

# MEAT PACKING GONE WRONG: THE RESPONSE TO A UNIQUE CHEMICAL MASS CASUALTY

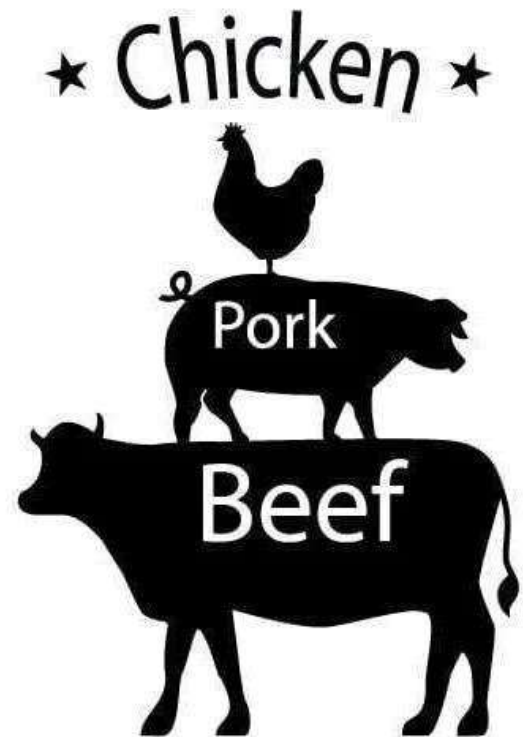
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# MEAT PACKING 101



# PROCESSING FLOOR



# PROCESSING & PACKAGING EQUIPMENT



# PACKAGING



# GAS SYSTEM



# GAS SYSTEM



# PRODUCT FOR SHIPPING





# FINAL PRODUCT



# CONDITIONS AND CONSIDERATIONS FROM THE SCENE

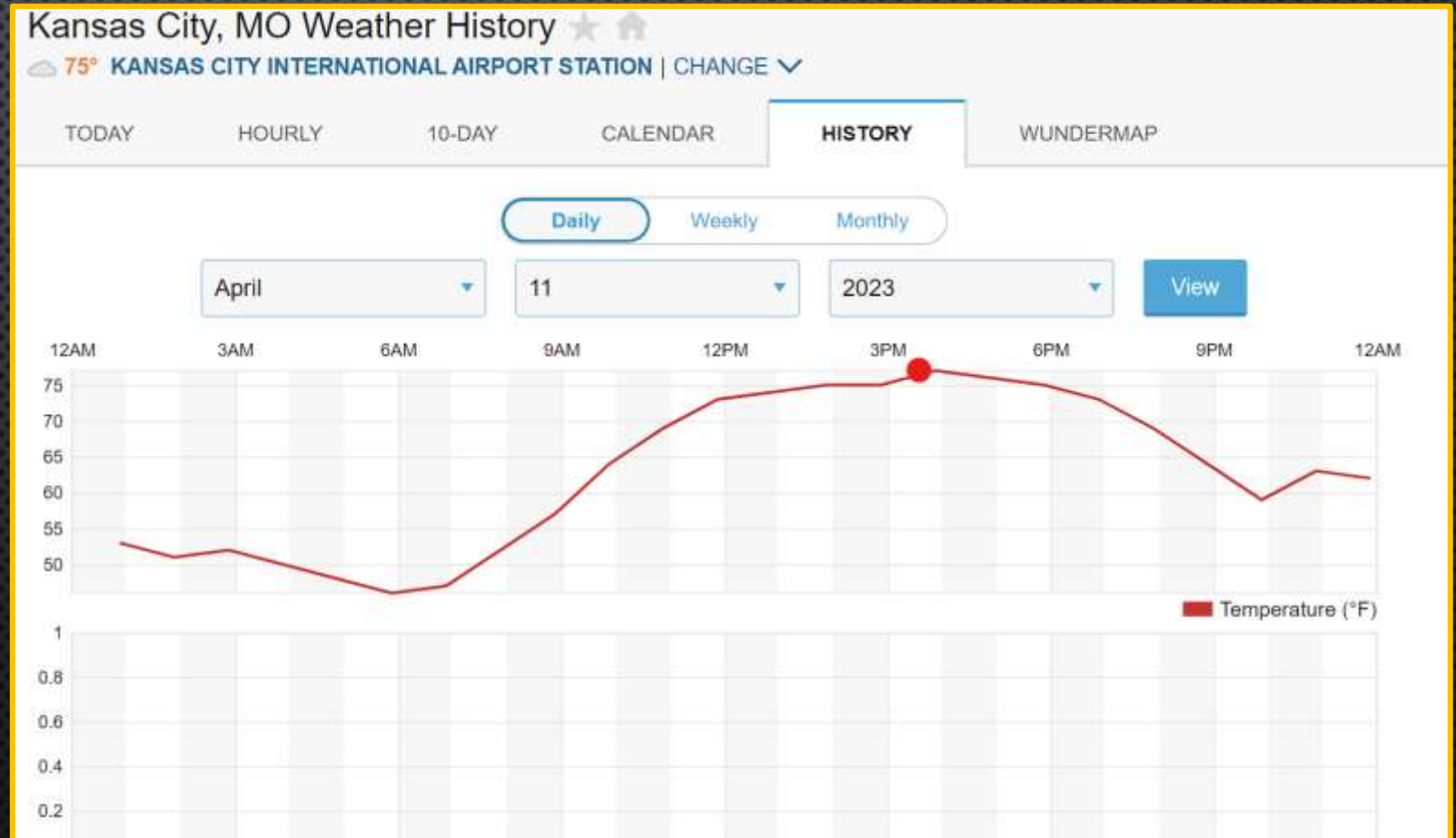
APRIL 11<sup>TH</sup> 2023



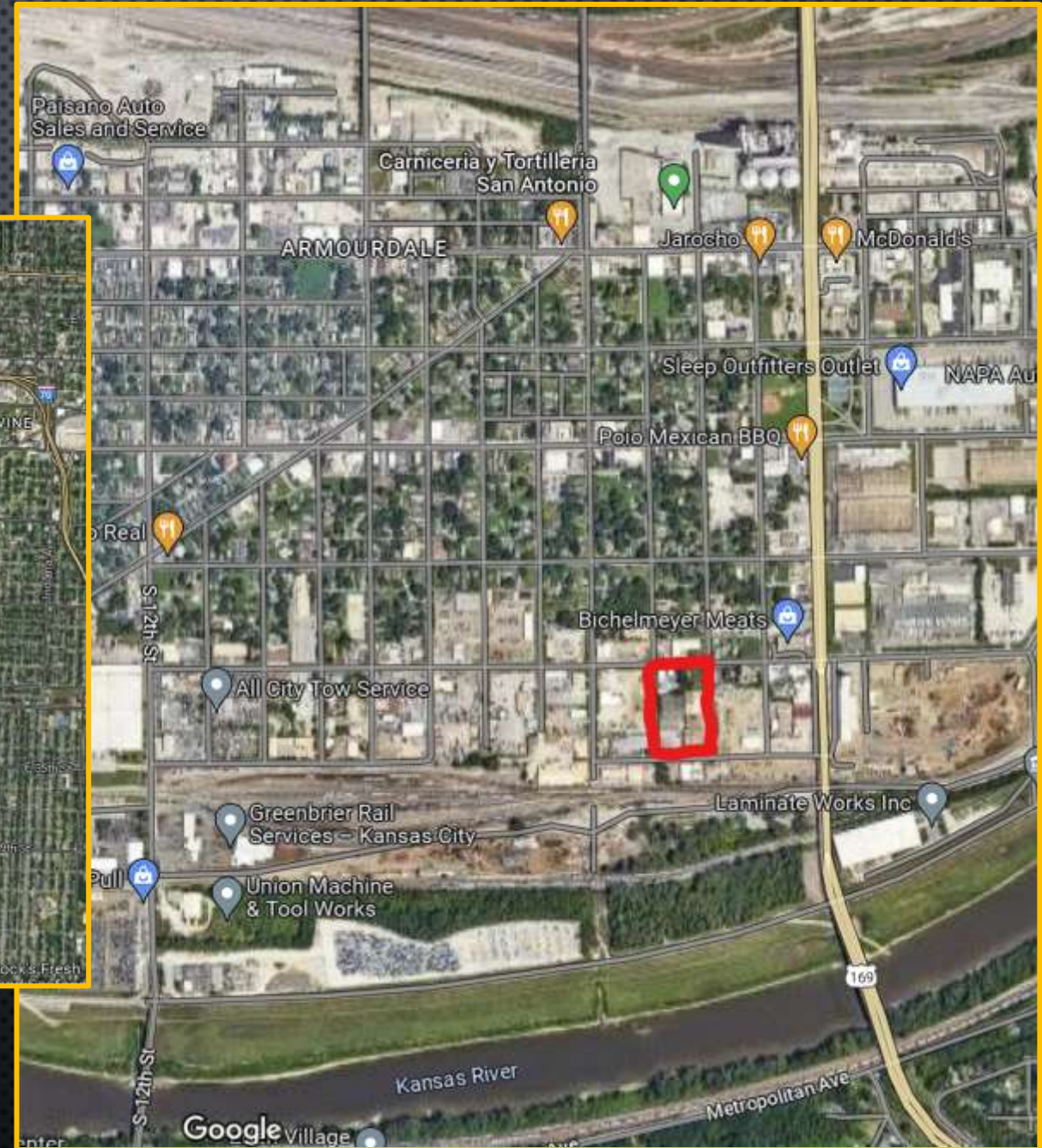
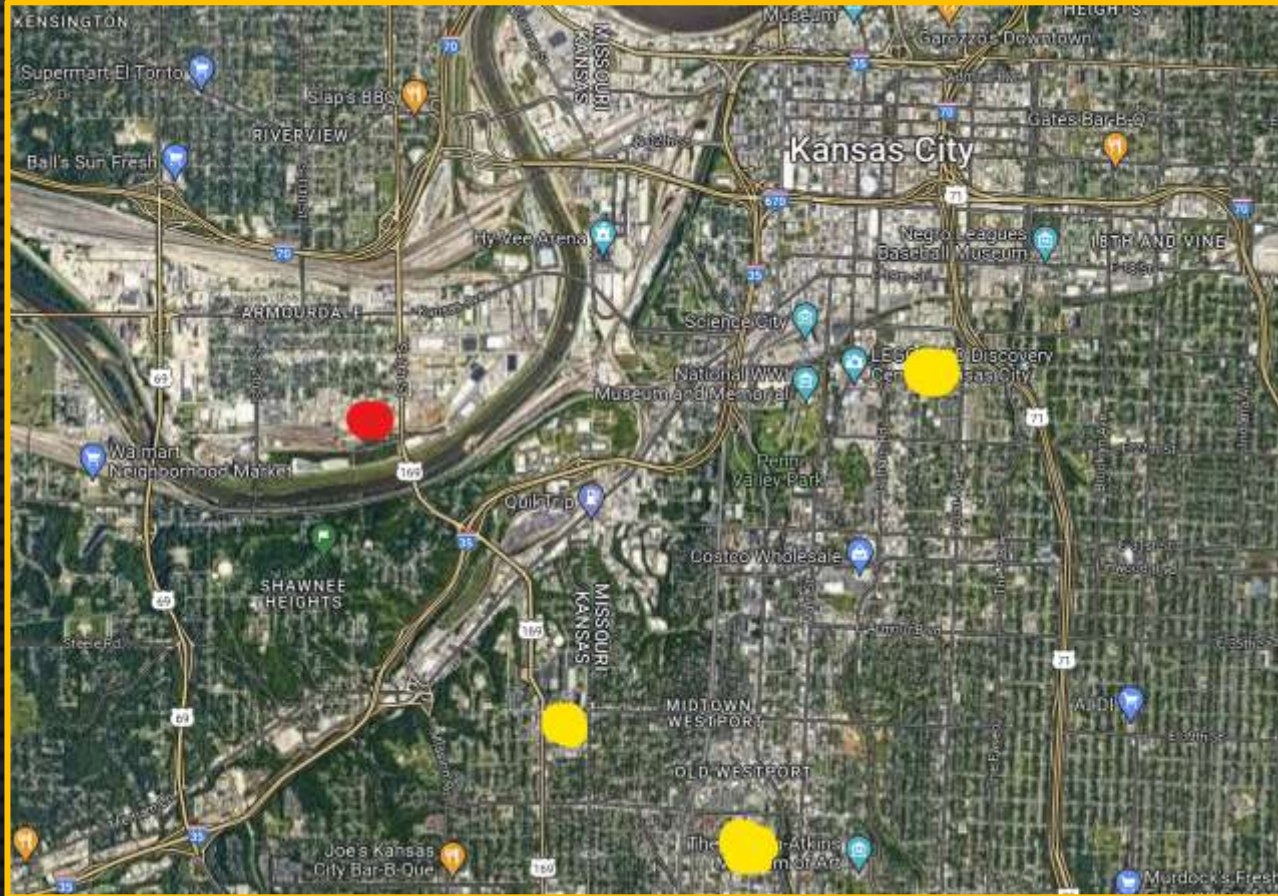
PHOTO: SCRIPPS MEDIA, ABUNDIS, 2023.

# WEATHER

- TEMPERATURE: 78°F
- HUMIDITY: 68%



# LOCATION



# BUILDING AND ACCESS



# ACCESS



## INITIAL 911 CALL: Pawnee Ave on a Respiratory distress



- STANDARD MEDICAL RESPONSE OF ONE ALS UNIT WITH 4 PERSONNEL AND ONE ALS MEDIC UNIT WITH TWO PERSONNEL

# RESPONSE

## GOALS:

1. RESCUE AND LIFE SAFETY.
2. TRIAGE AND TRANSPORT PATIENTS.
3. IDENTIFY HAZARDS.
4. MITIGATE THE SOURCE OF HAZARDS.
5. VENTILATE BUILDING TO SAFE LEVELS.
6. TURN OVER INCIDENT TO PROPERTY OWNER.

## INCIDENT BRIEFING (ICS 201)

1. Incident Name: Premier Foods	2. Incident Number: 2023-00009529	3. Date/Time Initiated: Date: 4/11/2023 Time: 13:46
4. Map/Sketch:		



# ARRIVAL

- ON ARRIVAL AT 1354 HRS MET WITH 5-6 PEOPLE ASSISTING A SINGLE FEMALE FROM THE BUILDING TO AMBULANCE
- OBSERVED PEOPLE STREAMING INTO THE LOT TO THE WEST BEHIND THE FENCED AREA



# REALIZATION

- OVER 70 EMPLOYEES ALL FILING OUT TO PARKING LOT
- OVER 30 EXPERIENCING SYMPTOMS
- ADDITIONAL RESOURCES WERE REQUESTED



# Mass Casualty Incident (MCI)

- 5 AMBULANCES
- 4 PUMPERS/TRUCKS
- 2 HAZMAT UNITS
- 5 CHIEFS
- 1 SAFETY OFFICER
- 1 EMS SUPERVISOR

## INCIDENT BRIEFING (ICS 201)

1. Incident Name: Premier Foods	2. Incident Number: 2023-00009529	3. Date/Time Initiated: Date: 4/11/2023 Time: 13:46
4. Map/Sketch :		
		

# ACTIVATE EM SYSTEM

- CONTACT JOHNSON COUNTY DISPATCH
- ADVISE OF ESTIMATED 30 PATIENTS
- UNKNOWN CHEMICAL POSSIBLY ANHYDROUS AMMONIA

KC Hospital ED	ED Status - KC	TCD Status	STEMI	Stroke	Trauma	Facility Operational Status
AdventHealth College Boulevard (KS)	Open-Normal Operations	Normal Operations	N/A	N/A	N/A	1. Fully Operational
AdventHealth Lenexa (Prairie Star) (KS)	Open-Normal Operations	Normal Operations	Open	Open	N/A	1. Fully Operational
AdventHealth Shawnee Mission (KS)	Open-Normal Operations	Normal Operations	Open	Open	N/A	2. Partial Operations
AdventHealth South Overland Park (KS)	Open-Normal Operations	Normal Operations	Open	Open	N/A	1. Fully Operational
Belton Regional Medical Center - TC	Open-Normal Operations	Last Update: 08 Jun 2023 16:32				Fully Operational
Cass Regional Medical Center - TC	Open-Normal Operations	Updated By: ED - AdventHealth South Overland Park				Fully Operational
Centerpoint Medical Center - TC	Open-Normal Operations	Normal Operations	Open	Open	Open	1. Fully Operational
Children's Mercy Hospital - TC	Open-Normal Operations	Normal Operations	N/A	Open	Open	1. Fully Operational
Children's Mercy Kansas	Open-Normal Operations	Normal Operations	N/A	N/A	N/A	1. Fully Operational
Excelsior Springs Medical Center	Open-Normal Operations	Normal Operations	N/A	N/A	N/A	1. Fully Operational
Kansas City VA Medical Center	Open-Normal Operations	Normal Operations	Open	Open	N/A	Fully Operational
Lee's Summit Medical Center	Open-Normal Operations	Normal Operations	Open	Open	N/A	1. Fully Operational
Liberty Hospital - TC	Open-Normal Operations	Normal Operations	Open	Open	Open	1. Fully Operational
Menorah Medical Center	Open-Normal Operations	Normal Operations	Open	Open	N/A	1. Fully Operational
North Kansas City Hospital - TC	Open-Normal Operations	Normal Operations	Open	Open	Open	1. Fully Operational
Olathe Medical Center	Open-Normal Operations	Normal Operations	Open	Open	N/A	1. Fully Operational
OPR - ER of Olathe	Open-Normal Operations	No Capability	N/A	N/A	N/A	1. Fully Operational
OPR - Pediatric ER of Overland Park	Open-Normal Operations	No Capability	N/A	N/A	N/A	1. Fully Operational
Overland Park Regional Med Ctr - TC	Open-Normal Operations	Normal Operations	Open	Open	Open	1. Fully Operational

MCI in KCK 30 plus patients

**\*\*Action Required\*\* for JLS Migration & Inactive Account Clean-Up**

MCI in KCK 30 plus patients

HELP REFRESH SHOW LESS

EXPORT VOICE NOTIFICATIONS HISTORY

Started: 04/11/2023 14:38 Ends: 04/12/2023 14:38 Started By: Johnson County Emergency Communications Center

Description: 30 plus patients on an ammonia inhalation

Address: 756 Pawnee Kansas City KS

Event Status

Help

KC Hospital ED	ED Status - KC	MCI RED	MCI YELLOW	MCI GREEN	Decon	Comment	Last Update	By User
Overland Park Regional Med Ctr - TC	High Volume-Open	2	4	15	Open	ED at Capacity, No Monitored Beds, WE ARE A CASUALTY	11 Apr 2023 14:43	Overland Park Regional Me...
Providence Medical Center	Open-Normal Operations	1	4	10	Open		11 Apr 2023 14:45	Providence Medical Center
Research Medical Center - TC	High Volume-Open	6	20	50	Open	ED at Capacity, INPT HOLDS	11 Apr 2023 14:54	Research Medical Center
Saint Joseph Medical Center	Open-Normal Operations	--	--	--	--		11 Apr 2023 09:44	Saint Joseph Health Cente...
Saint Luke's Hospital - TC	Open-Normal Operations	3	3	6	Open		11 Apr 2023 14:53	St. Luke's Hospital
Saint Luke's Northland Hosp. Barry Rd.	Open-Normal Operations	3	5	10	Open		11 Apr 2023 14:49	St. Lukes North Hospital
Saint Luke's South Hospital (Ks)	Open-Normal Operations	1	4	10	Open		11 Apr 2023 15:12	Saint Luke's South Hospi...
The University of Kansas Hospital - TC	Open-Normal Operations	12	18	24	Open		11 Apr 2023 14:57	The University of Kansas ...
University Health TMC - TC	Open-Normal Operations	4	4	10	Open		11 Apr 2023 15:09	UH TMC ED
Summary	N/A	52	117	299	N/A			

Status Type Summary	Total
MCI GREEN	299
MCI RED	52
MCI YELLOW	117

# IDENTIFIED THE PRODUCT

- COOLING SYSTEM RUNS ON ANHYDROUS
- PACKING SYSTEM RUNS ON A TRI-MIX
  - ⇒ CARBON DIOXIDE/NITROGEN/CARBON MONOXIDE
- VERIFIED WITH UNIVERSITY OF KANSAS HEALTH SYSTEM WITH LAB WORK



# AMBULANCE ROTATION

- 30 PATIENTS TRIAGED DOWN TO 16 TOTAL
- ALL EXCLUSIVELY SPANISH-SPEAKING



# Hospital Conditions and Considerations





# The University of Kansas Health System

- LICENSED AT OVER 1,000 BEDS
- AVERAGE CENSUS ON 39<sup>TH</sup> & RAINBOW CAMPUS - >800
- EMERGENCY DEPARTMENT ~60 BEDS

## Emergency Department Status

Tuesday April 11<sup>th</sup>  
@ 1430

ED full w/ 57  
patients

~15 patients in the  
waiting room.

MCI in KCK 30 plus patients

\*\*Action Required\*\* for JLS Migration & Inactive Account Clean-Up

MCI in KCK 30 plus patients

# MCI Alert @ 1439

HELP REFRESH SHOW LESS

EXPORT VOICE NOTIFICATIONS HISTORY

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Status Type Summary	Total
MCI GREEN	299
MCI RED	52
MCI YELLOW	117

# MCI Bed Poll



Weekdays (7a-7p)

Red: 12

Yellow: 18

Green: 24



Nights (7p-7a) &  
Weekends

Red: 6

Yellow: 10

Green: 15

## Ammonia Exposure?

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First patient arrived 14 minutes before MCI poll was created.

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The health system already had three patients from the scene.

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No proactive measure for decontamination or additional patient eval was taken due to lack of notification.

# Response



- 16 PATIENTS WERE TRANSPORTED TO THE ED
  - AGE RANGE 21-58
  - 2 WERE PREGNANT
- FIRST PATIENT ARRIVED @ 1425
- LAST PATIENT ARRIVAL @ 1529
- ALL NON-ENGLISH SPEAKING

# Carbon monoxide (CO) Patient Evaluation & Treatment

100% O<sub>2</sub> via NRB or High Flow NC



## Hyperbaric Treatment Criteria

Syncope

POC Lactate

EKG Changes

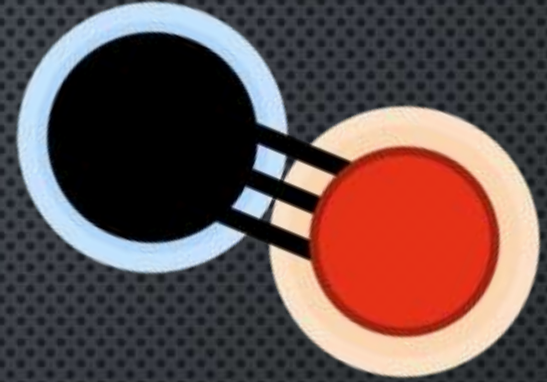
Special  
Circumstance (i.e.  
pregnant)

# Hyperbaric Oxygen (HBO) Treatment

- EIGHT PATIENTS REQUIRED EMERGENT HBO TREATMENT
- DUE TO HEALTH SYSTEM HBO CAPACITY – TWO PATIENTS WOULD REQUIRE TRANSPORT
  - CLOSEST EMERGENT HBO FACILITY TO THE HEALTH SYSTEM WAS IN OMAHA, NEBRASKA.



# Hospital Outcomes



- 8 PATIENTS TREATED AND RELEASED
- 6 PATIENTS ADMITTED FOR HBO TREATMENT, AND DC'D W/IN 48 HOURS
- 2 PATIENTS TRANSFERRED TO LOCAL HOSPITAL FOR HBO TREATMENT AND ADMISSION



# Lessons Learned

## EMS

- IDENTIFYING THE SITUATION AND DEALING WITH UNCERTAINTY
- BALANCING THE MISMATCH BETWEEN THE CONTINGENCY PLAN AND REALITY
- ESTABLISHING A FUNCTIONAL COMMAND SYSTEM
- ADAPTING THE MEDICAL RESPONSE TO THE ACTUAL AND OVERALL SITUATION
- MORE TRAINING FOR THE EM SYSTEM
- UNDOCUMENTED WORKERS

## HOSPITAL

- COMMUNICATIONS BETWEEN CONSULTANT STAFF AND CLINICAL STAFF.
- ABILITY TO HAVE MORE COMMUNICATION BETWEEN FIRE/EMS AND THE ED
- REVIEW MCI PLANS AND MAKE SURE TO NOT FOCUS ON ONLY TRAUMA RELATED MCI EVENTS
- REMEMBER TO CONTACT YOUR LOCAL POISON CONTROL CENTER
- INTERPRETER SERVICES

# Health Care Coalition Conditions and Considerations

**MARC-HCC**

MID-AMERICA REGIONAL COUNCIL  
HEALTH CARE COALITION

*Collaborating to Advance  
Health Care System Resilience*



# Timeline of Regional Response events

- 1439 RHCC DUTY OFFICER RECEIVED MCI ALERT VIA EMRESOURCE
  - INITIALLY ISSUED INCORRECTLY
  - DELAY FROM SCENE REQUEST TO INITIATION OF ALERT
- 1445 RHCC DUTY OFFICER IN CONTACT WITH A. MARSHALL
- 1445 - 1530 KANSAS & MISSOURI HCC COORDINATOR NOTIFICATIONS & COMMUNICATIONS
  - KS RRC NOTIFICATIONS
    - WYANDOTTE COUNTY EMERGENCY MANAGEMENT
    - KS RRCS
    - KDHE PREPAREDNESS STAFF
    - KANSAS HOSPITAL ASSOCIATION
  - MO RRC NOTIFICATIONS
    - HCC HOSPITAL LEADERSHIP AND DUTY OFFICER GROUP
    - MISSOURI HOSPITAL ASSOCIATION
    - MISSOURI HCC COORDINATORS

# Timeline of Regional Response events cont.

- 1530 THREAT ASSESSMENT TEAM CONVENED
  - NEED TO URGENTLY ASSESS HBO CAPABILITIES IN THE REGION
  - CONSIDERATION FOR VULNERABLE POPULATIONS
- 1549 HCC COORDINATORS WORKED IN KANSAS & MISSOURI TO BUILD EMRESOURCE SPECIALTY RESOURCE QUERIES
- 1711 HYPERBARIC CAPABILITY QUERIES ACTIVATED IN EMRESOURCE
  - MISSOURI AND KANSAS CITY METRO
  - STATE OF KANSAS
- 1853 RHCC DUTY OFFICER ENDS EICS EVENT

## POST-EVENT FOLLOW UP:

- VULNERABLE POPULATION OUTREACH EVENING/NEXT DAY
- REGIONAL HOT WASH

# Successes

- THREAT ASSESSMENT TEAM CONVENED QUICKLY
- CONNECTIONS THAT KEPT PATIENTS IN THE REGION
- COLLABORATION WITH HCC COORDINATORS ACROSS BOTH STATES
- *DEVELOPMENT OF HBO QUERY*
- VULNERABLE POPULATION OUTREACH AND FOLLOW-UP
- PLANS WERE VALIDATED



# Considerations & Areas for Improvement

- ABILITY TO GATHER ACCURATE INFORMATION WITHOUT INTERFERENCE
  - WHAT IS NECESSARY BASED ON SIZE AND SCOPE OF EVENT? BALANCE OF REGIONAL AWARENESS AND PREPAREDNESS VS RISK OF CONTRIBUTING TO CHAOS
- MCI ALERT AND ACTIVATIONS
  - CURRENT PROCESS VS BACK-UP OPTIONS
  - KNOWN ISSUE
- BUILDING TRUST IN UNDOCUMENTED WORKERS FOR RESPONSE
  - TRUSTED MESSENGERS IN COMMUNITIES

# Considerations & Areas for Improvement cont.

- NEED TO BE ABLE TO QUICKLY AND EFFICIENTLY ASSESS FOR OTHER SPECIALTY BEDS AND/OR RESOURCES ACROSS THE REGION AND STATE LINES
  - UNABLE TO ANTICIPATE AND LIST EVERY SPECIALTY RESOURCE
  - CLEAR DEFINITIONS

The screenshot displays a web interface for a "Hyperbaric Capability Query - Incident Response Requested". At the top, there are navigation buttons for EXPORT, VOICE NOTIFICATIONS, EDIT, and HISTORY. Below these, the query details are shown: Started: 04/11/2023 17:11, Ends: 04/12/2023 17:11, Started By: State Administrator. The description states: "Currently assessing statewide hyperbaric capability in response to a large carbon monoxide leak in the Kansas City area with multiple patients that treatment. Please provide the requested information on behalf of your facility to assist in finding appropriate treatment availability." The main part of the interface is a table titled "Event Status" with the following columns: KC Hospital ED, Hyperbaric Capability, Hyperbaric Availability, Hyperbaric Capacity, and Available Staffed Beds: Adult ICU. The table lists 14 hospitals with their respective capabilities and bed counts.

KC Hospital ED	Hyperbaric Capability	Hyperbaric Availability	Hyperbaric Capacity	Available Staffed Beds: Adult ICU
AdventHealth College Boulevard (KS)	--	--	--	--
AdventHealth Lenexa (Prairie Star) (KS)	Yes	No	1	0
AdventHealth Shawnee Mission (KS)	Yes	No	1	6
AdventHealth South Overland Park (KS)	--	--	--	--
Belton Regional Medical Center - TC	No	No	0	0
Cass Regional Medical Center - TC	No	No	0	0
Centerpoint Medical Center - TC	--	--	--	--
Children's Mercy Hospital - TC	No	No	0	0
Children's Mercy Kansas	No	No	0	0
Excelsior Springs Medical Center	No	No	0	10
Kansas City VA Medical Center	No	No	0	0
Lee's Summit Medical Center	Yes	Yes	2	0
Liberty Hospital - TC	Yes	No	1	1

# Q & A





## CONTACT INFORMATION

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Thank  
You