STICKS, STRAPS & SOLUTIONS



MEDICAL KITS & IMPROVISING IN THE WILDERNESS

Lauren Snyder, DO FACEP FAWM

OVERVIEW

- Background
- Improvisation
- Medical Kits



- Emergency Medicine Residency,
  Baystate Medical Center (Springfield, MA)

- Wilderness Medicine Fellowship,
  Baystate Medical Center (Springfield, MA)

- Fellow of the Academy of Wilderness Medicine (FAWM), Wilderness Medical Society




Emergency
EMERGENCY ENTRANCE
Multnomah County EMS
Paramedic Unit
AMR
American Medical Response
AMBULANCE
WE'RE ALL IN
THIS TOGETHER

Medical care outside of an office or hospital

WILDERNESS MEDICINE

- Limited access to definitive care
- Remote areas, airplanes, foreign countries
- Natural disasters
- Challenging environments & terrain
- Limited transportation



IMPROVISE !



“MACGYVERISM”

OHSU

An ingeniously clever, improvised, and makeshift solution to a problem using only common items or whatever materials happen to be nearby

CPD

WE ALREADY DO THIS!

- Ultrasound/lubrication gel for dried blood
- String technique for stuck rings
- Speculum for draining peritonsillar abscess
- Mineral oil/colace to soften ear wax
- Tea bag for dental bleeding
- Oppositional hair technique for scalp lacerations
- Nebulized coffee for odor control
- Plastic bottle cap for AV fistula hemostasis

IMPROVISATION IDEAS

- <u>Splinting/immobilization:</u>
  - Safety pin long sleeves
  - Jacket or bandana sling
  - Sticks, hiking poles and wrap/strap/duct tape
  - Hydration bladder, inflatable sleeping pad
- <u>Litter or carry</u>
  - Backpack for kids
  - Hiking poles, skis, sticks for improvised litter/sled
- <u>Wound care:</u>
  - Duct tape, glue
  - Tourniquet, bandana/windlass
- <u>Hypothermia & shelter</u>
  - Clothing, sleeping bags, tarps/sleeping pads
- <u>Water collection:</u>
  - Jackets/tarps for rainwater
  - Clothing/fabric as makeshift filter

OHSU CPD

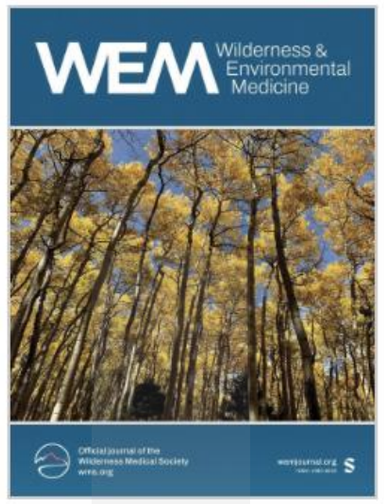
IMPROVISED EXAMPLES











Volume 30, Issue 1, March 2019

Wilderness Medical Society

Free access | Case report | First published online March 1, 2019

Improvised Hydration Bladder Air Splint: A Wilderness Case Report

Hans F. Hurt, MD ✉, and Aaron J. Reilly, DO View all authors and affiliations

Volume 30, Issue 1 | https://doi.org/10.1016/j.wem.2018.10.008

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Abstract

This case report describes the use of a hydration bladder as an improvised air splint for a left forearm fracture in an austere environment. The literature regarding the use of air splints in the prehospital and wilderness environments is scarce, and it does not appear that this technique has been previously described in the literature. Given the widespread use of hydration bladders, the adjustable nature and overall comfort of the splint, and the anecdotal success of this technique without any complications or harm to the patient, the authors believe this is an important improvised splinting option to add to the quiver of any outdoor enthusiast or wilderness medical professional.

HURT HF, REILLY AJ. IMPROVISED HYDRATION BLADDER AIR SPLINT: A WILDERNESS CASE REPORT. WILDERNESS & ENVIRONMENTAL MEDICINE. 2019;30(1):86-89. DOI:10.1016/J.WEM.2018.10.008

- 38 yo F fell while mountain biking, on mile 5 of 10 mi loop outside Moab, UT
- Injured left wrist, with obvious deformity



- Group was out for a day ride, only had basic first aid equipment
- One of the group members was an EM doc, and had taken additional training in WM





MED KITS: WHERE TO START?





CAN’T I JUST BUY ONE ONLINE?



Amazon.com
Amazon.com: 330 Piec…



Fire Supply Depot · In stock
EMT Style First Responder …



Chinook Medical Gear · In stock
Minimalist Kit | Chinook Me…



Amazon.com
Compact First Aid Kit (228pcs) Desi…



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Trauma Kit | Trauma Medical Kit | Field ...



Sheba Medical Center
First Aid Kit: What to Put in it and ...



Alaska Safety · In stock
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Spartan Armor Systems
Advanced Individual …



IBX Insights
First Aid Kit



nytimes
The 3 Best First Aid Kits for Hiking ...



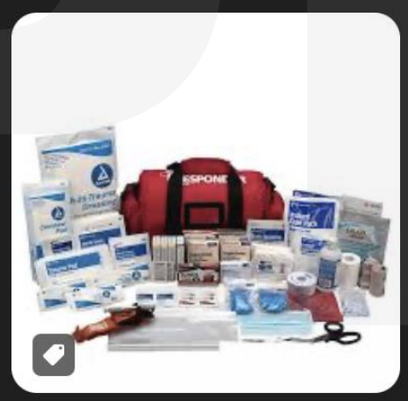
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1 – BANDAGE, CONFORMING GAUZE, STERILE, 2"
2 – STERILE GAUZE DRESSING, 2" X 2"
2 – STERILE GAUZE DRESSING, 3" X 3"
3 – SAFETY PIN
1 – SPLINTER/TICK REMOVER FORCEPS
2 – PAIN RELIEVER/FEVER REDUCER (ASPIRIN 325 MG)
2 – ANTIHISTAMINE (DIPHENHYDRAMINE 25 MG)
2 – PAIN RELIEVER/FEVER REDUCER (IBUPROFEN 200 MG)
2 – PAIN RELIEVER/FEVER REDUCER (ACETAMINOPHEN 500 MG)
3 – TRIPLE ANTIBIOTIC, SINGLE USE
2 – TINCTURE OF BENZOIN

GENERAL CONSIDERATIONS

- You can’t bring everything with you
- Be thoughtful
- Consider multi-use items/medications
- Know your activity, group, environment
- Background & knowledge: medical personnel vs non-medical personnel pack differently

OHSU CPD

MED KIT CONTAINERS

- Protect your equipment/medications but be organized and accessible
- Size: are you stationary or carrying with you?
- Type: hard case, nylon/cloth, waterproof

OHSU CPD





MED KIT CONTAINERS







PAWS GUIDELINE

OHSU

- P: prevention/procedure
- A: analgesics, antibiotics, antiseptics, anaphylaxis
- W: wound care, weather
- S: survival gear

CPD

P: PREVENTION

- Disinfecting soap/gel
- Infection prophylaxis (antimalarials)
- Insect repellant/netting
- Purification tablets/water filter/water treatment
- Sunglasses/hat/sunscreen

OHSU
CPD

P: PROCEDURES

OHSU

- Needles, scissors, needle drivers, suture
- Skin glue, steri-strips
- Tweezers
- pulse Ox?

CPD

A: ANALGESICS, ANTIBIOTICS, ANTISEPTICS

- Analgesics: acetaminophen, NSAIDs, opiates?, lidocaine?
- Antibiotics: consider multi-use
  - doxy: lung, skin, tick/mosquito borne
  - levo: enteric, lung, skin, urinary
  - amox-clav: skin, lung, HEENT
  - azithro: HEENT, lungs skin, enteric

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W: WOUND CARE

- Make sure your kit has enough for your trip, many commercial kits are limited (ie: 3 bandages)
  - Bandages, steri-strips, antibiotic ointment
  - Tourniquet, hemostatic gauze?
- Blisters are common: mole skin, blister bandages, whatever works for YOU!
- Duct tape
  - Can be used for gear, but also wound closure and possibly blister care

OHSU CPD

S: SURVIVAL GEAR

- Matches/lighter/fire starter
- Multi-tool/knife
- Map/GPS
- Signal/communication devices
- Water collection/treatment
- Weather protection (clothing/shelter)
- Extra food/snacks

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MY APPROACH:

- Oh bummer (common problems)
  - Wound care/blisters: bandages (regular and blister specific), antibiotic ointment, maybe suture or lidocaine
  - Sprains/strains: ACE wrap, SAM splint, pain medications
  - Exposure: sunscreen, chapstick/vaseline (fire starter!!)
- Oh *#?$!! (serious/dangerous problems)
  - Hemorrhage: tourniquet, hemostatic gauze, ACE/coban for pressure dressing
  - Anaphylaxis/serious allergic reaction: epi-pen, +/- steroids, albuterol inhaler
  - Communication: cell/satellite phone

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WHAT I DON'T CARRY

- Airway/cric equipment
- Pulse ox (most of the time)
- AED

SO WHAT'S IN MY MED KIT…




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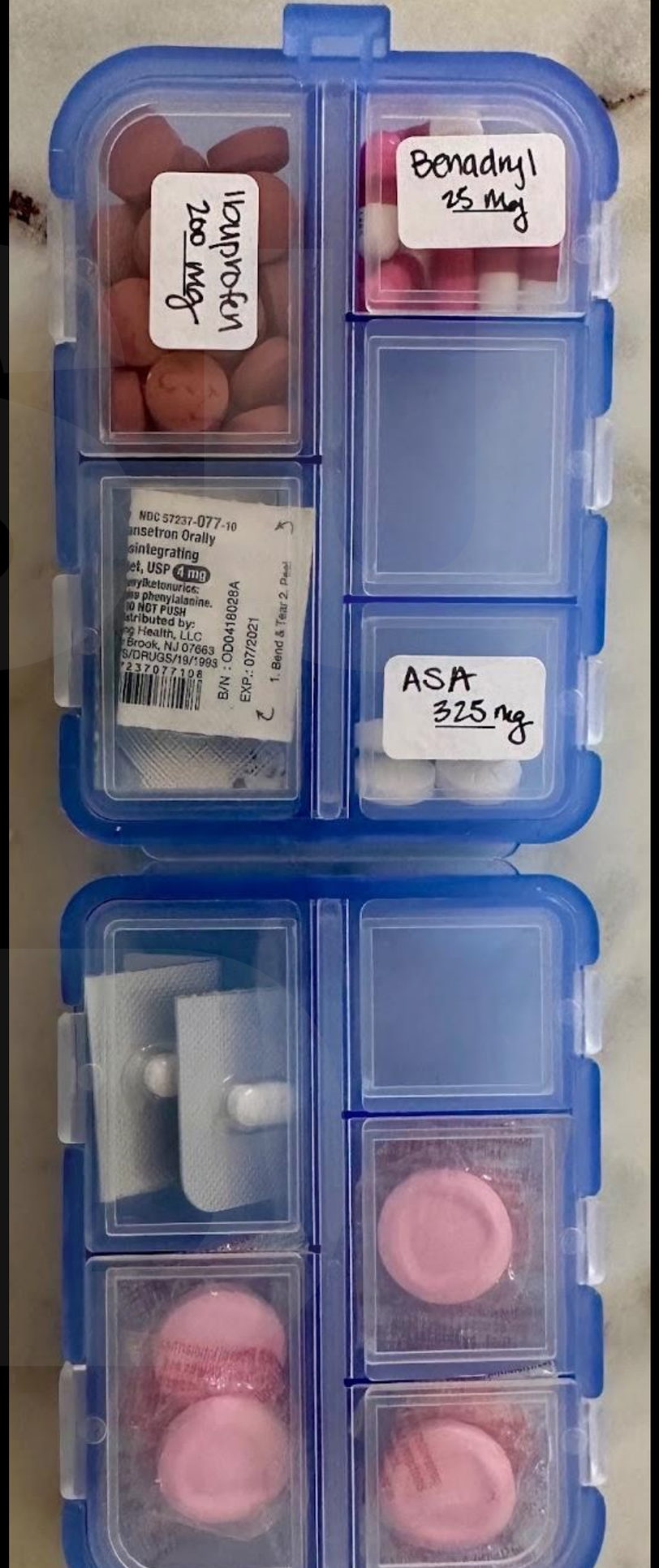

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Blister bandages



MEDICATIONS

- Ibuprofen, Tylenol
- Zofran, Imodium, Pepto-bismul, Tums
- Benadryl, zyrtec
- Trip dependent:
  - Antibiotics: doxy, keflex, azithro
  - Altitude: diamox, dexamethasone
  - Diving: flonase, decongestants
  - Antimalarials
  - Dogs (meds from the vet from over the years): trazodone, NSAIDs

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THANK YOU!

SNYDELAU@OHSU.EDU