DEVELOPMENT OF ENVIRONMENTAL HEALTH ENGINEERING FACILITIES, EQUIPMENT, SENSORS AND PUBLIC HEALTH SYSTEMS FOR TACKLING COVID-19 PANDEMIC

PREPARED BY

KOLADE JOEL OLAMIDE

17/ENG05/019
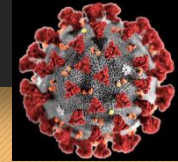
MECHATRONICS ENGINEERING

300L

AFE BABALOLA UNIVERSITY

WE WILL BE DISCUSSING ABOUT:

- CORONAVIRUS DISEASE (COVID-19)
- DEVELOPMENT OF ENVIRONMENTAL ENGINEERING HEALTH FACILITIES
- INTRODUCING MODERN EQUIPMENTS AND SENSORS
- DEVELOPMENT OF PUBLIC HEALTH SYSTEMS FOR THE TACKLING OF COVID-19 PANDEMIC

ABOUT CORONAVIRUS DISEASE (COVID-19)

- Coronavirus disease (COVID-19) is an infectious disease caused by a new virus. The disease causes respiratory illness (like the flu) with symptoms such as a cough, fever, and in more severe cases, difficulty breathing. You can protect yourself by washing your hands frequently, avoiding touching your face, and avoiding close contact (1 meter or 3 feet) with people who are unwell.

HOW IT SPREADS

- Coronavirus disease spreads primarily through contact with an infected person when they cough or sneeze.

- It also spreads when a person touches a surface or object that has the virus on it, then touches their eyes, nose, or mouth.

DEVELOPMENT OF ENVIRONMENTAL ENGINEERING HEALTH FACILITIES

As engineers its our duty to provide a faster and better way in which health facilities can work. When it comes to medical field the primary goal is to improve the health of people. Doctors have the knowledge of human body. They know what is good for a person and what not. But to build anything, you need engineers.

• Software, Computer or Mechatronics Engineers can write software that uses algorithms to analyze massive amount of health information and generate results that help people and doctors in making healthy decisions. Also, making health information readily available using cloud, will make work easier.

- One of the main reasons the system lacks stability and infrastructure is that not enough people are aware that health insurance is even possible and affordable for them.

- Once more people start purchasing quality health insurance, more money will be entering the health care system, and better facilities and hospitals can be built.

INTRODUCING MODERN EQUIPMENTS AND SENSORS

- Modern equipment's should be brought in to test for the coronavirus. People shouldn't have to wait for a long period of time before they know if they are positive or negative. Development of new modern day temperature sensors. Instead of the usual temperature reading equipment where someone has to hold it and point it to your head to see your temperature while others wait in line, sensors should be put in places like airports and big organizations where a large number of people walk in everyday.

- Mobile apps can be built to measure blood, urine etc. using accessories for your phone, mail to labs instantly, get results immediately. Or get alerts when your BP fluctuates or your sugar fluctuates or when your heart behaves erratically.

- Build better algorithms for insurance companies so they can provide better insurance for cheaper to a wider population.

A Picture of a mobile app and smart watch to keep medical records and a modern testing diabetes kit

DEVELOPMENT OF PUBLIC HEALTH SYSTEMS FOR THE TACKLING OF COVID-19 PANDEMIC

- Healthcare Engineering professionals play key roles in creating and developing hardware and software to innovate, support, improve and optimize the operation processes and systems of patient care, and to improve patient outcomes through engineering approaches.

- Protection of frontline staff- the protection and safety of the frontline staff(the doctors, nurses and all medical personnel attending to patients) should be the first move.

Challenges of development of environmental health engineering facilities, equipment, sensors and public health systems for tackling covid-19 pandemic.
(using Nigeria as a case study)

- Poor research institutes: The country lacks research institutes already before the pandemic COVID-19 hit. This is bad cause now that there's an outbreak various researches are meant to carried out before any engineering building can take place. An example is an engineer trying to set up a testing kit. He needs to write an algorithm for it and before a device is set up to output a result, the algorithm will give it specifics or conditions to look out for. If researches are carried out properly this will aid the engineer.

- Low funds/capital: A lot of engineers may have the idea of inventions to help combat the virus but not enough funds to actualize their ideas so it dies with them.

Suggestions for the development of environmental health engineering facilities, equipment, sensors and public health systems for tackling covid-19 pandemic.
(using Nigeria as a case study)

- Improvement of research institutes: Making robust research institutes that can stand the test of time will help enable the easier development of sensors and engineering facilities to tackle pandemics such as COVID-19. Even if it hits the country without preparation it will aid the quick combating.

- Institutions should be set up to receive good ideas of engineers in the society and help them bring it to reality. This will encourage others to even come up with better ideas knowing they'll be actualized at long last it will aid combating of COVID-19.

CONCLUSION

- There is no said cure to coronavirus disease, but there are ways as to which the virus can be contained. There are also ways to control the spread of the virus. So as caring humans we are to adhere to these measures.

- And we must also note that everyone is important in fighting covid-19.

THANK YOU
STAY SAFE, STAY AT HOME!

There's currently no vaccine to prevent coronavirus disease (COVID-19).

You can protect yourself and help prevent spreading the virus to others if you:

Do
- Wash your hands regularly for 20 seconds, with soap and water or alcohol-based hand rub
- Cover your nose and mouth with a disposable tissue or flexed elbow when you cough or sneeze
- Avoid close contact (1 meter or 3 feet) with people who are unwell
- Stay home and self-isolate from others in the household if you feel unwell

Don't
- Touch your eyes, nose, or mouth if your hands are not clean