Taking an Occupational Medicine Approach to Reduce Recidivism

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Disclosure and Disclaimer

Option 1: “I do not have any relevant financial relationships with any commercial interests.”

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Educational Objectives

- Understand why occupational medicine questions are relevant in the correctional medicine field
  - Consider recidivism data
- Discuss the logistical processes that are common in the occupational medicine setting
  - Specifically listing limitations & durations
  - AMA guides for impairment
- Discuss common areas of clinical concern in occupational medicine
  - Orthopedic complaints (examples low back pain and hip pain)
  - Dermatologic complaints (example contact dermatitis)

What does recidivism look like now?

- 2/3 of those released from prison will return within 5 years
- “Recently released prisoners have low educational attainment; high rates of poverty, unemployment, and homelessness; and high risk of poor health outcomes, including death, upon release.”
- “80% of released individuals have chronic medical, psychiatric, or substance abuse problems, yet **only 15% to 25% report visiting a physician outside of the emergency department (ED) in the first year post release.”**

https://ajph.aphapublications.org/doi/10.2105/AJPH.2012.300894

We have the “nerve to act surprised”

Incarcerated	**Free**
Access to Primary and Preventive care	No PCP, scattered ER visits
Access to Addiction care	Access to recreational drugs
Access to Psychiatric care	Long wait list, if on one at all
Likely to have a job	Likely to be job hunting

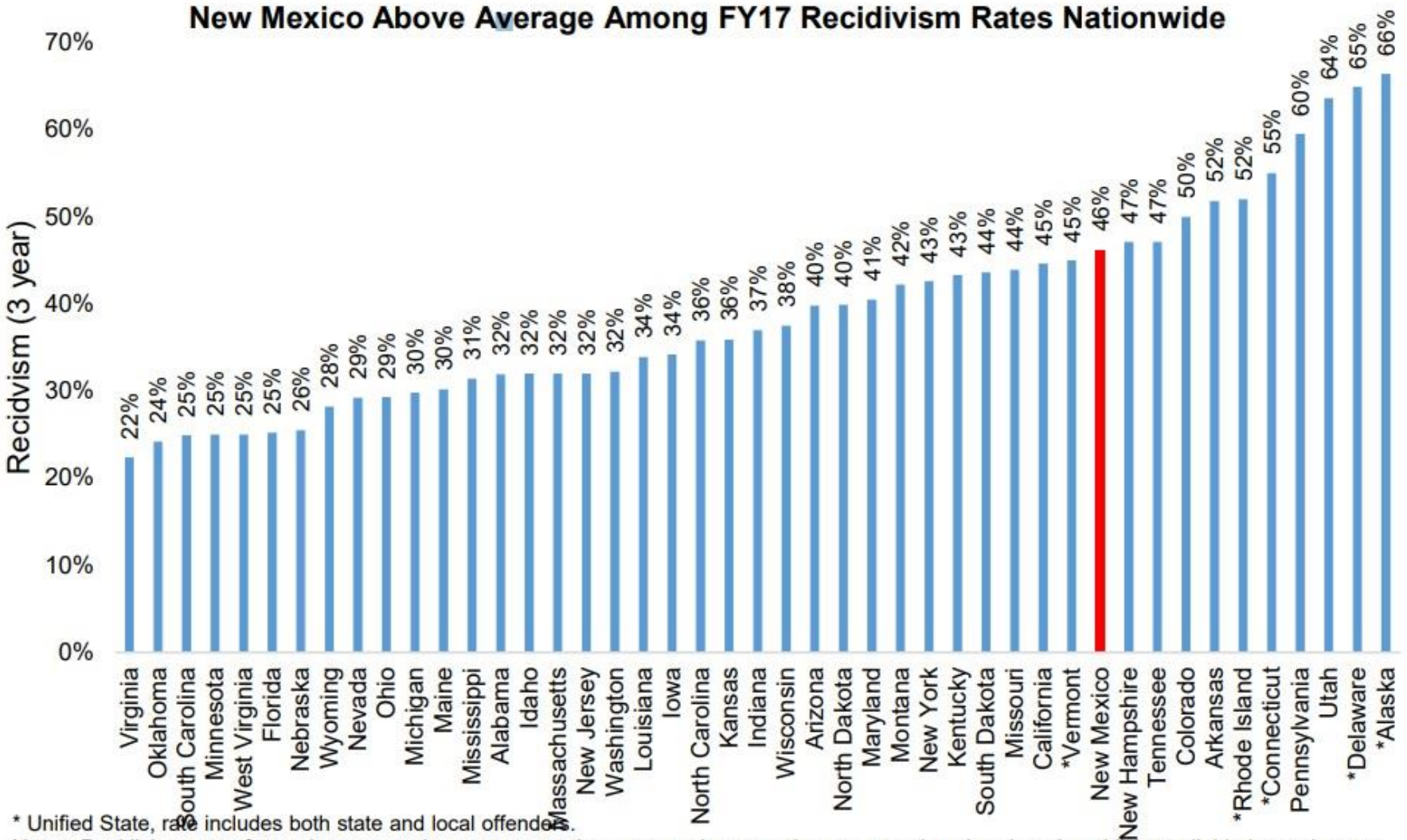
US DOJ Federal Bureau of Prisons

- "Evidence-based Recidivism Reduction (EBRR) Programs and Productive Activities (PA)
- "The BOP assesses inmates for criminogenic needs and other needs that are associated with an increased risk of recidivism in the following areas: Anger/Hostility; Antisocial Peers; Cognitions; Dyslexia; Education; Family/Parenting; Finance; Poverty; Medical; Mental Health; Recreation/Leisure/Fitness; Substance Abuse; Trauma; and **Work**."
- 71 total programs listed, and ten of them are labeled as at least in part addressing the "work" need

https://www.bop.gov/inmates/fsa/docs/evidence_based_recidivism_reduction_programs.pdf

Appendix C: Recidivism Rates

https://www.nmlegis.gov/Entity/LFC/Documents/Program_Evaluation_Reports/Corrections%20Department%20-%20Status%20of%20Programs%20to%20Reduce%20Recidivism%20and%20Oversight%20of%20Medical%20Services.pdf



* Unified State, rate includes both state and local offenders.

Notes: Recidivism rates for each state are the most recent three-year re-incarceration rates produced and made publicly available by each state (as of September, 2017).Cautions should be taking in making state to state comparisons because of varying recidvism definitions, differences in states' correctional populations resulting frmo variations in sentencing practices, and differences in organizational structure in states' systems.

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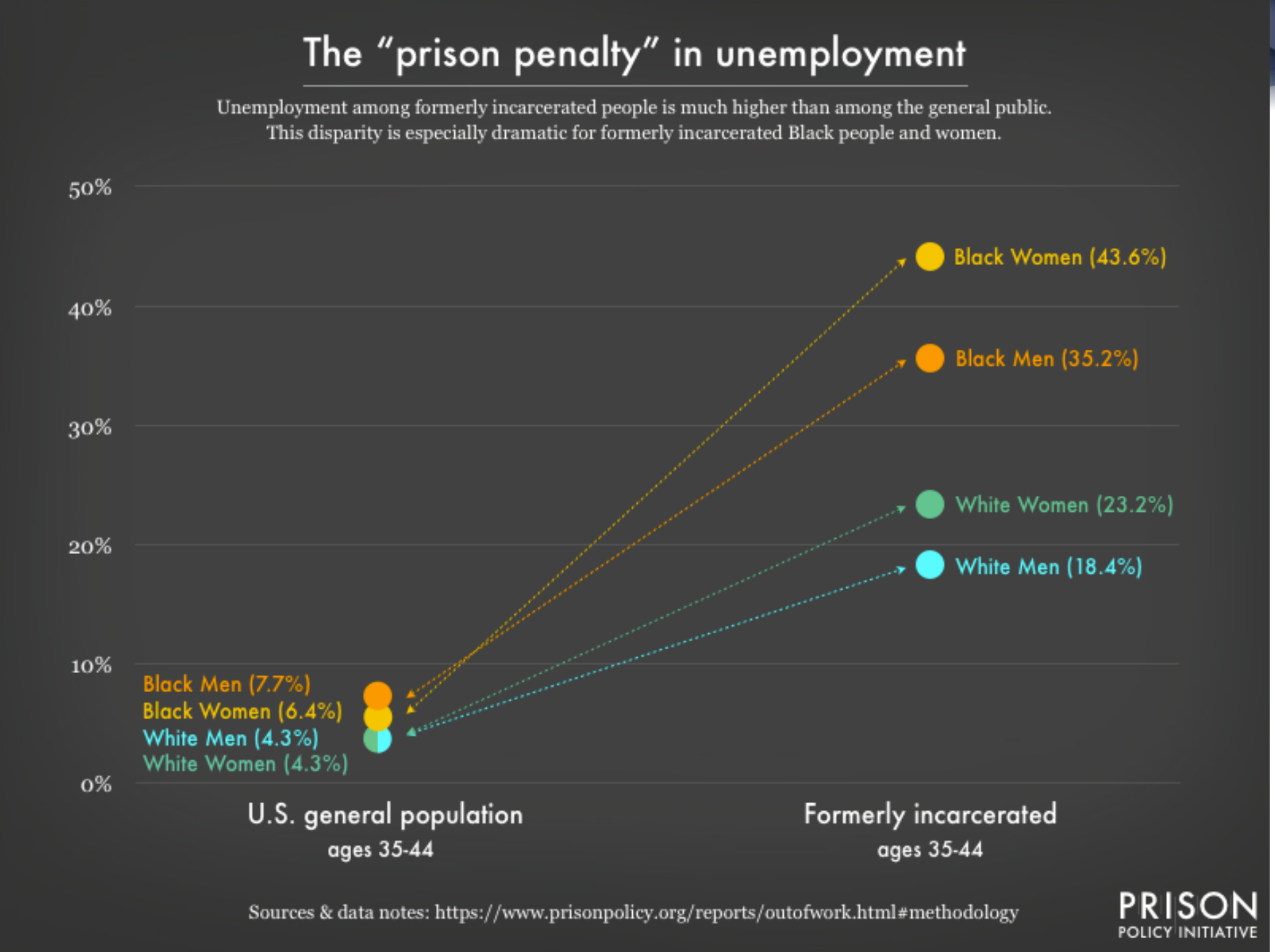

"Formerly incarcerated people want to work. Their high unemployment rate reflects public will, policy, and practice — not differences in aspirations."

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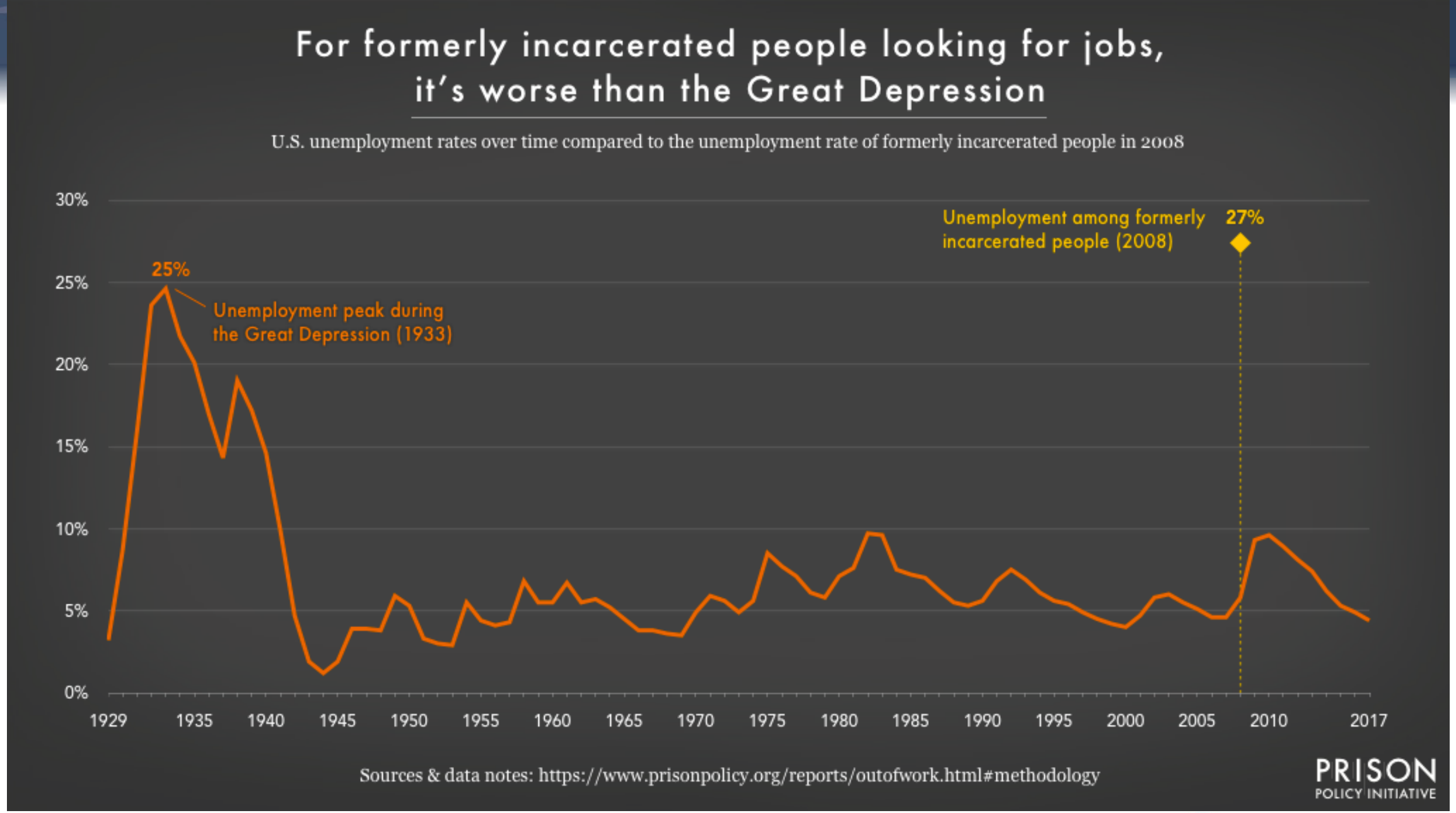

Over 600,000 people attempt to transition from prisons to the community each year.

Save up before you leave?

Wages	Regular jobs		Corrections Industries	
	Low	High	Low	High
Wyoming	0.35	1.00	0.50	1.20
Federal Prisons	0.12	0.40	0.23	1.15
Average	0.14	0.63	0.33	1.41

https://www.prisonpolicy.org/reports/wage_policies.html

Are patients spending money on co-pays?

States that do not charge copays	States that suspended all copays for incarcerated people in response to the pandemic	States that suspended all copays for respiratory, flu-related, or COVID-19 symptoms	States that rolled back previous suspensions and now charge medical copays on non-COVID-19 related symptoms	Governments that rolled back previous suspensions and now charge all medical copays	States that suspended some or all copays in response to the pandemic, but it is unclear if those suspensions are still in place	States did not suspend copays in response to the COVID-19 pandemic
California	Connecticut	Alaska	Idaho	Alabama	Arkansas	Nevada
Illinois	Massachusetts	Colorado		Federal Bureau of Prisons	Arizona	
Missouri	New Jersey	Delaware		Minnesota	Georgia	
Montana	Rhode Island	Florida		Texas	Kansas	
Nebraska	West Virginia	Hawaii			Kentucky	
New Mexico		Indiana			Louisiana	
Oregon		Iowa			Maine	
Vermont		Michigan			Maryland	
Virginia		New Hampshire			Michigan	
Wyoming		North Carolina			Mississippi	
		North Dakota			Ohio	
		Pennsylvania			Oklahoma	
		South Carolina			South Dakota	
		Utah			Tennessee	
		Wisconsin			Washington	

https://www.prisonpolicy.org/virus/index.html

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Wyo. Stat. § 27-14 Wyoming Worker's Compensation Act

Wyo. Stat. § 27-14-102 Definitions:

(a)(vii) "**Employee**" means any person engaged in any extrahazardous employment under any appointment, contract of hire or apprenticeship, express or implied, oral or written, and includes legally employed minors, aliens authorized to work by the United States department of justice, office of citizenship and immigration services, and aliens whom the employer reasonably believes, at the date of hire and the date of injury based upon documentation in the employer's possession, to be authorized to work by the United States department of justice, office of citizenship and immigration services. "**Employee" does not include**:

Wyo. Stat. § 27-14-102

Wyo. Stat. § 27-14-102 Definitions:

"Employee" does not include:

(a)(vii)(M) **Any adult or juvenile prisoner** or probationer **unless covered pursuant to**

W.S. 27-14-108(d)(ix);

(ix) All adult and juvenile prisoners and probationers **when performing work pursuant to law or court order**;

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Wyo. Stat. § 27-35-105

27-3-105. "Employment" defined; employment for state, and other organizations; exceptions.

Subsection (a) of this section does not include service performed:
(xii) **By an inmate** of a state custodial or penal institution;

Wyo. Stat. § 27-4-413

27-4-413. Inapplicability and exemptions.

The provisions of W.S. 27-4-401 through 27-4-413, are not applicable where in conflict with federal statutes, rules or regulations relating to prevailing wage determinations. **All work and labor performed by prisoners, patients and other inmates of state penal, correctional and charitable institutions and city or county jails, are exempt from the provisions of this act**. All work and labor performed by workmen regularly employed by the public body are exempt from the provisions of W.S. 27-4-401 through 27-4-413 if the cost of construction does not exceed twenty-five thousand dollars ($25,000.00).

Wyo. Stat. § 27-14-401

27-14-401. Medical, hospital and ambulance expenses; review of claim; employer and division designated providers; contracts for bill review, case management and related programs; air ambulance reimbursement.

(h) In the case of an inmate employed in a correctional industries program authorized by W.S. 25-13-101 through 25-13-107 or performing services pursuant to W.S. 7-16-202, **the department of corrections shall select the health care provider for the inmate**.

Wyo. Stat. § 27-14-404(f)

Temporary total disability; benefits; determination of eligibility; **exceptions for volunteers or prisoners**; period of certification limited; temporary light duty employment.

(f) Any individual serving time in any penal or correctional institution who is an employee under this act or any probationer or parolee not covered by a qualifying employer employee relationship performing work pursuant to court order **is not eligible for benefits under this section for injuries suffered during the period of incarceration, probation or parole**. Upon release from the penal or correctional institution or upon completion of probation or parole, any remaining benefits for which the individual would otherwise qualify for under this section shall be paid from and after the date of release or completion. In addition, any individual classified as a school to work participant under this act is not eligible for benefits under this section for injuries suffered during the participation in a school to work program activity.

Wyoming Worker's Compensation Summary

- "Employee" does not include a prisoner or probationer except "when performing work pursuant to law or court order" and all incarcerated persons are ordered to obtain a job (there is a refusal process too). Thus the exception to the exception swallows the rule.

- DOC will select the healthcare provider for worker's comp inquiries

- Not eligible for temporary total disability for injuries suffered while working for DOC while incarcerated, but eligibility changes upon release

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Career Training

- Welding
- Plumbing
- Electrician training

WY Brand Industries

- Aquaculture (WWC)
- Braille Transcription (WMCI)
- Garment Shops (WMCI, WSP, WWC)
- Print Shop (WSP)
- Data Entry (WWC)
- Laundry Services (WWC)
- Road Signs & License Plates

Wyoming is Uniquely Positioned

- Workers Compensation claims may follow patients into and out of prison.
- Workers Compensation claims may be initiated in prison (and follow patients out of prison)
- No copays are charged for acute visits, workers comp visits, or chronic care visits.
- DOC promotes job opportunities for incarcerated patients and offers training programs in many fields (welding, ranching, brail)
- We could do a better job preparing patients for their prison discharge

What could we do better?

- Plan out employment in more detail
  - In what industry? Exactly which employer?
  - If employment is unrealistic, then **assistance with a disability application**?
- Plan out continuity of care in more detail
  - Private insurance?
  - Medicare?
  - Medicaid?
  - Specific programs
    - Ryan White HIV program? Nursing home setting? (Already arranged often)
    - "**Enhanced Primary Care**" / "Transitions Clinic" / DPC-like program

Wisconsin DOES Project 2011

- “Legal Action’s Disabled Offenders Economic Support (DOES) Project builds upon a successful Prisoners’ Disability Advocacy (PDA) Project previously piloted by Legal Action and utilizes a number of procedures and partnerships pioneered by Legal Action, the state Department of Corrections, the Social Security Administration, and the Disability Determination Bureau during the pilot program.”
- DOC staff and SSI/SSDI staff in Wisconsin
- Rehab psychologist performed exams and assessments
- Academic legal assistance

Pawasarat, John and Quinn, Lois M., "First Year Evaluation of the Legal Action of Wisconsin Disabled Offenders Economic Security (DOES) Project Conducted for the Wisconsin Department of Corrections" (2012). ETI Publications. 181. https://dc.uwm.edu/eti_pubs/181

Wisconsin DOES Project 2011

"When they are released from prison, many offenders do not receive the public benefits to which they are entitled **either because they simply do not apply, they do not apply correctly, or their benefits are wrongly denied.** This benefits gap is quite extensive and often includes **SSI**, **Medicaid**, **SSDI**, **veteran's benefits**, **food stamps**, **Medicare**, energy assistance benefits, employment training and placement services, subsidized housing, and community-based medical and mental healthcare. The gap creates a huge additional risk that these newly released offenders will become homeless and will re-offend."

Pawasarat, John and Quinn, Lois M., "First Year Evaluation of the Legal Action of Wisconsin Disabled Offenders Economic Security (DOES) Project Conducted for the Wisconsin Department of Corrections" (2012). ETI Publications. 181. https://dc.uwm.edu/eti_pubs/181

Wisconsin DOES Project 2011

"The Department supervises offenders with multiple and complex needs. Released inmates face a multitude of obstacles upon returning to their communities including joblessness, substance abuse, mental health problems, and a disconnect from community and family. Statistics on a national level show that **two out of three inmates are re-arrested for new crimes within three years of their release and more than half are re-incarcerated. The risk of recidivism is highest the year after release and even higher for those with serious mental and medical health issues**."

Pawasarat, John and Quinn, Lois M., "First Year Evaluation of the Legal Action of Wisconsin Disabled Offenders Economic Security (DOES) Project Conducted for the Wisconsin Department of Corrections" (2012). ETI Publications. 181. https://dc.uwm.edu/eti_pubs/181

Wisconsin DOES Project 2011

- “As noted, the DOES Project achieved a very high overall **approval rate** (56%) for inmate clients submitting **initial SSI/SSDI applications** where decisions were made by the SSA and DDB in the first year of the project. This rate is about **four times higher than the national approval rates** (10-15%) for homeless populations, including prisoners.”

Pawasarat, John and Quinn, Lois M., "First Year Evaluation of the Legal Action of Wisconsin Disabled Offenders Economic Security (DOES) Project Conducted for the Wisconsin Department of Corrections" (2012). ETI Publications. 181. https://dc.uwm.edu/eti_pubs/181

BMJ Study – Released from Prison to New Haven

- "We examined whether **enhanced primary care** can decrease future contact with the criminal justice system among individuals just released from prison."
- 94 participants and 94 controls
  - The propensity score included 23 variables, which encompassed participants' medical and incarceration history and service utilization
  - The main outcomes were reincarceration rates and days incarcerated in the first year from the index date, which was either enrolment in the **Transitions Clinic** program or release from prison in the control group.
- They did not really define enhanced primary care…

https://bmjopen.bmj.com/content/bmjopen/9/5/e028097.full.pdf Wang EA, et al. BMJ Open 2019;9:e028097. doi:10.1136/bmjopen-2018-028097

BMJ Study – Released from Prison to New Haven

- Results: "The odds of reincarceration, including arrests and new convictions, were similar for the two groups, but **Transitions Clinic participants had lower odds of returning to prison for a parole or probation technical violation (adjusted OR: 0.38; 95% CI 0.16 to 0.93) compared with the control group.** Further, Transitions Clinic participants had fewer incarceration days (incidence rate ratio: 0.55; 95% CI 0.35 to 0.84) compared with the control group."
- Conclusions: "**Enhanced primary care for individuals just released from prison can reduce reincarceration for technical violations and shorten time spent within correctional facilities**. This study shows how community health systems may play a role in current strategies to reduce prison populations."

https://bmjopen.bmj.com/content/bmjopen/9/5/e028097.full.pdf Wang EA, et al. BMJ Open 2019;9:e028097. doi:10.1136/bmjopen-2018-028097

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BMJ Study – Released from Prison to New Haven

Discussion – “We found that participants of an enhanced primary care-based program for individuals just released from prison spent **45% fewer days incarcerated in a correctional facility in the 12 months following release** compared with the matched comparison group that was not enrolled in such a program.”

https://bmjopen.bmj.com/content/bmjopen/9/5/e028097.full.pdf Wang EA, et al. BMJ Open 2019;9:e028097. doi:10.1136/bmjopen-2018-028097

BMJ Study – Released from Prison to New Haven

"TCN programs may reduce the length of stay in a correctional facility in several ways. One possibility is that the TCN program **connects participants to inpatient and outpatient substance use treatment programs**, thus leading to decreased number of days incarcerated through an alternative sentence. Also, TCN patients, **having received treatment for mental health, substance use and physical health conditions while in the community, may be less disruptive once reincarcerated or have developed a social support network, such that they are able to make bail sooner and be released**. Future research should explore the mechanisms by which participation in the TCN program is associated with decreased time reincarcerated."

https://bmjopen.bmj.com/content/bmjopen/9/5/e028097.full.pdf Wang EA, et al. BMJ Open 2019;9:e028097. doi:10.1136/bmjopen-2018-028097

BMJ Study – Released from Prison to New Haven

"We did not find any differences between arrest rates and new conviction rates. The TCN program serves individuals who have already been incarcerated and who have had sizeable interactions with the criminal justice system previously. **Reducing arrests or imprisonments may be more difficult to achieve for a primary care program that is focused on patient health and wellbeing and not just engagement with the criminal justice system.** We did find, however, that individuals who participated in the TCN program returned to DOC less for parole or probation violations compared with those in the matched comparison group."

https://bmjopen.bmj.com/content/bmjopen/9/5/e028097.full.pdf Wang EA, et al. BMJ Open 2019;9:e028097. doi:10.1136/bmjopen-2018-028097

BMJ Study – Released from Prison to New Haven

"A surprising finding is that the TCN program **did not have an impact on reducing preventable ED utilization**. In a past study using randomized design in San Francisco, we found that individuals who were randomly assigned to the TCN program in San Francisco had almost 50% fewer all-cause ED visits compared with the group that was randomized to get expedited primary care in a safety-net primary care clinic. One explanation may be that the majority in the matched comparison group were still seen in primary care and thus did not have more ED visits or visits for preventable conditions."

https://bmjopen.bmj.com/content/bmjopen/9/5/e028097.full.pdf Wang EA, et al. BMJ Open 2019;9:e028097. doi:10.1136/bmjopen-2018-028097

BMJ Study – Released from Prison to New Haven

"Notably, among those who were hospitalized, individuals in the TCN program did have **fewer numbers of hospitalizations for conditions that are preventable** with engagement in primary care, compared with those in the matched comparator group. One possible reason is that TCN community health workers provide significant support around medication management and adherence, chronic disease self-management, and helping patients address their housing, food insecurity and employment needs, which may reduce hospitalizations. Other studies of community health workers have found similar effects on hospital readmissions. Also, we found that participants of the TCN program had almost **60% shorter lengths of hospital stay compared with the control group**. TCN teams coordinated with inpatient teams to ensure smooth discharges to home and close primary care follow-up, which may account for shorter time hospitalized."

https://bmjopen.bmj.com/content/bmjopen/9/5/e028097.full.pdf Wang EA, et al. BMJ Open 2019;9:e028097. doi:10.1136/bmjopen-2018-028097

Occupational Medicine Pointers

- Familiarize yourself with your state's version of the AMA "Guides to the Evaluation of Permanent Impairment" (Usually version 3, 4, 5, or 6)
- Offer narrowly tailored restrictions
- Offer specific advice and timelines
- Remind patients to file their paperwork in a timely manner
- Allow open cases to proceed with minimal interruption

Common Occupational Medicine Clinical Complaints

- The most common categories:

- **Dermatologic**
- **Musculoskeletal**
- Neurologic
- Pulmonary

Dermatologic Complaints

- "Work-related skin diseases account for approximately **50 percent of occupational illnesses** and are responsible for an estimated 25 percent of all lost workdays."
- "Industries in which workers are at highest risk include manufacturing, **food production**, construction, machine tool operation, **printing**, **metal plating**, **leather work**, engine service, and **forestry**."
- Ask about heat, chemicals, gloves

Contact Dermatitis

- Look for vesicular lesions on the hands in a glove-like pattern
- Treat by avoiding repeat exposure (this might mean a job change)
- Acute vesicles often do not respond to topical triamcinolone and may require systemic steroids. (Topical steroids are more helpful once vesicles have resolved.)
- Avoid topical antihistamines, but topical doxepin could help.
- Other systemic options include doxepin, diphenhydramine, and hydroxyzine.

ABLE 1

Common Occupational Exposures and Associated Skin Diseases

xposure	*Workers at risk*	*Skin diseases*
hemicals	All workers	Irritant contact dermatitis, allergic contact dermatitis
brasions, friction "burns," pressure injuries, lacerations	Construction, lumber, steel, and masonry workers	Keloids, postinflammatory pigmentary changes; can cause spread of lesions in workers with lichen planus and psoriasis (Koebner's phenomenon)
unlight	Outdoor workers, including telephone-line workers, sailors, postal workers, landscapers, and construction workers (e.g., roofers)	Actinic keratosis, carcinoma (basal cell, squamous cell), melanoma, sunburn, photoallergic dermatitis, melanosis; worsens preexisting discoid and systemic lupus erythematosus, granuloma annulare, porphyria, rosacea, etc.
eat	Foundry workers (e.g., metal casting), outdoor workers	Miliaria ("prickly heat"), folliculitis, tinea pedis
old	Sailors, fishermen, other outdoor workers	Raynaud's disease, urticaria, xerosis, frostbite
loisture	Food handlers, chefs, bartenders, dishwashers, hairdressers	Irritant contact dermatitis, paronychia
hus genus (e.g., poison oak, poison ivy)	Outdoor workers, including surveyors, firefighters, park and highway maintenance workers, utility-line workers, and farm workers	Allergic contact dermatitis, contact urticaria
ectricity	Electricians, telephone workers, construction workers	Burns, skin necrosis
berglass spicules	Insulation workers, workers in the manufacture of fishing poles and boat hulls	Irritant contact dermatitis, erythema; less commonly, erosion, urticaria
nizing radiation*	Medical personnel, welders (i.e., radiographs of welds), workers in the nuclear energy industry	Skin cancer, acute or chronic radiation dermatitis, alopecia, nail damage (destroys matrix)

—Uncommon risk in the United States because most persons who work with ionizing radiation are closely supersed; exposure is more likely in developing countries.

formation from references 2 and 3.

Am Fam Physician.
2002 Sep 15;66(6):1025-1033.

https://www.aafp.org/afp/2002/0915/p1025.html

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TABLE 2

Selected Occupational Exposures and Protective Measures

Exposure	*Protective measures*
Dust, fiberglass spicules, irritating solids (e.g., cement)	Clothing made of tightly woven material, preapplication of mild dusting powder, leather gloves with smooth finish, steel-tipped shoes
Liquids, vapors, fumes	Face shields, plastic or synthetic rubber* gloves and aprons, adequate ventilation
Moderate alkalis, solvents	Synthetic rubber,* neoprene plastic, or hypoallergenic gloves with replaceable soft cotton liners
Trauma	Leather gloves with smooth finish, steel-tipped shoes
Sunlight, ultraviolet light	Sunscreen, protective clothing (hat, long-sleeved shirt or jacket)

*—*Natural rubber deteriorates.*

Information from references 2 and 3.

Am Fam Physician. 2002 Sep 15;66 (6):1025-1033.

https://www.aafp.org/afp/2002/0915/p1025.html

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Orthopedic complaints

- **Low Back Pain**
- Carpal Tunnel Syndrome
- Knee Pain
- Shoulder Pain
- **Hip Pain (if time allows)**

Low Back Pain – Is it my discs?

- Probably – The L4-L5 and L5-S1 discs account for 90% of back pain
- 60-80% of adults over age 30 are affected at some point
- 85% of patients with acute low back pain improve with time alone
  - One or two days of bed rest may help
  - Three days or more of bed rest will prolong recovery
  - 40% of patients are better in one week, 60% 3 weeks, 85% 2 months
  - Recovery may take 3-6 months AVOID NARCOTICS!!!
- Physical therapy should be started when acute pain fades
- Surgical Efficacy is unclear for:
  - Low back pain
  - Lumbar Disc Herniations
  - Spinal Stenosis

Low Back Pain – Is it Cancer?

- Unlikely, metastatic lesions are the most common bony lesion.
- Multiple Myeloma is the most common primary lesion
- Metastasis from breast, lung, renal, prostate, and thyroid are common

- This is an area where your physical exam can be the most helpful. Firm palpation of the spinous processes to elicit an focal tenderness should make you think harder about a metastatic lesion.

Low Back Pain Without Radiculopathy

- Muscle Strain
- Facet joint arthritis
- Degenerative disc disease

- Physical exam findings are often unhelpful here
  - ROM may or may not be decreased due to pain
  - Muscle firmness and tenderness can be due to spasm
  - Flank pain might lead you to do a renal workup

- If age < 10, think infection, leukemia, or scoliosis

Low Back Pain WITH Radiculopathy

- Radiates below the knees (not merely to the buttock or thighs)
- Loss of Sensation
- Abnormal reflexes
- Motor weakness (is it from pain or impingement?)

Lower Extremity Neurologic Exam

- L2-3 – No reflex, innervates quads, sensation of anterior thigh, note strength with leg raising
- L4 – tibialis anterior (stand on heels, inverts the ankle), patellar reflex, sensation over medial foot
- L5 – Extensor hallucis longus (lifts the great toe), no reflex (medial hamstring is difficult to assess), sensation over the dorsum of the foot
- S1 – Peroneus longus and brevis (stand on your toes and inside of the foot), Achilles reflex, sensation over the lateral portion of the foot
- S2-4 – Anal wink reflex, would affect sphincter tone if involved

Low Back Pain Physical Exam Techniques

- Straight Leg Test
  - Passive lifting of affected leg to an angle less than 60 degrees causes pain
  - Seated active or seated passive or lying passive
  - Pain radiates distal to the knee (85% sensitive & 52% specific)
- Crossed Straight Leg Test
  - Passive lifting of the unaffected leg reproduces pain in opposite leg
  - This is more specific for disk disease
- Slump Test
  - Slump forward with chin to chest, extend knee & ankle, then look up
  - If looking up relieves pain this is a sign of nerve root impingement
- Trendelenburg Test

Disc Herniation

- It can resolve over time without surgery
- Nerve root compression can be due to inflammation
- The disk material compressing the canal can be resorbed
- Perform a straight leg raise test

Spinal Stenosis

- It can occur in the neural foramina, central canal, or both
- Typically older patients with arthritic changes (osteophytes)
- Found in 1/3 of patients over age 60 (most are asymptomatic)
- The patient will complain of pain that radiates from the buttocks to the legs and becomes worse with standing or walking (this is called neurogenic claudication) (with vascular claudication the pain will usually start distally and radiate proximally)
- They will tend to lean onto the shopping cart. They might ride a bike.
- Reflexes may become brisker (especially with canal stenosis of the cervical or thoracic spine). Straight leg raise is less useful.

What about Spondylosis?

- This is a more likely problem for patients in their late teens and 20s
- Symptomatic at 25% slippage or greater
- Secondary to recurrent lumbar hyperextension (football, gymnastics)

Surgical Options

- Disc Herniation – laminectomy or diskectomy
- Foraminal Spinal Stenosis – Lumbar decompression surgery
  - Data for this intervention are stronger than for any other surgery
- Arthritis – Fusion or Disk Replacement
  - Fusions tend to fail at adjacent segments and require more fusions over time

Low Back Pain Medication Options

- NSAIDs (try may types)
  - Start with ibuprofen 400mg PO TID
  - 800mg dose rarely warranted
  - Consider naproxen, diclofenac, meloxicam
- Acetaminophen (usually ineffective)
- Duloxetine
- Nortriptyline
- Muscle relaxants (such as tizanidine, cyclobenzaprine) (briefly)
- Prednisone (briefly)
- Gabapentin (only small decrease in pain – risk of dizziness/fatigue)

Low Back Pain – Keep Moving

- OMT
- Home exercises
- Physical Therapy
- Epidural steroid injection relief tends to be short-lived

Could it be my Rheumatoid Arthritis?

- NEVER in the lumbar spine
- RA can often cause pain in the cervical spine

- Other autoimmune syndromes can involve the low back
  - Ankylosing Spondylitis
  - Inflammatory Osteoarthritis

Should I get a “back belt?”

- No – the data is generally equivocal or negative

What low back pain red flags warrant imaging?

- Rapidly progressive neurologic changes
  - (esp incontinence, saddle anesthesia)
- Gait disturbances
- Night pain
- Loss of ambulation
- Chronic steroids
- Fever

- MRI is an effective way to spot an epidural abscess, hematoma, or spinal neoplasm
- Consider imaging if pain persists more than six weeks. Radiographic findings often correlate poorly with low back symptoms.

Patient Attitudes Matter for Low Back Pain

- These patient attitudes increase the chance of acute pain becoming chronic:

- Fear and Avoidance of activity
- Eeyore Syndrome (consider duloxetine!)
- Prefer passive rather than active treatments
- Belief that they are disabled by pain

Sources of “Hip” Pain

- Hip Arthritis
  - Cartilage lacks nerve endings, but bone has nerve supply & senses pain
- Trochanteric Bursitis
  - Swelling and distension causes pain
- Referred Hip Pain (from the low back)
- Avascular Necrosis
- Femoral acetabular impingement (FAI) and labral tears

3 Most Common Causes – Relevant History

- Hip Arthritis:

- Do you have trouble putting on your socks and shoes due to pain or stiffness?
- Do you have groin pain?

- Trochanteric Bursitis:

- Can you sleep on the affected side of the hip pain? (typically no)
- Do you prefer to sleep with the affected side up and a pillow between your legs? (typically yes)
- Does your IT band sometimes make a clunking or popping sound as it rotates over the trochanter?

- Referred Hip Pain (from the low back):

- Do you have low back pain as well?
- Does any of your pain radiate? (the further it radiates, the greater the chance that it is of low back etiology)

Less common cause #1: Avascular Necrosis

- Do you have any history of chronic prednisone use?
- Do you have any history or chronic alcohol use?
- Do you have any history of sickle cell disease?
- Do you have any history of Gaucher disease?

- Also think about trauma – especially dislocation & relocation

Less Common Cause #2 Femoralacetabular impingement (FAI) and labral tears

- Patients with FAI are often young and physically active (dancing, gymnastics, skating).
- They describe insidious onset of pain that is worse with sitting, rising from a seat, getting in or out of a car or leaning forward (sometimes there is no clear history of trauma).
- The pain is located **primarily in the groin** with occasional radiation to the lateral hip and anterior thigh.
- About one-half of labral tear patients with this injury also have mechanical symptoms, such as catching or **painful clicking** with activity.

Hip Physical Exam

- No coxa saltans observed (clunk IT band)
- Patient must point with one finger to maximal tenderness area
- Comment on the patient's gait
- Don't forget to exam the lumbar spine and do neurologic exams including sensory and DTR testing of lower extremities when indicated.
- IT band issues can cause knee pain as well, and knee issues can cause gait adjustments that result in secondary hip pain
- Special Tests: 1) Windshield Wiper, 2) FABER, 3) FADIR

Hip Pain Point it Out

- Where does the pain originate?
- Anterior hip and groin pain is commonly associated with intra-articular pathology, such as osteoarthritis and hip labral tears.
- Posterior hip pain is associated with piriformis syndrome, sacroiliac joint dysfunction, lumbar radiculopathy, and less commonly ischiofemoral impingement and vascular claudication.
- Lateral hip pain occurs with greater trochanteric pain syndrome.

Windshield Wiper Test

- The Windshield Wiper Test, can be done in 8 seconds.
- Seat your patient with their hip flexed to 90 degrees and knee flexed to 90 degrees (this is the default position for most patients on an exam table)
- Then, rotate the femur internally and externally by moving the calf like a windshield wiper.
- Compare to contralateral side for **pain** and **range of motion**. This test is very sensitive for inflammation within the hip joint/capsule.
- Usually positive for patients with hip arthritis (or AVN) but negative for trochanteric bursitis patients

FABER (Patrick) test (96% sensitive for FAI)

- While the patient is lying on their back, the hip is flexed, abducted to the side, and externally rotated into a “figure of four” position.
- If positive, think Sacroiliac joint or intra-articular pathology (depending on localization of pain)

FADIR test (88% sensitive for FAI)

- While the patient is lying on their back, the hip is flexed, adducted toward midline, and internally rotated
- Pain suggests intra-articular pathology

Trendelenburg & Modified Trendelenburg

- Trendelenburg test
- Patient stands and balances on one foot for 30 seconds
- Inability to maintain pelvis stability parallel to the ground suggests pelvic instability (stance leg)

- Modified Trendelenburg test (single leg stance phase).
- The patient stands with feet shoulder width apart and lifts one leg. The examiner observes for a drop in the level of the iliac crest on the side of the lifted leg. A 2-cm drop in the level of the iliac crest, indicating weakness on the contralateral side

What Labs Might be helpful?

- Baseline Labs:
- None unless septic arthritis is suspected (fever, elderly, RA +DM hx) – then ESR, CRP, CBC

- Trended Labs:
- Cr (if taking NSAIDs routinely)

What Radiologic Testing is Useful?

- **Plain AP Pelvis X-Ray** (is suspecting hip arthritis – it also provides a limited lumbar spine view)
- Some also order a frog-leg X-Ray view of the symptomatic hip
- **No imaging needed if trochanteric bursitis is suspected**

- Magnetic resonance imaging (MRI) should be performed if the history and plain radiograph results are not diagnostic. **MRI** is valuable for the detection of occult traumatic fractures, stress fractures, and **osteonecrosis (AVN)** of the femoral head. **Magnetic resonance(MRA) arthrography** is the diagnostic test of choice for **labral tears**.

Diagnostic Injections?

- If Lumbar spine and hip etiologies are both possible, intra-articular injections can be used diagnostically (under fluoroscopic guidance)

How Should I Code Hip Pain? M25.50

- A vague code like M25.50 is helpful as you work up and treat early hip pain because it cannot be wrong.
- Change over to more specific codes (if you feel so inclined) once you have a specific source (such as)
- Hip arthritis, Greater Trochanteric Bursitis, Radicular pain from the lumbar spine
- Avascular necrosis or femoroacetabular impingement (and secondary labral tears) are less common

Treatment for Trochanteric Bursitis

- IT band home exercise stretches (supine crossover stretch and the standing wall stretch), 1min, 10x/day x 4 wks
- OMT can be done as well
- Kenalog injections are helpful
- Surgery is not recommended here because it can cause scar tissue in the IT band

What about NSAIDs?

- Minimize NSAID usage. Some patients may respond better to one kind of NSAID than another. Options include:

- Ibuprofen 400mg PO TID prn
- Naproxen 250mg PO BID prn
- Meloxicam 7.5mg PO BID prn
- Diclofenac 50mg PO BID prn
- Celecoxib 100mg PO BID prn

Remember to go over chronic NSAID risks:

- GI toxicity: Dyspepsia, Gastroduodenal ulcers, GI bleeding
- CV adverse effects: Edema, Hypertension, Congestive heart failure, Myocardial infarction, Stroke
- Nephrotoxicity: Electrolyte imbalance, Sodium retention, Edema, Reduce glomerular filtration rate, Nephrotic syndrome, Acute interstitial nephritis, Renal papillary necrosis, Chronic kidney disease

What if it is AVN?

- Then 1/3 of patients will have the disease run its course (6-12 weeks) without femoral head collapse and without intervention.
- Core decompression is a surgical procedure option that will allow 2/3 of patients to avoid femoral head collapse (improve your odds).
- Once collapse has occurred then hip replacement is the best solution.

What if it is FAI or a Labral Tear?

- In most office settings this becomes a diagnosis of exclusion.
- If a patient has hip pain, especially groin pain, no trochanteric bursitis, and **the windshield wiper test reproduces their pain but plain films show no significant arthritis, one should consider AVN or FAI**.

Referring a Hip Pain concern to Orthopedic Surgery

- Should NOT be necessary for trochanteric bursitis
- May be needed for diagnostic fluoroscopic injections in the hip or lumbar spine (these can be done by PM&R too)
- May be done to assess whether joint replacement or other surgical intervention is recommended (preferably after appropriate imaging was ordered – either X-ray, MRI, or MRA)
- Try to delay any joint replacement until the patient is at least 50 years old, preferably older than 60 years.

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