

Accessibility solutions for healthcare emergencies for rural areas

Project Title:

ID00714

Project Number

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Research Academy Clusters:

Highlight which of the Academy's CLUSTERS this project will address? (Please nominate JUST one . For more information, see www.iXXXXX.org)	
Material Science/Engineering (including Nano, Metallurgy)	1
Energy, Green Chem, Chemistry, Catalysis, Reaction Eng	2
Math, CFD, Modelling, Manufacturing	3
CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control	4
Earth Sciences and Civil Engineering (Geo, Water, Climate)	5
Bio, Stem Cells, Bio Chem, Pharma, Food	6
Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng	7
HSS, Design, Management	8

The research problem

Define the problem

The pertinent underlying factor in the design of mobility systems used for healthcare emergency situations remains unchanged to commute the patient from Point A to Point B from an emergency site to the hospital.

There are plenty of solutions available for a full scale Ambulance service for cities. A large and overwhelming number of devices are used inside the ambulance, on a stretcher or on a wheelchair. These devices provide preliminary medical attention, life support, first aid and many such facilities to the patient thereby making his transit more comfortable and convenient.

However for a remote area, reach and availability of a conventional ambulance is problematic. Non-existent road, minimal infrastructure support, system integration, expandability are some of the many issues that have to be dealt with.

This project targets design, prototype and testing of alternate accessibility solutions to transport patients from emergency situations in remote rural locations to a nearby healthcare centre. These solutions should be low-cost, efficient and support more effective mobility system.

Project aims

Define the aims of the project

Identify and push the boundaries of design knowledge to build an effective system that supports accessibility solutions that can be used in an emergency to provide better access to healthcare services for rural sector; build, deploy and test the system, demonstrate impact, and articulate lessons learnt.

Expected outcomes

Highlight the expected outcomes of the project

It is the aspiration of this project that the outcomes will form a body of work outlining how a support system of public and private health services can benefit from a design methodology and what improved health and wellbeing outcomes could look like. Examples of such output may include:

- **Research:** system and product level thinking to realize potential solutions for an effective comprehensive solution for secured and comfortable patient delivery from emergency site to the nearby healthcare centre
- **Create:** adapting existing infrastructure and accessibility solutions to transform into mobile ambulance;
- **Simulate/Test:** build mockup for field testing and register actual users' feedbacks; testing through simulation
- **Maintenance:** empowering the indigenous communities to manage their mobile ambulance solutions
- **Promoting Awareness:** Promoting self-sufficiency in providing support for pregnancy, child care, hygiene, first aid related support services within a community

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.

These project goals will capture within the research the theme of (8) Design.

Capabilities and Degrees Required

List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.

A background in Industrial Design, preferably a Masters or high level Bachelor degree in accordance with the eligibility regulations. The candidate's portfolio should demonstrate adequate rigor and inclination towards problem identification and solution finding through research.

Potential Collaborators

Please visit the IITB website www.iitb.ac.in OR Monash Website www.monash.edu to highlight some potential collaborators that would be best suited for the area of research you are intending to float.

Unicef is supporting a project on Mobile ambulance for some tribal regions. This may be explored (Ref: CTARA, IITB)

More sources are yet to be found