

SNEHA BALAN – Biomedical work in Healthcare and during Covid-19

It is a privilege to be working in the Healthcare industry and as part of my career in the Middle East, I have the opportunity to bring out technical advancements and associate myself in the Medical domain on a day to day basis. There are fantastic developments in this sector that will turn the future to an evolution. As a Biomedical solution designer, below are some projects that I have been involved during critical and recent times (mainly in the Kingdom of Bahrain):

1. **Covid 19 projects:**
 - a. **Oxygen generators:** Instrumental in liaising with leading world manufacturers to set up oxygen generation plants for different parts of the world.
 - b. **Disinfections systems:** BioCair RADS (Rapid Aerial Disinfection system) using Dry Mist technology and Xenex Pulsed UV Disinfection (a premier technology that does not use Mercury technology)
2. **Hospital Pharmacy Automation:** Inpatient and Outpatient pharmacies - Robotic systems (from countries like Italy, Germany, to perform repetitive tasks of the pharmacists/nurses and aid the healthcare workers in patient safety (5 patient rights of medication administration) and complete inventory tracking for hospital management.
3. **Medical supply management** - Something similar to the Pharmacy automation where systems are used for dispensing and tracking of medical supplies like stents, catheters, and shelf items
4. **Lab Automation:** Modular design and complete tracking and software storage of the different samples and reports. Teleconsultation projects to aid in collaborating with foreign doctors for diagnosis and therapy
5. **Oncology center Treatment Planning software:** This system interfaces with the Linear accelerators to create treatment plans through its advanced contouring and analytics tools
6. **Waste Management System:** Solution design and proposal for centralized sterilization and treatment of medical waste that will shred and sterilize these hazardous substances to normal waste that can be disposed of easily
7. **Pneumatic Tube Systems and Automated Guided Vehicles:** Projects that will facilitate in easy and safe transport within hospitals of the samples, hospital linen, food, waste or warehouse bulk products

In addition to the above projects there are many small tasks that require working with the medical front-liners where one can understand a lot about contemporary technologies. As advances are happening, there is a point to make – recent studies in Jan 2021 show that Microwaves could be instrumental in stopping the spread of Coronavirus and the initial results are successful in curbing infection rates. Hence this could be a beautiful technology to use for disinfection and rapid decontamination which are not addressed by existing solutions¹.

¹ - <https://www.theengineer.co.uk/microwaves-reduce-spread-covid-19/>