Design of Mobile Vaccination Clinic for Rural Area

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Keywords: Mobile Vaccination Clinic, Rural Area, Immunisation

Abstract:

India has one of the largest universal immunisation programmes in the world. The programme is initiated through different types of government and private hospitals. But different states in India still lack in full immunisation coverage especially in the rural areas due to inadequacy in delivering health services in terms of personnel and facilities. This project is intended to design a mobile vaccination clinic that can travel to rural areas of India with all required medical amenities and staff to carry out immunisation programmes.

The design process started with a detailed background study on the immunisation programmes conducted in India, the importance of cold chain system in the immunisation programme using literatures. A market study and product study was conducted to understand the current mobile units available in the market and the design layouts of the vehicles. Gemba study and customer surveys were conducted to understand the basic needs of the end user and Quality Function Deployment (QFD) was prepared. Product Design Specifications (PDS) was generated by using QFD. Concept designs were generated based on PDS and final concept was selected by weighted ranking method. An ergonomic analysis was done on the final concept to verify the space requirements. The final concept was rendered and a mock-up model was created to get a better perception about the size and shape of the mobile unit.

The mobile vaccination clinic was designed such that it can help in providing the basic health checkups and vaccinations to infants and children of the rural area on time. This mobile unit will also help in improving the awareness among rural people on importance of immunisation. The vehicle will also be helpful for doctors, nurses, welfare officers, NGO's etc to carry all the required equipments and amenities to rural areas easily in an organised manner and cover large areas quickly, thereby increasing the effectiveness of immunisation programme in India.

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Finalised concept of vehicle

Exterior and interior concept design of vehicle

Rendered images of exterir and interior of the vehicle

Mock up model mobile vaccination clinic