Disaster Recovery & HIT: A Lesson from Joplin

Introduction and Welcome:
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Presenter:
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Chief Operations Officer
Access Family Care
Before we begin...

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Missouri’s Federally-designated Regional Extension Center

- University of Missouri:
  - Department of Health Management and Informatics
  - Center for Health Policy
  - Department of Family and Community Medicine
  - Missouri School of Journalism

- Partners:
  - EHR Pathway
  - Hospital Industry Data Institute (Critical Access Hospitals)
  - Missouri Primary Care Association
  - Missouri Telehealth Network
  - Primaris
Vision

Assist Missouri's health care providers in using electronic health records to improve the access and quality of health services; to reduce inefficiencies and avoidable costs; and to optimize the health outcomes of Missourians
What is our role?

- For providers who do not have a certified EHR system - We help you choose and implement one in your office
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Disclosures

The Office of Continuing Education, School of Medicine, University of Missouri is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The Office of Continuing Education, School of Medicine, University of Missouri designates this live Internet educational activity for a maximum of one AMA PRA Category 1 Credit™. Physicians should only claim the credit commensurate with the extent of their participation in the activity.

The learning objectives of this live Internet educational activity are:

- Choose an appropriate electronic health record for the practice, create a change team, redesign practice workflow and successfully implement transition to electronic records.
- Appropriately track quality measures in electronic health records and to create accurate reports of quality indicators; physicians will understand how to use indicators to improve patient outcomes.
- Identify potential privacy and security issues in individual practices that are utilizing electronic health records and provide tools for practices to use to assess their security measures to see if they are appropriate.
- Measure and track the way individual practices are reporting on the meaningful use requirements in the federal HI Tech Act; understand additional clinical reporting requirements contained in meaningful use phases two and three.
- Appropriately design and implement patient portals for patients to access their health care information and learn how to better take care of their health conditions.

The planning members and presenter for this activity have no commercial relationships to disclose.
Cerner and the University of Missouri Health System have an independent strategic alliance to provide unique support for the Tiger Institute for Health Innovation, a collaborative venture to promote innovative health care solutions to drive down cost and dramatically increase quality of care for the state of Missouri. The Missouri Health Information Technology Assistance Center at the University of Missouri, however, is vendor neutral in its support of the adoption and implementation of EMRs by health care providers in Missouri as they move toward meaningful use.

This regional extension center is funded through an award from the Office of the National Coordinator for Health Information Technology, Department of Health and Human Services Award Number 90RC0039/01.
Disaster Recovery & HIT: A Lesson From Joplin

ACCESS Family Care’s Call to Action

Presenter:
Debra Davidson, PhD  Chief Operations Officer
Joplin

- **Joplin** is in SW Missouri within the "four states" region comprised of Oklahoma, Kansas, Missouri and Arkansas.

  - The city is located in southern Jasper county and extends into northern Newton County.
  - 49,024 population
  - 174,300 Metropolitan Statistical Area
  - The daytime population easily swells to 270,000
  - 400,000 people resides within a 40 mile radius of Joplin, making it the fourth largest metropolitan area in Missouri.
ACCESS Family Care

• Federally Qualified Health Center (FQHC)
• 3 Medical/dental clinics:
  – Joplin     Jasper county
  – Anderson   McDonald county
  – Cassville  Barry county
• 1 Medical clinic and administrative building
  – Neosho     Newton county
• Employs 130* staff including medical/dental professionals (almost half of our workforce is located at our Joplin clinic)  * about 160 employees now
1. An Emergency Preparedness Plan is in place
2. Our recall roster is continuously updated and disseminated for all employees to keep on-hand
3. Thanks to the leadership and MPCA’s focused grants and their dissemination of ASPR funds over the years, ACCESS has emergency cots, two-way radios, medical supplies and Personal Protective Equipment on hand
4. New employees are oriented regarding emergency response
5. Staff are updated to changes in the organizations response assignments within the community and participate in annual safety and emergency training
5. ACCESS participates in monthly Local Emergency Preparedness Collaborative (LEPC) meetings for Joplin/Jasper county (Region D) & quarterly Chaos Control Coalition meetings for McDonald/Barry counties (sub-Region D)

6. Our assigned role is to participate in clinic & community-medical/healthcare related functions as assigned:
   • Respond to community disasters in a supportive function
   • Provide mass vaccination in a terrorist event or epidemic proclamation in collaboration with the health department(s)
   • Care for walking-wounded
   • Send a representative to the Emergency Operations Center
   • Support other elements of the medical community
Sunday, May 22, 2011  EF-5 Tornado

The approaching storm
Sunday, May 22, 2011 - 5:41 pm

- Tornado touchdown at west edge of Joplin
- Cut a path 3/4 mile wide, 6 mi across the center of town & continued for 7 1/2 mi
- Thunder, lightening, rain, and hail
- Winds in excess of 200mph
• Forward speed 20mph
• Survivors described a leading edge, a central ”eye” and then a back edge
• It was a “5” on the Enhanced Fujita (EF) scale - Less than 1% of the tornados are of an EF-5 intensity
• This was the deadliest tornado in the US since 1947, destroying over 25% of the city of Joplin and cutting it in half
Emergency personnel walk through a neighborhood severely damaged by a tornado near the Joplin Regional Medical Center in Joplin, Mo., Sunday, May 22, 2011. A large tornado moved through much of the city, damaging a hospital and hundreds of homes and businesses. (AP Photo/Mark Schiefelbein)
The tornado that hit Joplin was so strong that it de-barked trees in its path. (AP Photo/Mark Schiefelbein) More cars that were tossed around like toys as a result of a devastating tornado in Joplin. (AP Photo/Roger Nomer) Cars were flipped and totaled in the event. (AP Photo/Mike Gullett)
Joplin and area:

- 8,000 total properties destroyed
- 550 businesses destroyed or damaged
- 5,000 employees were without a place to work
- 1,200 filed for unemployment
- 19,000 vehicles destroyed
- 7,500 homes severely damaged
- 12,000+ people displaced
- 3 billion+ dollars in property loss
- 75% of the schools including Joplin High School destroyed
- 2,500 tornado related injuries treated
- 161 Tornado related deaths
- Immeasurable human tragedy & suffering
Remnants of St Mary’s Church
Major commercial business section wiped out
As far as the eye could see, there was damage in Joplin. A Wal-Mart overlooks an ugly scene. An emergency worker carries a girl to safety from the remains of Academy Sports in Joplin, Mo. after a tornado struck the city on Sunday evening, May 22, 2011. (AP Photo/The Joplin Globe, Roger Nomer)
Before and After
Most densely populated residential neighborhoods leveled
Resulting devastation:

- One of the city’s two hospitals incapacitated, St. John’s Regional Medical Center

St. John’s Reg. Medical Center - 2 blocks north of Freeman Hospital

(AP Photo/Mark Schiefelbein)
Resulting devastation:

• **75%** of Joplin’s school buildings were destroyed
That night in Joplin:

- Communication towers were destroyed
- Cell phone communication was sketchy
- Cable outage
- Local TV & radio stations were off the air
- Utilities = gas & electric outages extended to areas beyond the disaster zone
- Water lines ruptured
- Streets blocked by vehicles, fallen trees, power lines and debris
- Very quickly the passable streets became gridlocked
- No one knew the extent of the destruction
ACCESS Family Care’s Joplin Clinics

• We operated a single primary care provider’s office located within a behavioral health facility across from St. John’s, which sustained heavy damage.

• However, our largest clinic is approximately 15 blocks north of the disaster area.

• The clinic was unharmed and was fully operational with both electricity and water despite wide-spread outages.
TRIAGE AREA:
20 cots, medical supplies, paper charts, medications were quickly gathered in our large waiting room, partitioning an area off, which facilitated greater access rather than transporting the injured through doors and hallways to the exam rooms.
That night @ ACCESS:

- Within a few hours injured community members arrived in large numbers in cars or trucks, on foot, & all means of conveyances.
- The injured were triaged as they arrived.
- Our nurses, doctors, dentists and nurse practitioners provided care.
- Several patients were worse than “walking-wounded”.
- Critically injured, those requiring x-rays, or a higher level of care were transported (in some instances by our staff) to outside area facilities.
- Patient care continued until 2am, when the injured ceased arriving.
- Over 125 community members treated at ACCESS that night.
- The clinic reopened the next morning, at 8 am, the usual time.

- There was no internet access and thus no EHR, therefore requiring paper charts.
- ACCESS keeps pre-printed forms and an abbreviated form for emergency triage.
That night @ the EOC:

- Controlled chaos reined
- Tables were set up with assignments labeled
- Phones, radios, pads, pens, forms, maps distributed
- Communications in & out of the EOC required 2-way radios resulting in heightened noise!!
- Commanders for the disciplines arrived and efforts were organized and coordinated
Emergency Operations Center at the City’s Police Department

Inside the EOC
First few days throughout Joplin:

- City locked down the hazardous disaster zone and a curfew was imposed
- City initiated priority search and rescue
- ACCESS continued to treat the injured community members as well as search and rescue personnel and volunteers
- Boil order was issued due to low water pressure
- Water & gas off or low pressure
- Cable and electricity remained off in many areas
Early Negative Business Impact

Decrease in productivity:
✓ Many scheduled patients failed to keep their appointments, resulting in some daily No Show rates as high as 75% on our medical and dental schedules

Interruption in internet access:
✓ Our IT vendor’s building was severely damaged except their safe room, where our servers were located. They were able to recover our servers and move them to our community education room
✓ EHR was reestablished but since there was no internet service, this resulted in disabling our EHR for all of our other clinics located counties away

Decrease in cash flow:
✓ Due to internet disruption, our billing staff (located in Neosho) was unable to submit claims for any of our clinics’ services
✓ Staff traveled to Joplin to drop claims and do their work

Communications interruptions:
✓ Clinic phones (being voice over IP) operable only within the clinic
✓ Landline phones (including fax) were available
✓ Cell Phone reception was undependable – texting worked best

Water pressure extremely low with a boil order
✓ Port-a-potties were delivered and placed near our front door
✓ Hand sanitizer distributed everywhere
✓ Utilized bottled water, particularly in dental operatories
Evolution of Recovery and Lessons Learned

You may need to change your attitude, receptivity and resource allocation for EMERGENCY PREPAREDNESS

- FQHCs must be in the City/County response plans and have a defined role, participating in the healthcare response
  - As our plan dictated, we responded with “care for the walking wounded and mass vaccination”
  - When disaster strikes be sure a representative from your Community Health Center (CHC) is inside the Emergency Operations Center (EOC)
    - ACCESS was present at the city/county EOC that night & throughout the week+
      - ACCESS staff received up-to-date, timely communications of the recovery and rescue efforts as well as what was going on throughout the area
      - ACCESS participated to a greater extent because we were there when city/area plans were formulated
      - Decisions were made on the fly and ACCESS’ COO was able to offer our services, storage space and staff’s commitment
Evolution of Recovery and Lessons Learned

• Coordinated through the City’s EOC, ACCESS was in the forefront of immediate response along with the local health departments in getting into the disaster zone
  – ACCESS initiated an order for 3,000 tetanus vaccines from their sources
  – The area Health Departments determined their total number of vaccine doses
  – 5,000 doses were requisitioned at the resource table through SEMA at the EOC
  • Before the EOC’s tetanus vaccine orders arrived in Joplin, ACCESS had secured their independent tetanus vaccines to supplement the health departments and proceeded to immunize going neighborhood to neighborhood
Evolution of Recovery and Lessons Learned

ACCESS was able to respond with additional clinical staff going throughout the disaster zone
Evolution of Recovery and Lessons Learned

- The Information Officer (IO) at the EOC continued to alert the public where first aid and tetanus vaccinations were available.
- ACCESS continued their assigned role to triage and treat the injured as well as rescue personnel: Volunteers flooded in from all over the country, unprepared for the task at hand: flip flops, tank tops and shorts = resulting in sunburns, dehydration, puncture wounds and abrasions.

- ACCESS administered 1,888 in the field and during clinic operations combined.
- Over 18,000 were administered throughout the community.

Despite the many injuries no cases of Tetanus occurred.
Evolution of Recovery and Lessons Learned

- Computer and Internet Access
  - Internet cables were severed and communication towers were down
  - Our support IT vendor’s building was destroyed, with only the server safe room left intact.
  - Server recovery or replacement takes time & money $$$
  - Where are your servers physically located? How many workstations or physical computers would have to be replaced
  - Backups located offsite & redundancy for EHR and finance servers are recommended
  - Backups vital information: supplier contacts, inventory & employee records, & equipment (including serial #s, make, model & date purchased)
Evolution of Recovery and Lessons Learned

• Computer and Internet Access
  – We were fortunate to have space for our server in the Joplin clinic. Within 11 hours our IT service company had our servers moved and Joplin’s EHR operational.

  Unfortunately, this eliminated the use of our community education room during this time.

  Server recovery or replacement takes time & money $$$$$

~ 6 months later, our servers were moved to an underground location in Branson.
We have SunRay technology, but how many workstations, PCs, laptops and phone (which are computerized) would have to be replaced?

• The main access to our servers resided in Joplin, the internet service was out so our other 3 clinics and administration building located counties away had no computer access for their EHR, schedules, billing & collections.
Evolution of Recovery and Lessons Learned

Communications = top priority:

- **Phones**
  - Most cell phone communications were out or sketchy at best
    - Texting was our salvation!!
  - Phone systems utilizing voice-over IP and/or web based connections versus landlines
    - Landlines @ the EOC were limited until additional lines could be set up (took several days)
    - Restricted communications out - utilizing personal phones, the fax machine (landline) and our EMERGENCY land line (maintained specifically for this reason)
    - Incoming calls overloaded the voicemail system while phones remained inoperable
    - Keep a landline(s)
    - Post floor plans that designate the landline location(s)
    - Post phone numbers of local authorities, management team, and recall roster
    - Identify your IO (Information Officer)/Spokesman - Our CEO is our IO
    - Communicate immediately - Text, email, Website, Facebook, Twitter, LinkedIn
    - Let your suppliers know if you are not able to reach your facility - ACCESS had to divert deliveries away from I-44 and the center of town across 15 miles

- **Keep communication devices charged and ready for use**
  - Walkie-talkies were used within the clinic
  - 2-way radios were the main means of communications for days between EOC & designated sites and services:
    - (Multiple frequencies assigned for clearance)
    - HAM communication set up
    - Weather radios
Evolution of Recovery and Lessons Learned

**Documentation:**
- Keep manual forms preprinted and available
  - “post-load” pertinent information into the HER for all encounters during downtime
  - Scan manual records into the EHR after everything is operational
  - Plan for overtime or utilize an outside service to load information and to scan the documents, then shred
  - Pre-print schedules several days in advance each evening
- Dental x-rays while computers are down
  - Keep a manual process (chemicals and daylight processing – (if a darkroom is unavailable) or other options
  - Allow additional time during appointments for reassessing current status of patient’s case without access to their medical or dental record
- Health records and x-rays were found as far as 70 miles away
  - As EHR utilization expands, consider scanning in old medical records and shred the paper of “before EHR"
- Printed, scanned and faxed or direct emailed records to the other clinics
  - Schedules, H&P, allergies, med lists, vaccination records
Evolution of Recovery and Lessons Learned

Financials:

• Expect temporary decrease in productivity and ultimately in cash flow
  – Keep a minimum of 60-90 days cash reserves available for operations
  – Notify vendors of potential delays in Accounts Payable
  – The longer the inability to drop claims, the larger the gap until payments received

• Check your insurance policies for adequate coverage
  – Business interruption with a waiting period of only 24 hours
  – Specific coverage payroll (paid time off) and benefits for 1 year
  – Facility and equipment replacement at current market value
  – Demolition and debris removal costs
  – Liability coverage for customers’ equipment damage or loss and injured or fatalities

• Check your service contracts
  – Check your access priority for assistance during an emergency
  – Is there a turnaround re-establishment of services standard
  – Obligations of payment during business interruptions - limitations
Evolution of Recovery and Lessons Learned

Financials:

• Inventory control:
  – Without computer access, keeping accurate records of mixed box items and unknown value was difficult
  – Have representatives from the materials management or finance department to assist inventorying arrivals and recording release of supplies
  – Keep track of “gifts-in-kind”
  – Have someone track all associated expenses

• Provide solid documentation for historical information and insurance, SEMA, FEMA claims and/or reimbursement
  – Photograph everything
  – Assign a dedicated person(s) as the recorder of events to be transcribed and take pictures as part of the CHC’s event documentation
Evolution of Recovery and Lessons Learned

• Seize opportunities:
  – ACCESS offered their large unfinished space within their Joplin clinic as a medical supply repository until SEMA could set up a warehouse. Calls coming in to the EOC for donated medical supplies were directed to ACCESS
  – ACCESS coordinated the receipt, storage and distribution of donated medical supplies.

Volunteers assist in reorganizing and set up shelving (made possible form a Operation USA grant)
Evolution of Recovery and Lessons Learned

• Seize opportunities:
  ➢ ACCESS had appropriate space available for a pharmaceutical distribution site
    • Survivors who lost their medications and/or prescriptions, whose regular doctors or pharmacies could not be found, were directed to ACCESS
    • Through our collaboration at the EOC, we were able to meet with all the pharmacy representatives and make a plan: Pharmacist, Tim Mitchell, and volunteer pharmacists, devised a plan to transfer donated medications from MSSU by the end of the week to ACCESS and established a FREE dispensary, replacing lost medicines for community members
    • Community members who lost their prescriptions and/or medications were able to receive a 30-day supply free of charge
  ➢ Medications, medical supplies and equipment continue to be received from Direct Relief and AmeriCares for the most vulnerable and those below the 200% of poverty level or uninsured – need to electronic inventory
  ➢ Let others know of your clinic’s potential capabilities
  ➢ Let others know what you need
Evolution of Recovery and Lessons Learned

• Look for grants:
  ➢ ACCESS received a grant (from Direct Relief) to purchase a used van in order to distribute donated medical supplies:
    - Supplies transported to St. John’s temporary Emergency Room @ Memorial Hall
    - Tetanus vaccines distributed to ACCESS’ roving vaccination units, County & City Health Departments and to first aid stations during Search & Rescue
    - Transported donated insulin from one site to commercial refrigerators located at ACCESS for ultimate dispensing to Joplin area diabetic patients
Evolution of Recovery and Lessons Learned

Look for Grants:

• Emergency grants became available for immediate needs, and continues to provide sustaining services into the future
  o Additional dental equipment for our portable dental services to assist care on-site to offset the loss of dental providers’ offices from AmeriCares
  o Operation US provided funding to purchase heavy duty shelves and upgrade medication inventory software for our Patient Assistance Program
  o Missouri Foundation for Health donated funds to assist ACCESS staff and our patients whose homes were destroyed or damaged for living expenses
  o Our business partners and vendors were additional resources for donated supplies and items, as several vendors donated hygiene products and surplus clinic supplies to help us administer to the community

• Handling donations
  o AmeriCares and Direct Relief donated pallets of medicines and supplies and Johnson & Johnson pallets of blankets
  o Missouri Primary Care Association (MPCA) members arrived offering assistance and supplies
  o Other MO FQHCs continued to donate supplies and money
  o HI Land Dairy loaned 2 large chest refrigerators in which to place donated insulin from the American Diabetes Association and the Alliance of the Ozarks
    – Track donated inventory with a “quick” log – for accounting and submission of insurance claims, but more importantly to assist in sending THANK YOU notes later
    – Inventory donated items upon receipt
Evolution of Recovery and Lessons Learned

• Develop Memorandums of Understanding (MOU) and Mutual Aid Agreements (MAA) in advance with community partners
  Health department(s) * Supply Vendors * Community Partners * Hospitals * IT support

• Let the community know what would improve your ability to respond to a future disaster
  – Mercy-St. John’s donated an analogue x-ray unit and Direct Relief a film processor to facilitate radiology services at ACCESS
  – ACCESS received HAM radios from another FQHC that could not

• Build your partnerships and networks before disaster strikes
  – ACCESS is now requested as a partner in other recovery and rebuilding efforts
  – We are recognized as a valuable member of the City/County emergency Preparedness/Response team with a credible and respected status

• Have a disaster plan, know it, exercise it: Participate in city/county Emergency Preparedness meetings and drills
  – ACCESS has been invited to assist in community–wide drills
  – Our role is recognized by the area hospitals
  – Healthcare entities notify us of upcoming training and webinar availability
  – Our role is recognized by the 2 Emergency Preparedness collaborative groups we participate in to cover region D
Evolution of Recovery and Lessons Learned

• Insure that staff carry their work identification and proof of professional licensure
  – Don’t leave your home without these, even when off duty
• Update phone rosters with personal cell/text information
  – Keep a printed copies at the clinic and available at home
• Get medical & dental licensed professionals registered with “Show Me Response” – state registry of volunteer Healthcare Professionals
  – Credential verification process for clinical volunteers is completed in advance, facilitating personnel readiness for immediate dispatch during a declared emergency
  – Expediency of deployment made possible through advance registration
• Support the expansion of utilization of the EMSystem for FQHCs
• DRILL ‘til you FAIL
Joplin Rebuilds

• Joplin’s tornado ranks as one of Missouri’s and America’s deadliest and also the costliest single tornado in US history.
• The cost to rebuild Joplin surpassed over $3 Billion!
• It required collaboration of federal, state and local resources!
Joplin Rebuilds
Joplin Rebuilds

Approximately 500 FEMA trailers have been delivered to Joplin and neighboring communities, fewer than 200 now adequate 10 X 24 foot storm shelters

Joplin High School located to vacant Space at Northpark Mall

Storm Shelters at Joplin High School on the Mall’s parking lot
Joplin Rebuilds

- Extreme Home Makeover: completed construction of 7 homes in 7 days

- Habitat for Humanity: initiated 10 homes constructed in 16 days, then returned with a commitment to build a total of 65
Rebuilding Joplin: the Spirit of America
Rebuilding Joplin: the Spirit of America

July 2012: **80%** of those destroyed employers have reopened

Fastest Wal-Mart built in history

The store is built from recycled bricks from the original store
Mercy-St. John’s transformations as they Rebuild

SEMA Mobile Units erected 6 days after the tornado

Trailer Units replaced the tents

Newest component hospital opened April 11, 2011

Demolition of damaged 9 story structure
Volunteers from Everywhere Came to Help Joplin Recover and Rebuild
Beauty out of tragedy

Reaching to the sky in hopes of a better tomorrow for Joplin
Include your FQHC in your disaster plan!
Thank you for your time  

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Marsha Dolan 
Professor 
Missouri Western State University
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