material.