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Op - Ed Essay Related to the COVID 19 Pandemic

A position paper: "Expect the Unexpected"

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Our country has suffered a tremendous unprecedented shock that has rocked the very foundations of our society. Plain and simple, -we have been attacked by a virulent deadly disease. It has been a medical Pearl Harbor or World Trade Center tragedy, which are dwarfed by the COVID-19 Pandemic. How can we defend ourselves against the unexpected? What have we learned, and how do we recover? What do we need to do? What can we do?

Note how our society had to change and adapt, after the Pearl Harbor and World Trade Center attacks. This pandemic likely will move up to first place in its traumatic impact on our society. Certainly the mortality rate has mushroomed, as well as having a very negative impact on our economy. It caught us all off guard, and was totally unexpected.

Leading the Defense

Our US Public Health Service has to become more like the Defense Department and our Defense Department, has to become more like the US Public Health Service. An outbreak of disease anywhere is an outbreak everywhere. We have developed a global economy, corporations, communications, universities, airlines, military, global thinking, but not global health. How can these other global initiatives work without global health? - They cannot.

We just were not prepared. We need an integrated interdisciplinary approach to be properly prepared for all possible and imaginable natural disasters, tornados, tsunamis, cyclones, hurricanes, typhoons, floods, fires, pandemics, as well as for all possible shocks both biological and manmade accidents, radioactive accidents, military attacks, bio terrorism warfare, and any other conceivable threats.

Clarity and Continuity in Decision-Making

We need a strengthened administrative structure that can quickly recognize and then legally organize a response to all kinds of unexpected disasters. To a great extent our country was in denial, when the pandemic got underway. Plain and simple this event, was outside the frame of reference and experience of most Americans. Nevertheless, the results are here to stay with us.

Develop Community Emergency Plans for Multiple Contingencies.

We need to further develop community emergency plans that connect with state and federal agencies that are prepared for any possible scenario.

In 2004, [Dr. P.K. Carlton](#), M.D., FACS, Lt. Gen USAF, (Ret) and former Surgeon General of the USAF, proposed the concept of "[SURGE](#)" Hospitals to Texas A&M University's College of Architecture, and initiated a collaborative exploratory research and design project that explored what a "[SURGE](#)" Hospital should be. We give credit to his great humanitarian vision. 17 teams of students then presented their architectural ideas for

"SURGE" Hospitals to [Dr. Richard Carmona](#), Surgeon General of the United States on Dec 1, 2004 at Texas A&M University.

We need an alternative system of health and hospital facilities that can handle the sudden **"SURGE"** of patients in disasters, epidemics or other unforeseen events. Such **"SURGE"** Health and Hospital Facilities need to be organized in every community in the USA. Examples of existing buildings that could quickly become **"SURGE"** Health and Hospital Facilities, are hotels, motels, high school gymnasiums, warehouses, churches, convention centers, and other appropriate buildings.

However buildings alone, cannot save lives or heal. They need to have qualified medical, nursing and allied health staff prepared with beds, blankets, linen, food, water, medicine and medical supplies, caps, masks, gowns, ventilators, emergency power, and security. Infection control is a key concept, and can help us in lowering the death rate.

More research and development needs to be done on special protective masks, and clothing that caregivers must wear. We cannot risk losing vital health professionals to the extreme demands on them physically and emotionally.

We should not bring patients with known highly infectious communicable diseases into a hospital that could bring the entire hospital down, taking patients, staff and families down, along with the downed hospital.

Developing a Plan

Legal agreements with hotels, motels convention centers, sports arenas, high schools, community centers need to be reached ahead of time, so that flipping them into **"SURGE"** Hospital Facilities could be accomplished quickly and seamlessly.

"SURGE" Health and Hospital Facilities will need to be staffed. That staff could be organized as a **"SURGE" Health Auxiliary**, and include groups such as physicians, nurses, other allied professionals, including qualified retired and qualified staff, so the existing health and hospital facilities are not overwhelmed and / or contaminated. We watched as medical staffs have been overwhelmed and too many contracted COVID-19. One doctor in New York City contracted COVID-19 and after recovering, then tragically committed suicide.

Planning for such unexpected events must begin on a grassroots level, but be coordinated with regional and statewide planning, coordinated with neighboring states, as well as with other countries.

New Planning, Design & Construction Program

We will need a new **"SURGE"** Program (similar to the Hill Burton program) for planning, design, construction, operation and maintenance of appropriate health facilities.

Sheltering in place orders need to be followed in a pandemic or our entire population can be placed at risk.

Guidelines

We need to develop new guidelines for **"SURGE"** Health & Hospital Facilities. This effort needs to be coordinated with experienced groups including:

AMA – American Medical Association
ANA – American Nurses Association
ASHE – American Society for Healthcare Engineering
AHA – American Hospital Association
APHA – American Public Health Association
ASHE – American Society for Healthcare Engineering
ASHRAE – American Society of Heating, Refrigeration and Air Conditioning Engineers
DOD – Dept of Defense
FGI – Facilities Guidelines Institute
HHS – Health & Human Services
INA – International Nurses Association
IHF – International Hospital Federation
IFHE – International Federation of Hospital Engineering
UIA – PHG – International Union of Architects – Public Health Group
USPHS – US Public Health Service

As well as Universities and architectural and engineering firms.

Ventilation and Air Exchanges

One of the most important areas to focus on in both existing health facilities and proposed **SURGE** Health & Hospital Facilities relates to fresh air circulation and exchanges so that the virus is not spread throughout a health facility thus contaminating it. Experienced mechanical engineers, who understand healthy air flow are vital to the success of the team.

Technology Needs to be Utilized More Widely.

The experience of not having enough ventilators on hand is a case in point. Another example is the importance of telemedicine in patient care, whether in a densely populated area or in a remote area. Mass testing for the COVID-19 must happen quickly, and new technology can make that happen. Perhaps mobile phones or wrist watches could be developed to detect when one is near a person who is infected.

Establish an Interdisciplinary “SURGE” Health & Hospital Facilities Task Force

An interdisciplinary task force should be assembled to undertake further development of the “**SURGE**” Health & Hospital Facilities concept. It should consist of representative agencies such as those listed above.

Conclusion

What we propose needs to happen – as quickly as possible – as we are woefully unprepared for future pandemics and disasters, or even the likely resurgence of COVID-19.

As we have spent billions of dollars on developing defense systems to prevent future Pearl Harbor and World Trade Center events, we need to rethink the defense and health of our people, in the context of new threats, and invest accordingly

About the authors:

The authors have been working together since the 1960's and have undertaken numerous research and architectural design projects, all over the world, and have authored and co-authored numerous publications together.

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