

Manufacturing PAPRs in Bangladesh: In conversation with Bioforge's Dr Dewan Ahmed

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Dr. Dewan Ahmed Fawzul Kabir Choudhury is the founder and CEO of Bioforge Health Systems. He is a physician by profession and an innovator at heart. His team at Bioforge is currently working in collaboration with Fab Lab Dhaka, Advanced Dynamics and Mr. Umer Aiman Khan on the M26 PAPR project which aims to help on-duty doctors during this pandemic with the latest technology.

Can you tell us about Bioforge Health Systems?

We are a biomedical hardware and software company. We are working on developing products and services to support hospitals and doctors in delivering effective healthcare solutions using innovative technology. Most advanced medical equipments in hospitals are brought from foreign companies and hence are very expensive. Our goal is to locally manufacture these products at an optimal cost to contribute to the healthcare sector. We use 3D printers, laser cutting, microcontrollers etc. to work on our prototypes. And we are heavily research-intensive when it comes to designing any product. We also work with machine learning, artificial intelligence for



developing our software.

We have not gone for commercialization yet; our focus is still on research and development.

Why do you think PAPRs are essential for doctors handling corona patients?

The number of genuine N95 masks available in the market is inadequate in Bangladesh. The few doctors who could gain access to these masks are still unprotected as the masks only cover the mouth and nose and wearing these for long hours can be difficult. During the integration process, the patient often coughs out fluid which can transmit the virus. A Powered Air Purifying Respirator (PAPR) provides the highest level of protection to the doctors. Moreover, a lot of the N95 masks used by our doctors are not authentic and hence pose a risk for them.

What is the M26 PAPR project?

Our project is aimed at manufacturing PAPRs locally at an affordable cost. These devices are manufactured by global giants like 3M and their ones are very expensive. We plan to take the products to the market and sell these at a break-even price, we do not aim to make any profit here. Our design is open source and open for feedback. We have some amazing partners who have made it possible for us to finish the initial prototypes within a short time. We are now emphasizing on safety tests and if we get satisfactory results, we will move to manufacture.

Why aren't more initiatives like this being taken in Bangladesh?

There are a lot of innovators in the country. However, they do not get

sufficient funding to turn their projects into reality. Even if some organizations or venture capitalists are investing in these projects, they look for quick and steady returns. If it involves too much research and the costs are high, they discontinue the projects. The ecosystem needs more facilitators like I-Lab from a2i. Research should be the priority for developing cutting edge technology.

What are Bioforge's plans for the future?

Since there is a shortage of doctors, we plan to provide them with optimal resources at reasonable prices. We plan on commercializing the products soon and scaling those globally in the long run. We plan to use the global network of labs under the Fab Foundation of MIT to further improve the product and distribute the design to other countries.

