

Military-Civilian Medical Surge Response: Why It is More Critical Than Ever

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Introduction

Dealing with America's threats and hazards across the homeland mission space to the battlefield.



Photo Source: "[Homeland Response Force helps find, treat, save and decontaminate nuclear blast victims](#)" by [Like us on Facebook at CAGuard](#) is licensed under [CC BY 2.0](#).

Natural Disasters, Terrorism,
COVID-19 – My Life Changing Journey

(Rosenthal & Jones, 2020)

Issues and Challenges – The Problem

Medical Surge Capacity (Civilian-Military)

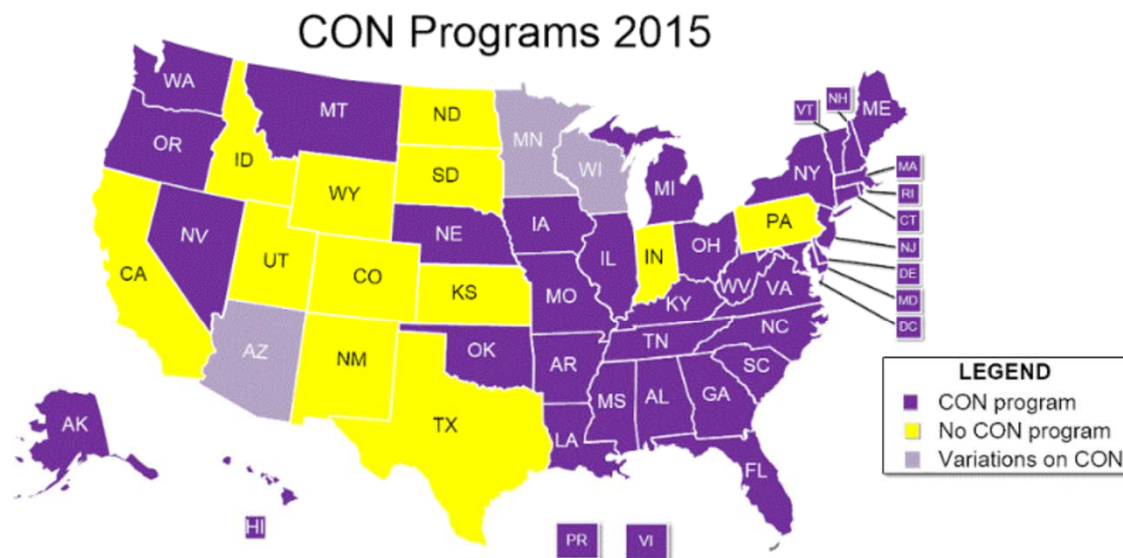


Photo Source: "EMSA Demonstration at Sacramento State" by Cal OES is licensed under CC BY-NC 2.0.

(Office of the Assistant Secretary for Preparedness and Response, 2012)

The Hill Burton Act of 1946 Established the Foundation of the Certificate of Need (CON) Law

Empty Beds = Lost Revenues, Which Leads to Price Inflation
(Mitchell, 2021)

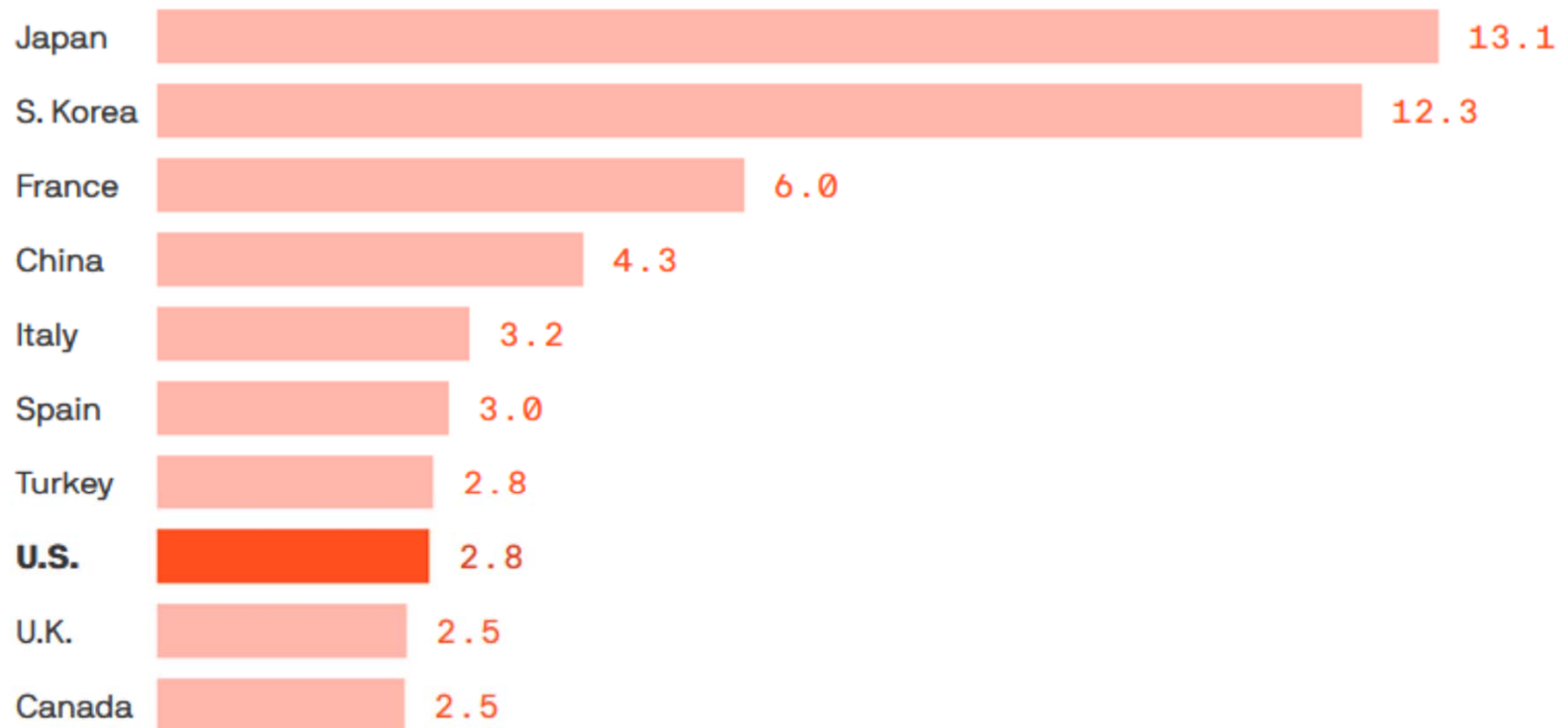


Source: NCSL, January 2016

STATES WITH CON PROGRAMS

Hospital beds per 1,000 people in select countries

2016 for U.S. and 2017 for all others



Adapted from [OECD](#); Chart: Naema Ahmed/Axios

(Altman, 2020)

Comparing Military Hospitals

As of September 1, 2014

There are currently **54 military hospitals** in the United States and overseas that provide inpatient services. Many compare poorly to leading civilian hospitals on measures of safety in maternity care. Of those independently evaluated for surgical care, half posted high rates of complications. Most of the hospitals serve an average of 30 or fewer inpatients a day. Some have been marked by the Pentagon for downsizing (2014).

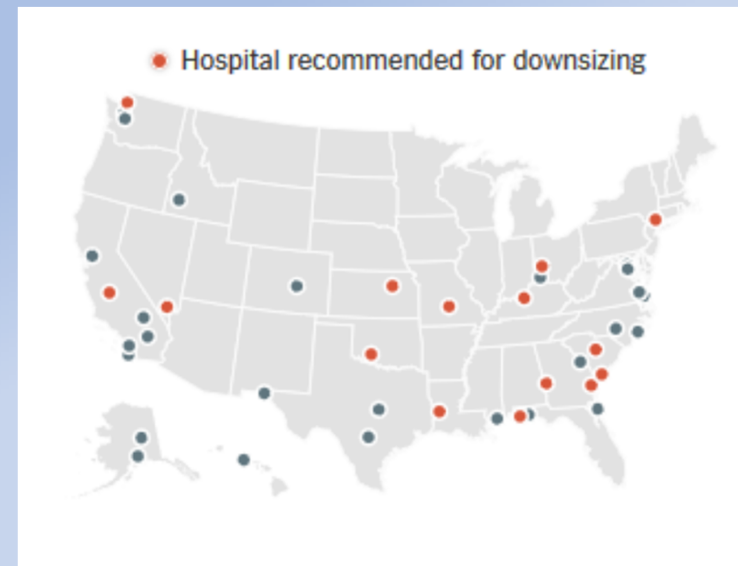
Scenario to consider based on Fort Riley (KS) and Wright Patterson Medical Center - 2014 data

Fort Riley (U.S. Army)

- 24 staff beds
- Population 48,000, which includes Soldiers, family members, retirees and Department of the Army civilians (2018)

Wright Patterson Medical Center (Air Force)

- 62 Staff beds
- Population 29,300 people, which includes Airman, family members, retirees, and the Department of Air Force civilians (Husley, 2022).



Need to Modernize Civilian/Military/Veteran Affairs Hospital Infrastructure



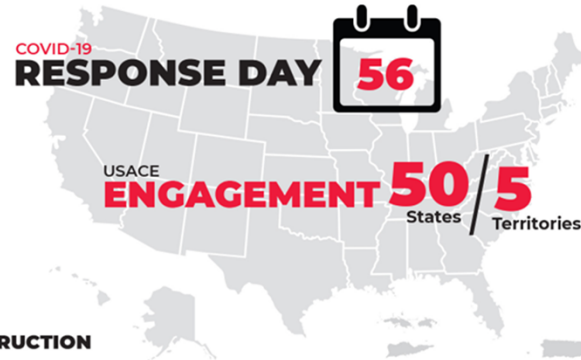
Photo Credit: Civil Defense Museum

Civil Defense Packaged Hospitals from the 1950's

(Alexiadis, 2011)

U.S. ARMY CORPS OF ENGINEERS (AS OF: 08-MAY 0730)

COVID-19 CORONAVIRUS



ADMINISTRATIVE

MISSION ASSIGNMENTS **64** OPEN: 38
CLOSED: 26

CUMULATIVE FUNDING **\$1.8B** MA: \$1.8B
NEPP FUNDING: \$4.4M

ENGAGED PERSONNEL / DEPLOYED: 1,109
SUPPORTING: 15,000

ASSESSMENTS



ALTERNATE CARE FACILITY TOTAL BED COUNT



ALTERNATE CARE FACILITY CONSTRUCTION



ENGINEERED SOLUTION PLANS
Approved site adaptations must be accomplished in as little as 5 days and at most 2 weeks to align with state projected virus infection peaks.

ARENA TO HEALTHCARE (A2HC)



4 STANDARD DESIGNS



All 4 designs can be adapted to serve COVID and NON-COVID patients.

HOTELS/DORMS TO HEALTHCARE (H2HC)



PROJECT COMPLETION



BUILDING STRONG®

SIMPLE SOLUTIONS FOR A COMPLEX PROBLEM

For more information about what the Corps is doing in response to COVID-19 visit: <https://www.usace.army.mil/coronavirus/>

USACE works in conjunction with the entire federal eco-system during responses like COVID-19 through FEMA learn more about their mission here: <https://www.fema.gov/coronavirus>

Source: (USACE, 2020)



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According to National Public Radio, U.S. alternate care sites established in hotels, convention centers hardly treated any COVID-19 Patients (Rose, 2020).



Union County, Ohio, Emergency Management Agency's Air Beam Shelters (Photos by Al Burzynski)

As of May 26, 2022, there are no modern alternate care site or military-civilian field hospital built for a highly contagious disease such as COVID-19 (Zhang, 2020).

Combating Med Surge

Extending the Golden Hour

(Global Health Security Agenda, 2020)



Warfighting



"8th US Army - Korea" by [U.S. Army Korea \(Historical Image Archive\)](#) is licensed under [CC BY-NC-ND 2.0](#).

Peacekeeping



"[Special Amphibious Reconnaissance Corpsmen provide tactical combat casualty care training to Soldiers.](#)" by [Official U.S. Navy Imagery](#) is licensed under [CC BY 2.0](#).

Humanitarian



"[Humanitarian Operations on Panay Island, Philippines](#)" by [DVIDSHUB](#) is licensed under [CC BY 2.0](#).



Photo by Sgt. Chris Stephens, 124th Mobile Public Affairs Detachment.

National Guard prepared for disaster response, America's Prepare-a-thon campaign urges personal disaster readiness.



Technical Advancements



(Segal, 2020)

Smart Pod – Shipping Container Based Medical Facility (Humanitarian Missions)



(Gordon, 2022)

Hardened alternative trailer system (HATS)

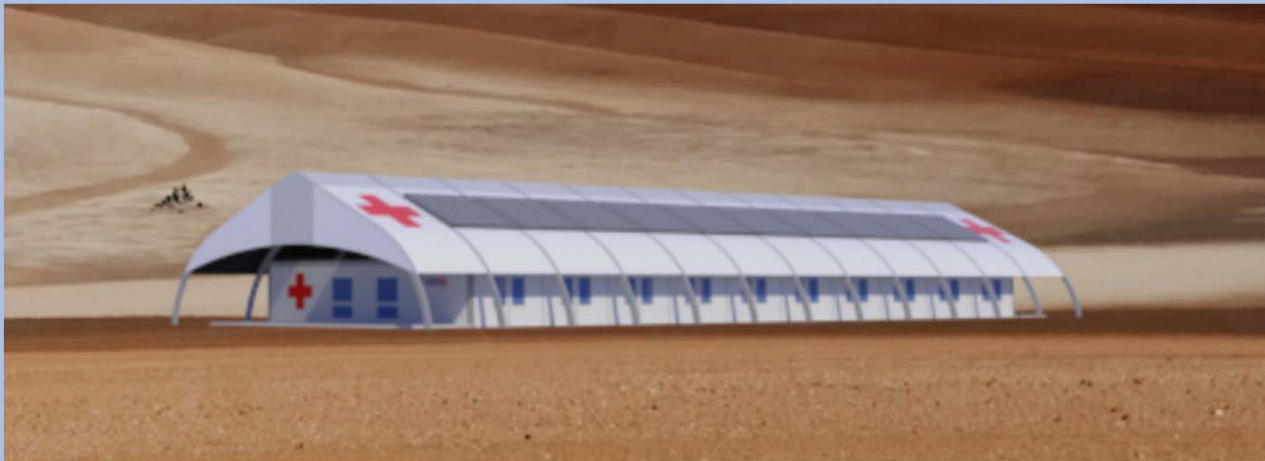


(ERDC, 2020)

The Force Sustainer System

Modular, rapid deployment for expedition and permanent missions.

Extreme adaptability and unsurpassed energy efficiency for any climate.



(Rutherford, 2022)



Photo Source: Dvids

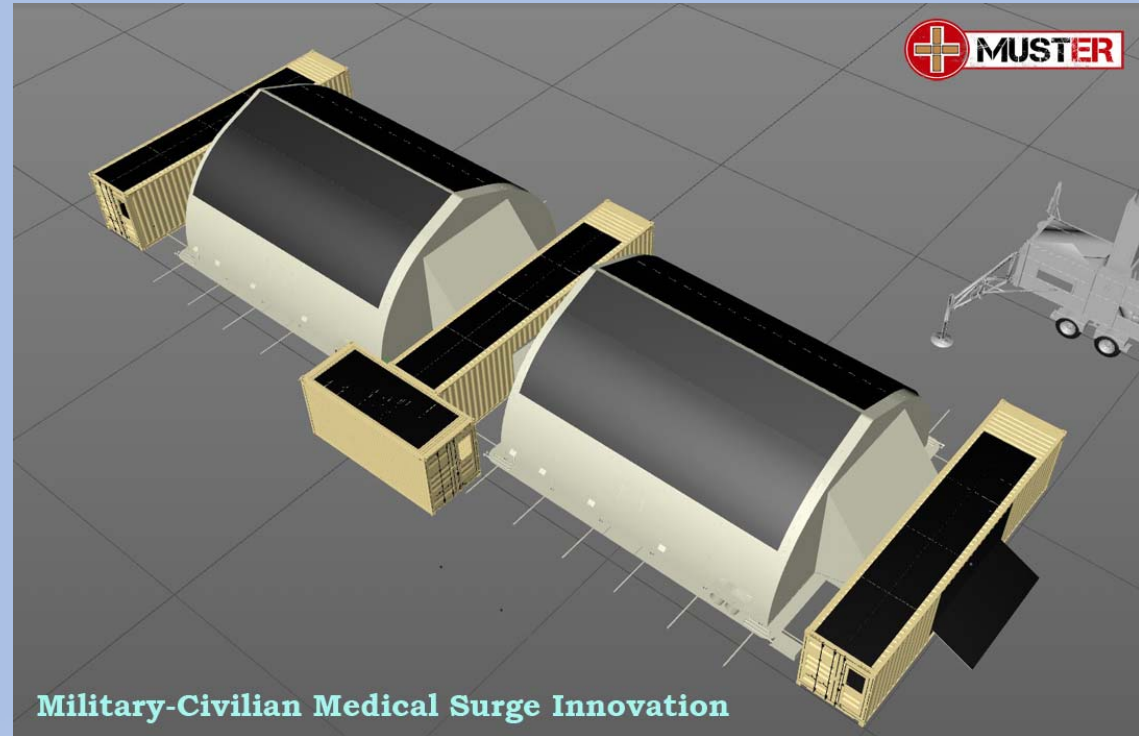
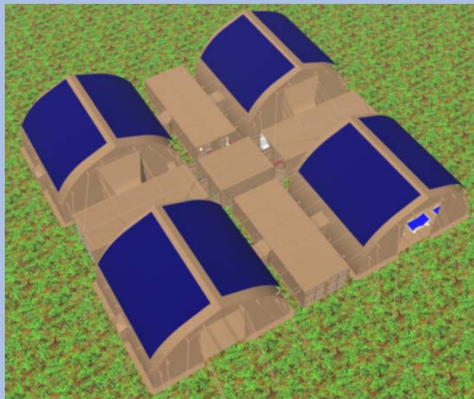
Defense Threat Reduction Agency's Chemical and Biological Technologies Department – Paint on Protection



Photo Source: "Pripyat - Hospital" by СмяСояд is licensed under CC BY-NC-SA 2.0

As of April 7, 2022, the World Health Organization (WHO) has recorded 100 plus attacks on Health Care Facilities in Ukraine as part of Russia's Special Operation (2022).

Innovative Solution – MustER Version 1.0



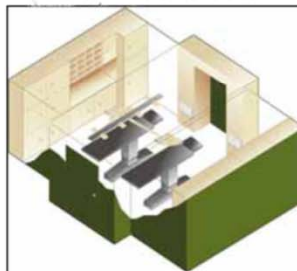


United States Army Medical Research and Materiel Command
"Protect, Project, Sustain"

USAMRMC

Future Medical Shelter System (FMSS) Update

As of:
21 April 2005



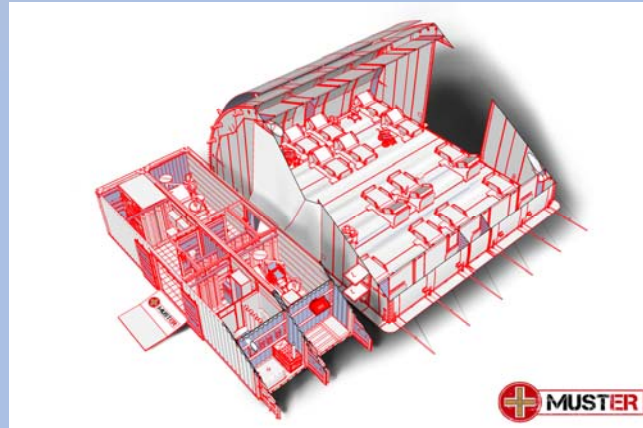
(Arnold, 2005)



The 10th Field Hospital, 627th Hospital Center, is set up at Forward Operating Base Warrior at Fort Polk, La., on November 2, 2017. (Photo by Scott Gibson – Department of Army)

(COL Jennifer Gurney et al., 2018) Joint Combat Trauma Center

- MustER, unlike tents and current COVID-19 Alternate Care Sites, is designed with strict infection-control measures in mind.
- We are building a modern field hospitals, alternate care site for a highly contagious disease.

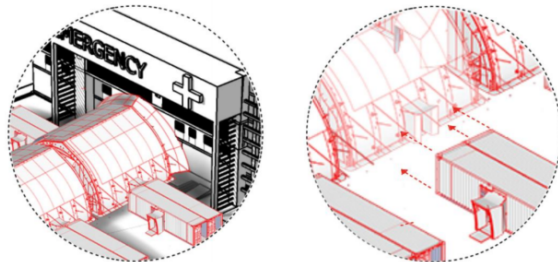


MustER Capabilities – Medical

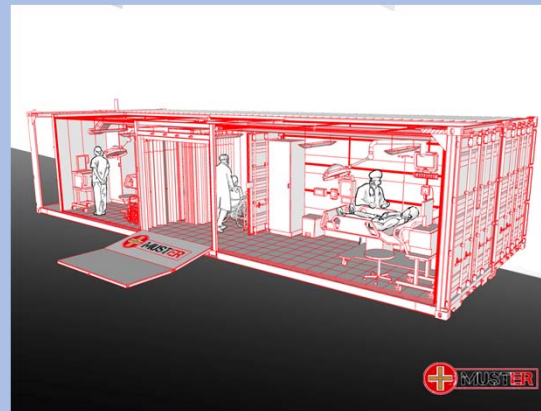
- Increase capacity up to 1,200 beds
- Modular
- Mobile
- Stackable – like Legos
- Triage
- Emergency Care
- Surgical Care
- Veterinary Care
- Radiology
- Blood Banking
- Lab/Pharmacy Unit
- Operation Stress Management
- Outpatient/Inpatient Services
- Physical Therapy
- Medical Logistics
- Operational Dental Care
- Screening
- Clinical Management Unit
- Vaccinations
- Women's Health
- Refugee Care
- Support Humanitarian Missions
- Military Grade
- **Deployable anywhere in the world**
- **Alternate power (solar and wind)**

Task 3: Civilian Aerial View/Call-outs - DRAFT

cdme.osu.edu



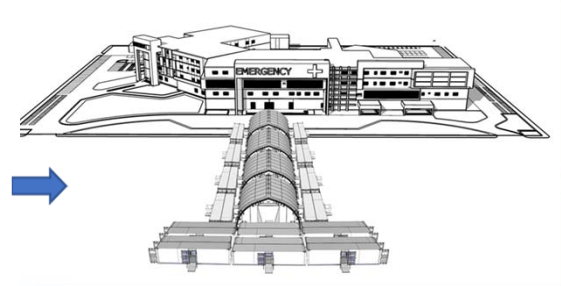
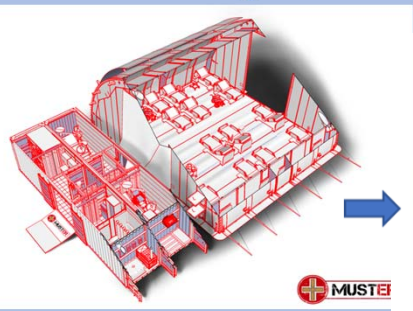
THE OHIO STATE UNIVERSITY The Center for Design and Manufacturing Excellence



There is currently no military or civilian mobile field hospital equipped to deal with a highly contagious disease. MustER MRS intends to develop a next-generation modern day hospital that the U.S. may use to support warfighting, humanitarian missions, and as part of the National Disaster Medical System in the event of a civilian national emergency.

The Solution – Our Product

Combining these technologies will create a military-civilian medical response system to combat medical bed surge in a **biological threat environment.**



COVID-19 Isolation Pod



Technical Readiness Level (TRL – 9)

Mobile Medical Unit – mitigate the spread of infectious diseases



Technical Readiness Level (TRL – 9)



Technical Readiness Level (TRL) - 3

Conclusion



Photo by Al Burzynski



Photo by Al Burzynski



Photos courtesy of
retired Master Sgt. Sean Clifton,
Special Operations

No direct or implied DOD endorsement.

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As a highly skilled strategic public relations marketing expert, crisis manager, and innovator with a proven ability to solve multifaceted problems.

Burzynski has spent the majority of his professional life in the United States Army, Department of Defense, and the Department of Veterans Affairs, where he has held roles ranging from combat arms to public affairs to emergency management. He serves on the Franklin County, Ohio, Community Emergency Response Team (CERT) as a volunteer.

Burzynski is a 2019 inductee into The State of Ohio Veterans Hall of Fame.



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