

In Unity there is Strength

Multi-Agency Response in the Rural Trauma Setting

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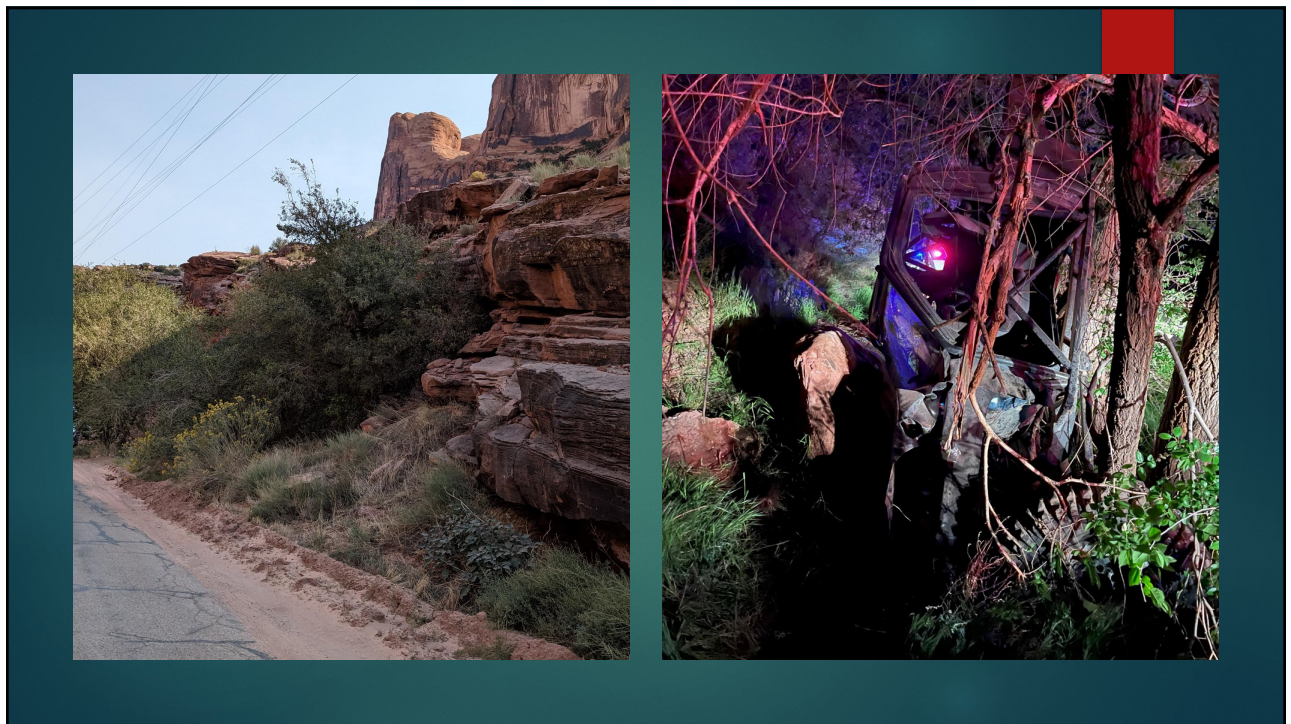
OHV Accident 5/1/2023

- ▶ COUPLE FROM CANADA VISITING MOAB INVOLVED IN A SINGLE VEHICLE ACCIDENT AROUND 2030.
- ▶ OHV DROVE OFF THE MOAB RIM TRAIL, FALLING 60 FEET AND LANDING IN A TREE. THE OHV WAS STUCK IN THE TREE AND LEAKING FUEL.
- ▶ BOTH OCCUPANTS WERE UNRESTRAINED AND UNHELMETED. BOTH WERE EJECTED FROM THE VEHICLE TO THE GROUND NEAR KANE SPRINGS ROAD.
- ▶ BYSTANDERS CALLED 911, REPORTING THE CRASH AND THAT BOTH OCCUPANTS WERE UNCONSCIOUS.

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OHV Accident - Field

26 year old female passenger

- ▶ First responders were GCSO and Moab PD. Reported patient initially unconscious then moaning.
- ▶ GCEMS arrived 4.5 minutes after dispatch.
- ▶ ABC intact. GCS 11 w/o focal deficits
- ▶ 118/73, 94, 21, 94%
- ▶ C collar, extrication board, O2, 2 IV
- ▶ 3 min 10 sec scene time
- ▶ 7 min 20 sec transport to MRH, LE driving

32 year old male driver

- ▶ First responders were GCSO and Moab PD. Reported patient awake and c/o chest pain and SOB
- ▶ GCEMS arrived 5.5 minutes after dispatch
- ▶ A and C intact. GCS 15 w/o focal deficits. B – shallow/labored breathing, tachypneic and absent R breath sounds
- ▶ 112/64, 113, 30, 82%
- ▶ O2, R needle decompression, 2 IV, C collar
- ▶ 24 min 30 sec scene time
- ▶ 4 min transport time

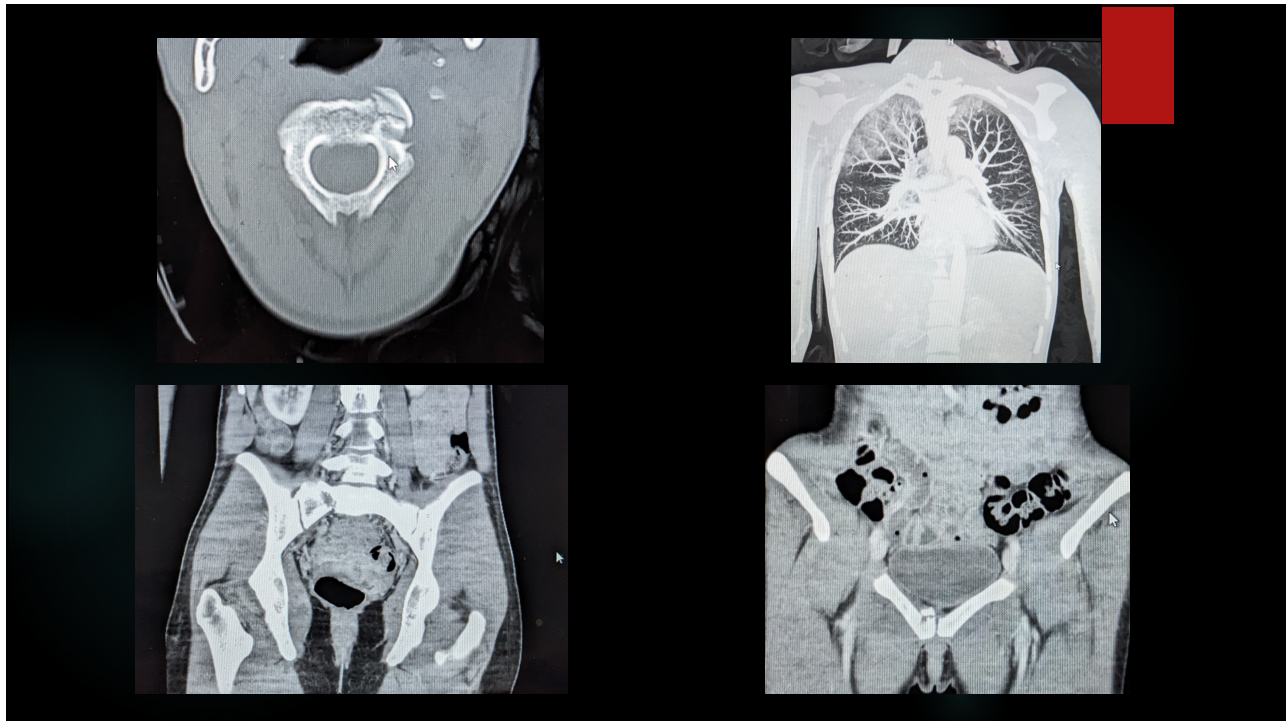
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OHV Accident – Hospital (Trauma 1)

26 year old female

- ▶ ABC intact. GCS 13 improving to 14
- ▶ Secondary survey: R shin and index finger lacerations
- ▶ WBC 15K, Hbg 13, K 3.4, LA 2.4, AST 53, UA occult blood, Tox screen + THC
- ▶ LR 700cc, Aspen collar, Foley, pain meds
- ▶ CT Head: small SAH
- ▶ CT C spine: C2 body fracture
- ▶ CT Chest: bilat pulmonary contusion, small R apical PTX, L5 TP fxr, S1 fxr
- ▶ CT A/P: R acetabular fracture, R pubic body and inf pubic rami fxr

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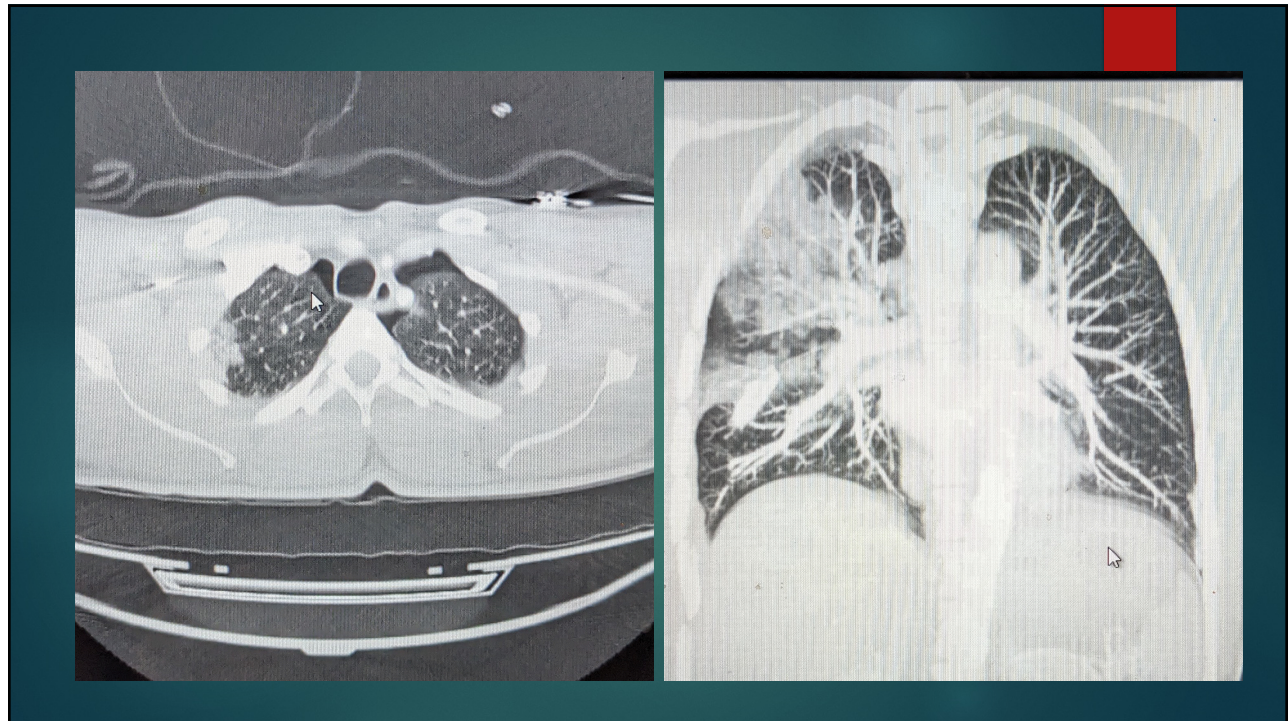
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OHV Accident – Hospital (Trauma 1)

32 year old male

- ▶ AC intact. GCS 14 improving to 15.
- ▶ B – tachypnea (RR 30s), labored breathing, acc. muscle use, R chest deformity, sats 80-85%
- ▶ Secondary survey: scalp hematoma, R clavicle pain and swelling, R arm adducted ? shoulder dislocation
- ▶ WBC 32.6K, K 3.4, Cr 1.5, AST 274, ALT 352
- ▶ Emergent 28 Fr R CT, C collar, R arm sling, foley, pain meds
- ▶ CT Head: scalp hematoma, poss. SAH vs artifact
- ▶ CT C spine: negative
- ▶ CT Chest: Bilat PTX with R CT in place, R hemoTX, B pulmonary contusions, R clavicle fxr, R ant 5-10 and lat 6-10 rib fxr
- ▶ CT A/P: Grade 3 liver lac and hemoperitoneum

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OHV Accident - Hospital

26 year old female

- ▶ Arrived 2055
- ▶ DTT 25 minutes after arrival
- ▶ No ICU beds at SMH
- ▶ Accepted at U of UT
- ▶ Classic Air Medical requested
- ▶ Departed ED 85 minutes from arrival

32 year old male

- ▶ Arrived 2120
- ▶ DTT 5 minutes after arrival
- ▶ No ICU beds at SMH
- ▶ Accepted and U of UT
- ▶ Second Classic heli requested
- ▶ Departed ED 3 hr 7 min from arrival

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OHV Accident – U of UT D/C diagnoses

26 year old female (LOS 4 days)

- ▶ SAH – NS consult. Stable on F/U scan
- ▶ L V2V3 BCVI: NS consult, no deficits, daily baby ASA
- ▶ Pelvic fxr: ortho trauma consult. ORIF
- ▶ Lumbar TP fxr: ortho spine consult. No Rx
- ▶ C2 fracture: ortho spine consult. Aspen collar x 2 weeks
- ▶ Bilat pulm contusion: asx. No Rx

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OHV Accident – U of UT D/C diagnoses

32 year old male (LOS 4 days)

- ▶ Rib fxr (flail) 5-12: pain Rx and pulm toilet
- ▶ Bilat PTX and right HTX: R CT removed day 3. No L CT needed
- ▶ Grade 2 liver lac: stable. No PRBC needed
- ▶ R clavicle fxr: ortho consult. Sling
- ▶ T7 endplate fxr: ortho spine consult. No Rx
- ▶ L frontal SAH, R SAH/SDH: NS consult. Stable on F/U scan

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Agencies Involved

- **GRAND COUNTY SHERIFF'S OFFICE** – FIRST RESPONDERS/SCENE SAFETY
- **MOAB PD** – FIRST RESPONDERS/SCENE SAFETY AND DROVE AMBULANCE TO MRH
- **GRAND COUNTY EMS** – PATIENT CARE
- **MOAB REGIONAL HOSPITAL** – PATIENT CARE
- **CLASSIC AIR MEDICAL** – PATIENT CARE AND TRANSPORT
- IN OTHER SITUATIONS MAY NEED: GRAND COUNTY SAR, GRAND VALLEY FD, DPS, NPS, BLM, SAN JUAN COUNTY OR GREEN RIVER EMS

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Moab Regional Hospital



- 17 BED CAH
- 2 OR
- NO ICU
- 13 BED ED
 - 1 physician +/- 1 NP/PA (in house 24/7)
- 1 SURGEON (15 DAYS/MONTH CALL COVERAGE)
- 1 ORTHO (10-15 DAYS/MONTH CALL COVERAGE)
- LIMITED BLOOD BANK: 6U O-, 4U O+, 4U A+, 6U FFP, NO PLATELETS OR CRYO

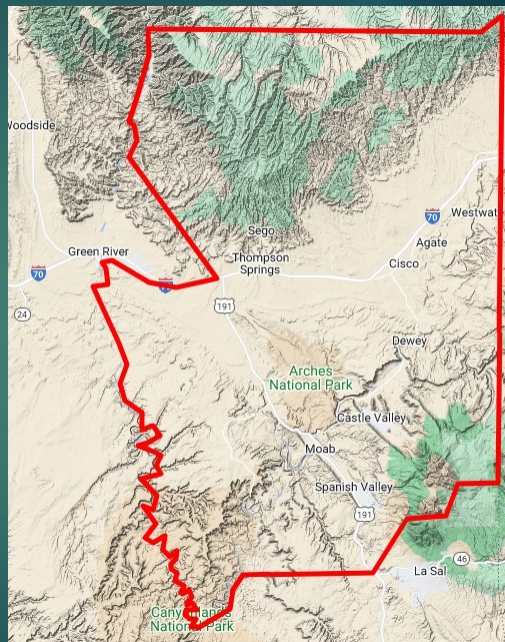
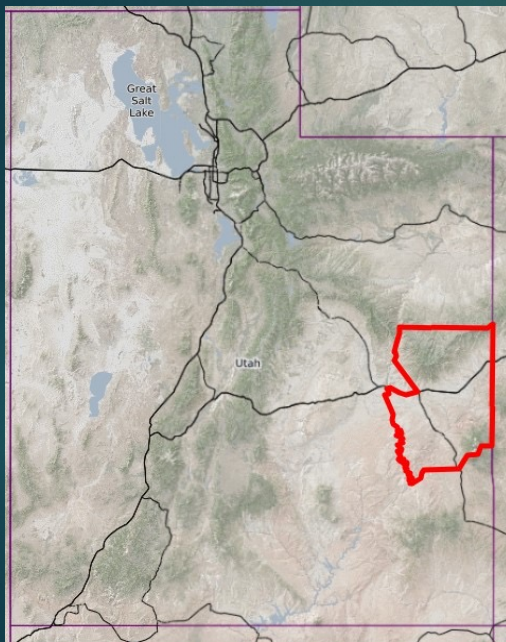
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Grand County EMS



- ▶ EMT/Paramedics: 36
- ▶ 5 ambulances
- ▶ Staffing: 24/7 - 2 ambulances and a captain. Paramedic admin staff utilized as needed
- ▶ Coverage area: 4080 square miles – larger than RI and DE combined
- ▶ 1700 calls annually: 40% trauma
- ▶ Dirt bike hasty responders, technical rope and mountain rescue, swiftwater training

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Grand County EMS



Strengths and Challenges

- ▶ Limited local hiring pool
- ▶ High cost of living in Moab
- ▶ Giant response area
- ▶ Long calls (IFTs, response area)
- ▶ Expanded scope: prehospital antibiotics, field reductions, expanded meds
- ▶ Strong CCP capability (vent transports and pumps)
- ▶ Strong interagency relationships
- ▶ Nerd power! Passionate providers who are engaged and interested in continual training

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Grand County SAR



- ▶ Part of Grand County Sheriff's Office
- ▶ 35 members
- ▶ 120 calls annually
- ▶ 6 OHV
- ▶ River Unit - 3 boats
- ▶ Technical Rope Rescue Unit
- ▶ Separate Winter Rescue Team – 2 snowmobiles
- ▶ Drone with FLIR

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Grand County SAR



Strengths and Challenges

- ▶ 4,000'-12,726' elevation coverage, 3,700 square mile area coverage, Colorado and Green Rivers and La Sal mountains
- ▶ Volunteer based and unknown responder availability at any given time
- ▶ Comms in remote coverage areas
- ▶ Many experts in their respective fields
- ▶ Outdoor rec hub that attracts fit, active responders
- ▶ Strong interagency relationships

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Classic Air Medical



- ▶ Moab crew
 - ▶ 5 certified flight nurses
 - ▶ 5 flight certified paramedics
 - ▶ 4 highly skilled pilots
 - ▶ 2 mechanics
- ▶ One Bell 407 helicopter
- ▶ Crews typically do 96-hour shifts
- ▶ Average 30 flights/month
- ▶ Typical transport is to St. Mary's Hospital in Grand Junction. Other common receiving facilities in Utah and Salt Lake counties
- ▶ Bases that help service Moab
 - ▶ Richfield, Cortez, Vernal, Montrose

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Classic Air Medical



Strengths and Challenges

- ▶ Weather extremes: heat and helicopter weight limitations, snow and clouds in winter
- ▶ When fixed wing is required, airport is 18 miles from the hospital
- ▶ Quick response times to areas around Moab that would take hours by ground
- ▶ Highly motivated teams
- ▶ Moab has very diverse call volumes compared to other bases

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Challenges of Multi- Agency Response

- ▶ INCIDENT COMMAND – WHO'S IN CHARGE OR WHO'S IN CHARGE OF WHAT
 - ▶ Location/jurisdiction
 - ▶ Best fit for the problem
 - ▶ First on scene then transfer of command

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Challenges of Multi-Agency Response

- ▶ DIFFERENT DISPATCH – MOAB VS PRICE VS EMERY COUNTY
 - ▶ Lack of IT connections between dispatches
 - ▶ Info sharing can be stunted
- ▶ COMMUNICATIONS
 - ▶ EMS, LE, SAR, NPS all have different channels – no practical common channel
 - ▶ All have 700/800 mHz except NPS who has only VHF – need patching channels
 - ▶ Radios are line of site – often require radio relays
 - ▶ Cell phone coverage poor
 - ▶ Satellite can be limited and/or false positive auto-notifications

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Challenges of Multi-Agency Response

- DISTANCE TO HLOC
 - SMH: 1.5 hour ground and 30 minutes heli
 - SLC: 3.5-4 hours ground, 90 minutes heli
 - Where is incident starting (backcountry)
 - SAR stages at EOC, gathers gear and team, gets to patient then helps with extraction
- GETTING ACCEPTING FACILITY
 - Communications with transfer line
 - On diversion

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Challenges of Multi-Agency Response

- WEATHER RESTRICTIONS
 - EMS: Soldier Summit in winter
 - Rotor: all weather and VFR only
 - Moab, Cortez, Rifle, Vernal
 - Fixed wing: some weather
 - Page, Pagosa, Grand Junction
- RESOURCES
 - DPS hoist ship comes from St. George (2.5 hours)
 - DPS and IHC hoist ships in SLC – rarely available

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In the midst of chaos,
there is also opportunity.

Sun Tzu

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Left
Hand
Litter
Carryout

GCEMS
and SAR

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Willow
Springs
Road
Rollover
in Arches

GCEMS
and NPS

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Bow and Arrow Canyon Rappelling Accidents

GCEMS,
SAR and
BLM



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DPS Hoist Ship

Burro Pass MTB
accident and
Long Canyon
climbing
accident



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River Road
Manhunt with
Accident

GCSO, Grand Valley FD
and GCEMS

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Kane Springs Base
Jump Accident

SAR, GCEMS and Classic

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Sand Flats MTB Injury

GCEMS, GC SAR and Classic



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SAR, GCEMS, Classic, BLM, Grand Valley FD, UT Dept. Outdoor Recreation and Forest Service

Swiftwater and Avalanche Training

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Thank you!

Come play with us in Moab... you will have a great time and we will take good care of you!

