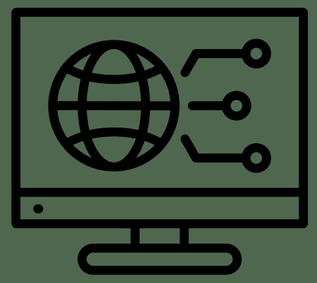
SDGs & My major

Candy / Buzz / Ivy / Shannon

Health Protection Program for Remote Areas :

Development and Implementation of an Intelligent Early Warning System



Contents

Topics Covered

Motivation

Methods

Execution Phase

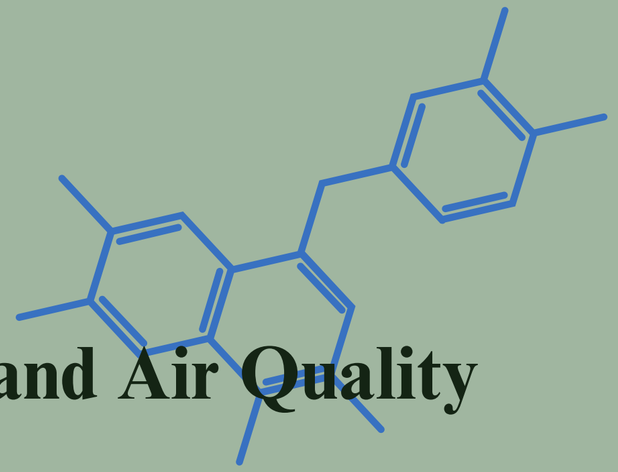
Expected Outcomes

Feed back

Motivation

Remote towns and outlying islands often face the challenge of **lacking nearby clinics or hospitals**. When residents fall ill or encounter accidents, there is often no way to transport them to a hospital for emergency care in a timely manner. Even upon arrival at a local medical facility, the issue of limited medical resources frequently arises. **By the time patients are transferred to major hospitals in urban areas, the golden window for effective treatment may have already passed**. Therefore, **early prevention and continuous health monitoring** would be an effective strategy to mitigate such risks.

Methods —— Chemistry



Caring for the Elderly in Rural Areas: Monitoring Water and Air Quality

- Most people living in rural areas today are elderly.
- We aim to identify the most suitable water and air conditions for their health.

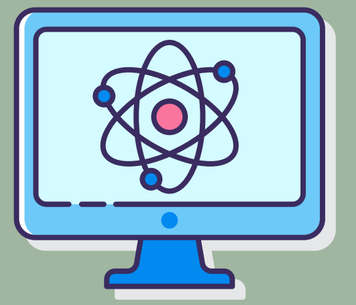
Water quality focus:

- Free from **heavy metals** and toxic chemicals
- Safe and balanced **pH levels**

Air quality focus:

- **PM2.5** levels (fine dust particles)

Methods —— Information Engineering



Using simple tools to check air and water quality

- Place basic sensors in local areas to **monitor water and air conditions**
- Store the collected data for future **tracking and observation**
- Send out alerts when the numbers go beyond safe levels

Setting up remote health stations for easier access to doctors

- Build simple “**online check-up points**” in rural communities
- Let people talk to doctors in big city hospitals through **video calls**
- Helps solve the problem of limited medical access, especially in emergencies

Execution Phase

1. **Needs Assessment and Data Collection**
   - Analyze medical resources and residents' health issues in remote or rural areas
   - Use surveys and government health data to understand local needs

2. **Pilot Planning**
   - Select one to two pilot areas to set up mobile medical stations, simple testing tools, and virtual clinics
   - Include air and water quality monitoring devices in the pilot, and establish an initial database

Execution Phase

3. **Technology Development and Verification**
   - Develop and verify portable testing tools
   - Design IoT-based environmental data monitoring systems and establish a cloud-based data analysis platform

4. **Cross-Sector Collaboration**
   - Collaborate with medical institutions, tech companies, and local government resources to ensure effective application of technology
   - Strengthen satellite and 5G coverage to enable virtual clinic operations

Execution Phase

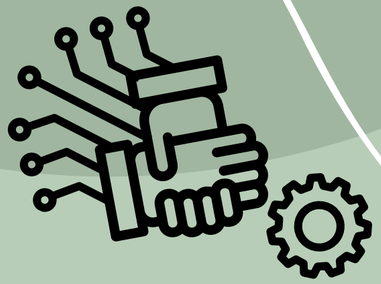
5. **Long-Term Operation and Monitoring**
   - **R**egularly analyze data and update testing tools and prediction models
   - Gather resident feedback to continuously improve the implementation model and expand it to other remote areas

Expected Outcomes

More effective disease prevention and early detection

Real-time environmental monitoring and response

Improved access to medical resources in remote areas



Combining chemistry and computer science to improve quality of life

Feed back

We hope to use a intelligent warning system to support healthcare in remote areas, ensuring that even places with limited medical resources can receive timely help, so every person is seen, cared for, and given access to basic healthcare with peace of mind.

Thank you!