

# **INNOVATION IN PHYSICS DA-3**

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## **Scope of project:**

- ❖ The aim of this prototype is that temporary relief is to be given out that can give rural people a better chance for resisting the health from withdrawing before they are able to reach doctor.  
Major advantage is that people would be able to access the drugs via patient kiosks in public places such as drug stores, malls, bus, railway stations, on highways, areas where medical stores are limited.
- ❖ Medicine vending machines will become increasingly popular as a convenient way to purchase prescribed medications.  
They are used to dispense products to customers without the involvement of staff or human assistance on a 24-hour basis, and in this Covid-19 scenario, thus giving a great alternative for pharmacies.
- ❖ This will only need a short amount of time to keep them serviced and stocked with products.
- ❖ MEDBOX will improve the quality of health-related humanitarian action, especially at local/national levels and ultimately contribute to improving the quality of patient care and standardization of health action by providing access to relevant tools, anytime, anywhere, in a handy, easy to use format!
- ❖ Furthermore, innovative user-friendly checklists will be made available for individual use, adding value to timely humanitarian quality interventions. With increasing internet access largely utilized through mobile phones (as was seen in Haiti), the internet will be the major source of health care information in humanitarian aid, in the future.
- ❖ Users of MEDBOX include those in charge of the medical relief efforts of the Provincial Disaster Committee in Baluchistan tasked with managing flood relief; the MoH staff in Myanmar facing challenges after yet another cyclone; or the medical team of a CBO in Zimbabwe dealing with cholera or typhoid outbreaks.
- ❖ We envision for the future that MEDBOX and its innovative tools will be the instrument to use in acute humanitarian emergencies.

The main objectives of the project are:

- I. Dispense of medicines from MED BOX at scheduled time.
- II. Medical alerts to care taker and retailer
- III. Online report generation of medicine
- IV. Real-time health statistics monitoring of medicines
- V. Configuration data is sent through mobile app

### **Targeted audience:**

For anyone working in humanitarian settings, the necessity of immediate, up-to-date information is paramount, especially with regards to operationally relevant information such as guidelines and checklists for various health related issues. At the same time, a major limitation in providing quality humanitarian assistance is the knowledge gaps at field level. This was observed during various acute interventions in the past few years in Myanmar, India, Pakistan, Haiti and Turkey, to name but a few, recent examples.

Quality assurance and accountability are important values in humanitarian action and receive growing attention by actors, donors and the public alike.<sup>10</sup> Real-time access to operationally relevant documents and innovative checklists online will facilitate application of medical standards and hence raise the quality of interventions and, consecutively, improved humanitarian outcomes and impact.

Despite many calls for developments in this direction in recent years (see various footnotes), so far nothing has been developed for practical use in the field of humanitarian action. This project will be the first of its kind. Innovative, user-friendly, generic checklists will be generated to allow humanitarian actors to quickly get an overview over a given situation and tailor interventions according to the needs. One could pick from a wide range of questions and specifications and select relevant aspects for one's own purpose.

MEDBOX will develop a programme that allows individual selection of criteria and hence be applicable to any setting.

The idea of the project originated from communication and observations at field level in acute emergencies, over a few years. It was field workers (national and international) who voiced frustration at the challenge of accessing and sharing information, as well as a lack of hands-on tools within the field workers' set.

National and international humanitarian workers from our professional networks have been involved in the development of the concept and sitemap. They have made significant contributions to MEDBOX since its founding.

MEDBOX was created to meet gaps identified by these stakeholders themselves to allow its users to gain maximum benefit from this innovative project. Our partners do not only engage financially, but also contribute to the development of the project with expertise.

As the innovation is still in the 'invention and development phase' consultation and partnership building is still actively occurring. Currently, consultations are being held with humanitarian professionals and organizations around the globe to allow maximum input on the structure of the site map and content.

### **How will the idea get implemented:**

STEP 1: We made a timeline ready, which briefs our work for the project in parts.

STEP 2: We did requirement analysis and had our design ready as per our timeline.

STEP 3: Then we circulated google forms and had their reviews about what medicine do they prefer and according to them and some personal recommendation, then data collecting was done.

STEP 4: About the digital part, we decided on doing website and App.

STEP 5: Our website was completely coded using HTML and CSS while our software's backend and frontend was done using python as per our timeline.

STEP 6: App was done using Proto.io.

STEP 7: Integration and Testing was done once all the digital part was done

Regarding Implementation and development, we 're unable to do a working vending machine due to poor resources in the pandemic. For maintenance and operations, we are supposed to refill medicines in vending machines thrice in a month and incase of the websites and software there should be a proper service done once in three months to prevent malpractices in the system which would reduce fake accounts and improve the interface of our website and software.

The final goal of our project is to provide efficient medication not only in urban areas but also in rural areas. To achieve this, there should be a same number of refill sessions in urban and rural areas. Surveys will be conducted every three months, to be in touch with the customers and to know the medicinal requirements. customer care offices will be set up in every district, with call services/ chat bots

Within the reporting timeframe we were not able to complete all of the planned tasks of innovation. Inventing a homepage of this complexity was new to our team and placed some unexpected challenges for the team. For one the programming of tools such as the favorites and the responsive design took longer than anticipated. Also, we had to balance sometimes conflicting priorities in view of available resources and capacities.

Furthermore, discussions and consultations on the new tools took more time than we anticipated, sometimes causing delays in the implementation process. Having said this, MEDBOX is filling a sensitive gap of health care information in humanitarian assistance, as is proven with the current COVID-19 outbreak. However, the risk of underfunding in the future remains a realistic threat. We do have a strategy to prevent this from happening and so far, we have been successful in arranging co-funding from NGO partners.

The MEDBOX team will revise available tools and checklists together with an expert panel, which will lead to the development of innovative generic checklists. Operationally relevant documents will be revised by the same panel for each of the sub-sections. Users will then rank the usefulness with stars and comments. Furthermore, statistics on use (views and downloads) will be transparent for each document. The order of appearance of documents on the respective sub-sites will be defined by the users through the ranking option in combination with the above-mentioned statistics.