Public health beyond outbreaks

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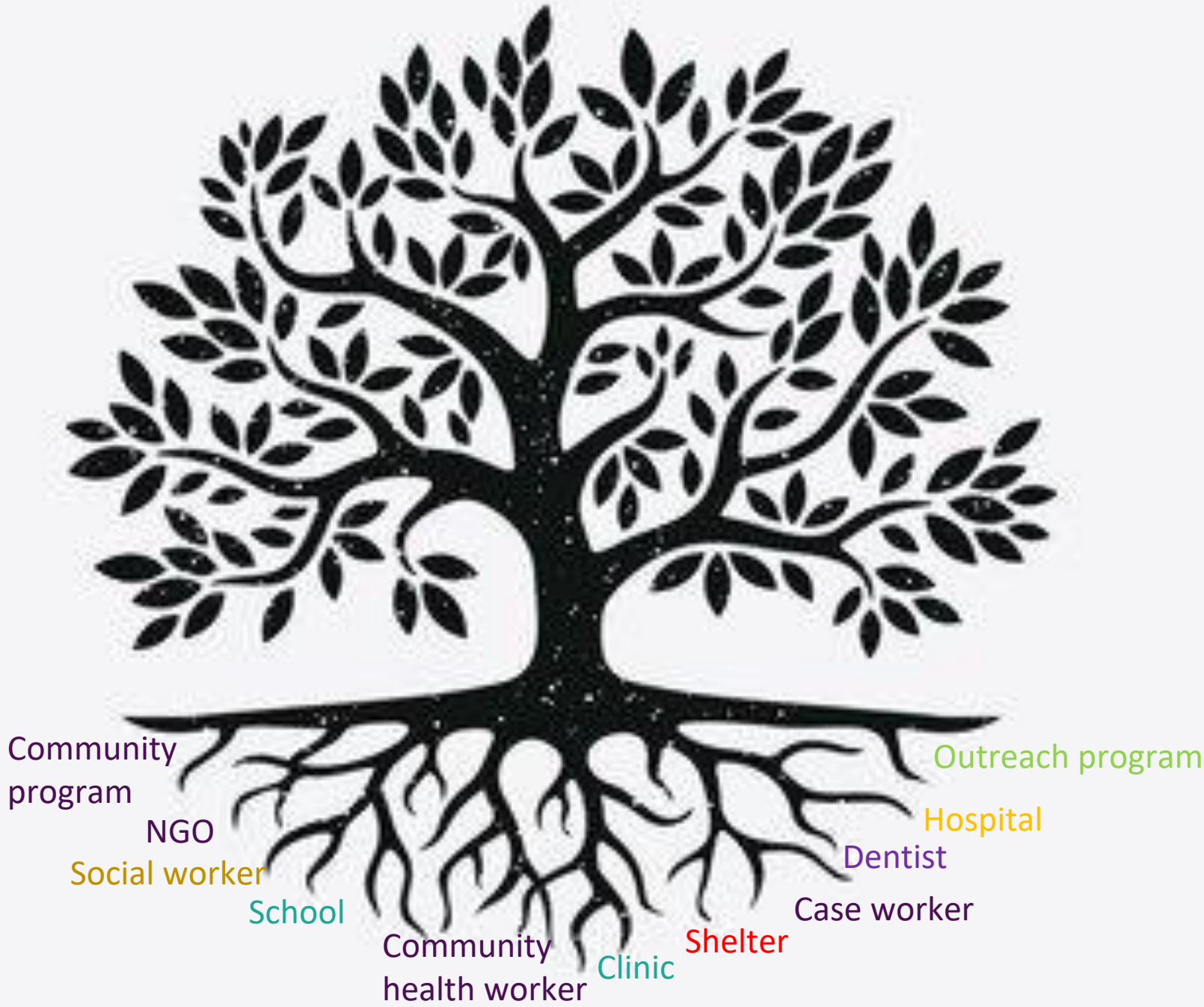
Overview

Partnering public health and healthcare

Patient safety

- Falls
- Surgical site infections

Public health and healthcare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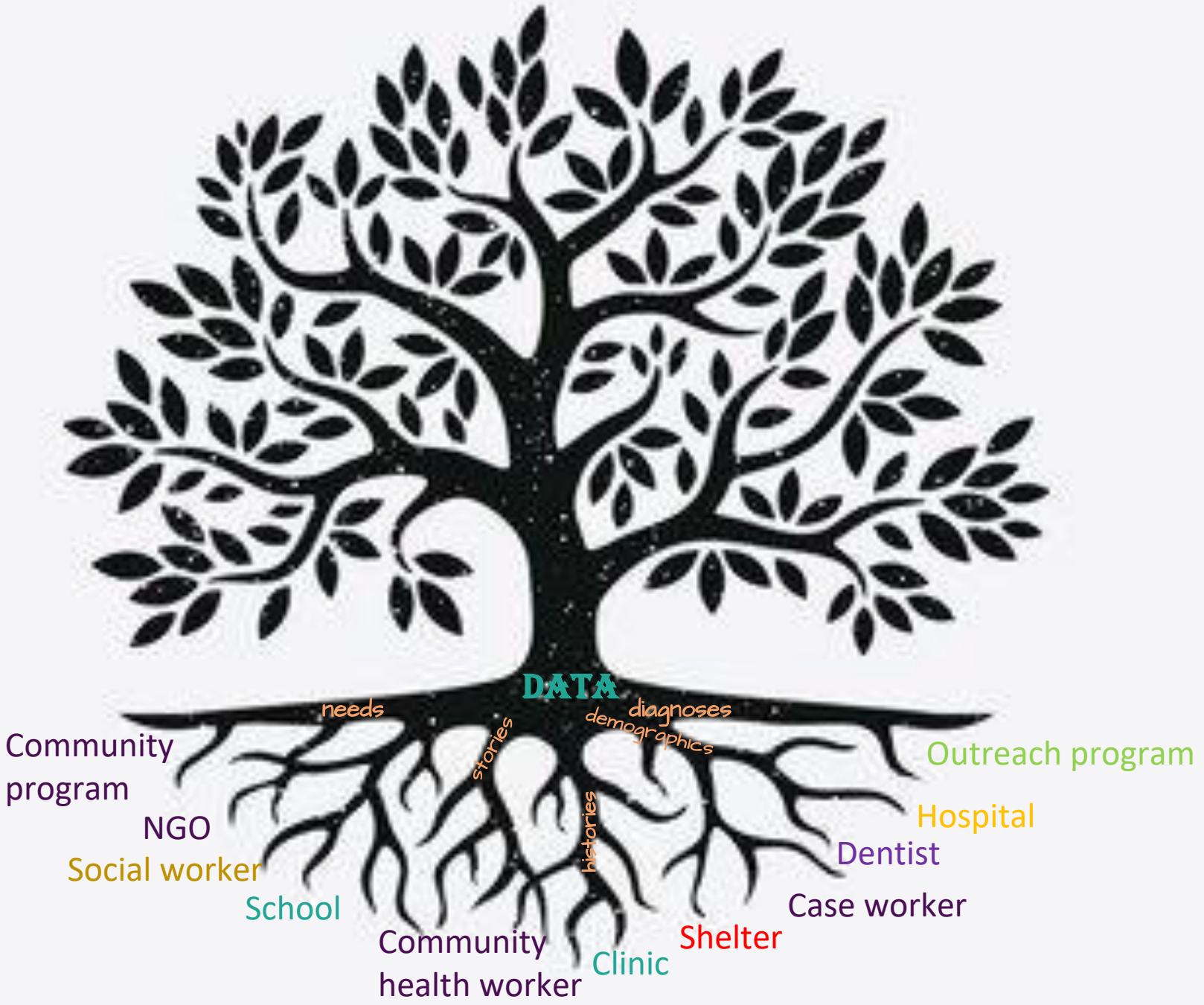
Outreach program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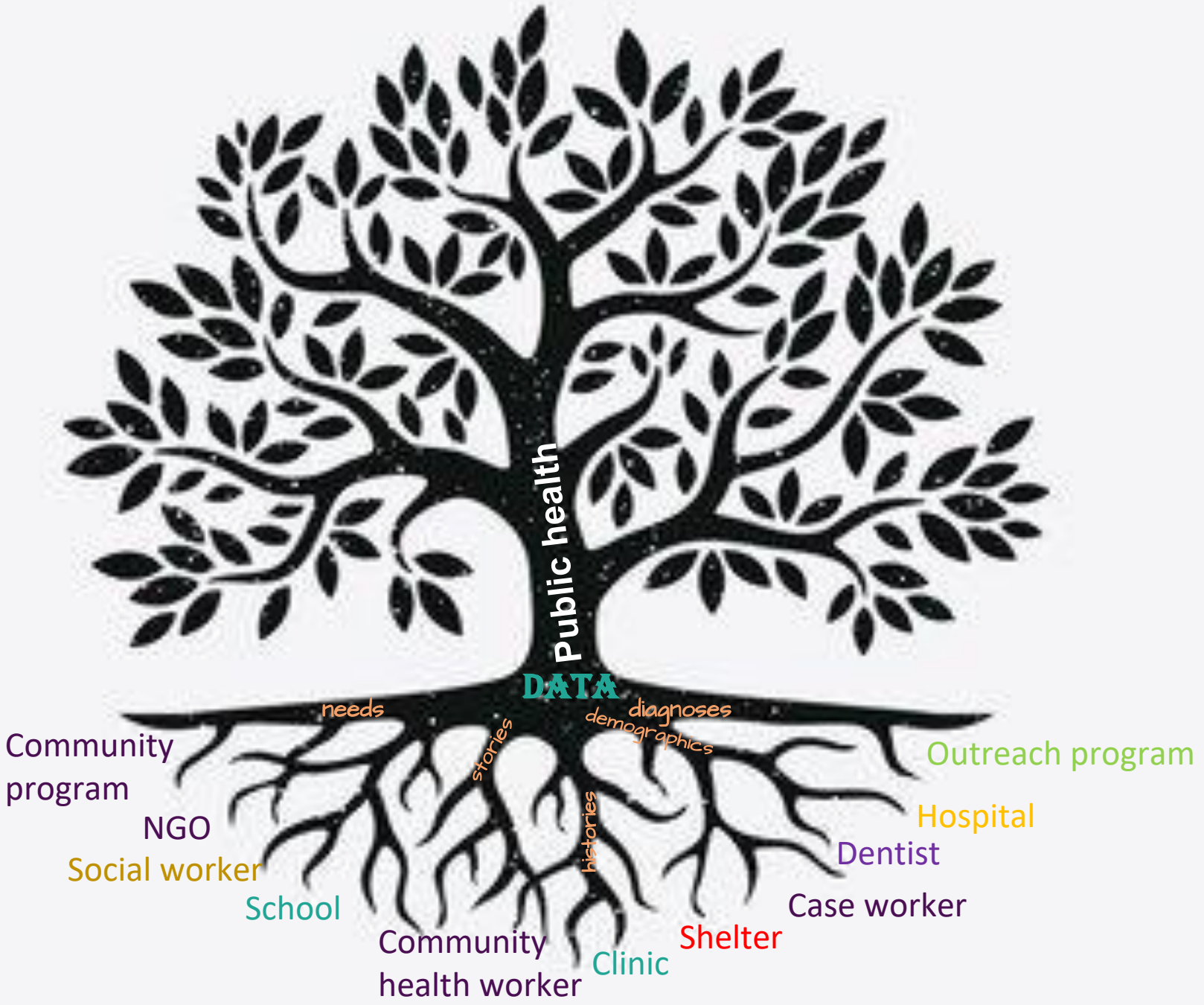
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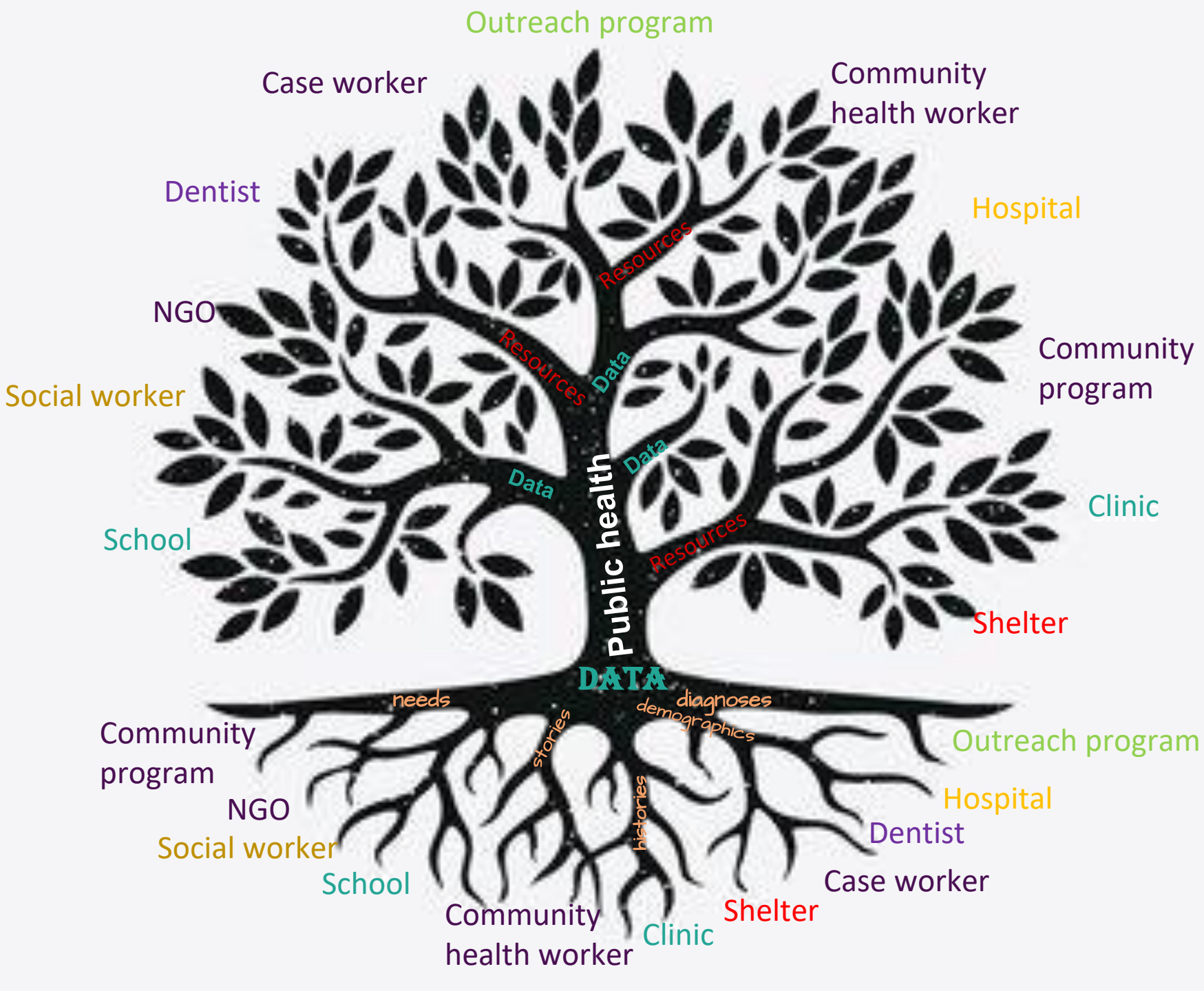
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Partnering public health and healthcare

The NEW ENGLAND JOURNAL of MEDICINE

Integrating Public Health and Health Care — Protecting Health as a Team Sport

Charlene A. Wong, M.D., M.S.H.P., Debra Houry, M.D., M.P.H., and Mandy K. Cohen, M.D., M.P.H.

Apr 10, 2024

- Defining clear roles and responsibilities
- Bidirectional information exchange
- Cross training
- Aligned priorities and investments

How are we doing in Utah?

Roles and responsibilities

Public health
- Monitor and report on data and trends
- Transmit information to the public
- Provide guidance on changing situations
- Information on individuals not accessing healthcare

Healthcare
- Provide care to individuals
- Report data and unusual events
- Counsel individuals
- Stay up-to-date on changing guidance
- Implementing best practices

Make sure public health considers these when we plan our work
- **We are doing our part**
- **We create material to support the roles of healthcare**

Bidirectional information exchange

Data to public health

Only 33% of healthcare facilities in the U.S. send data in through an automated system

In Utah:

- Laboratory information in Utah is transmitted automatically for ~80 reportable conditions
  - >98% of all laboratory based testing
  - >90% of clinical testing in Utah
- Electronic case reporting captures at least 80% of our population
  - This includes 84 infectious, chronic, and environmental conditions

Data from public health

- Multiple working groups and meeting on specific topics (ex: healthcare associated infections, STIs)
- Talks at conferences
- Websites
- Public health grand rounds

Summer 2024:
What's getting hot in Utah's health?

Cows with bird flu, babies with syphilis, and other things that just ain't right.

Public Health Grand Rounds
Thursday, June 27 8–9 a.m.

At Primary Children's Hospital in the 3rd floor auditorium and virtual

Scan for registration and online info

Cross training

- Curricula in medical school and residencies
  - What is public health?
  - How does the public health system get data?
  - How to use public health data in practice
    - Ex: screening a person for hepatitis C and endocarditis after an overdose
- Curricula for public health programs
  - Aim to consider approaches that can be used by practitioners
  - Understand the limitations of the data

Utah's status:
Working to pull in medical students and residents to work on projects in public health
Would love to hear about training opportunities

Align priorities

Create a system that rewards prevention

- Prevention-oriented quality measures
  - Example screening for cervical cancer, lead exposure, or clinical depression
- Rewarding improvements in population-level outcomes
  - Medicare: Shared Savings Program
  - Advanced Research Projects Agency for Health: Healthcare Rewards to Achieve Improved Outcomes (HEROES) program

Priority: Advance chronic disease

- Infectious diseases
- Injuries
- Chronic diseases

Chronic disease data sources

- Syndromic surveillance
- Electronic case reporting
- BRFSS

Syndromic surveillance

Detects “syndromes” rather than specific disease

- Ex: Instead of flu we look for people with fever and cough

Looks at discharge diagnosis and chief complaint

Allows for detection of new pathogens and can rapidly evolve

Data comes from clinical sites across the state

Data in Utah comes from:

- All emergency rooms
- 40% of urgent care sites
- Small number of primary care clinics

Syndromic surveillance

Detects “syndromes” rather than specific disease

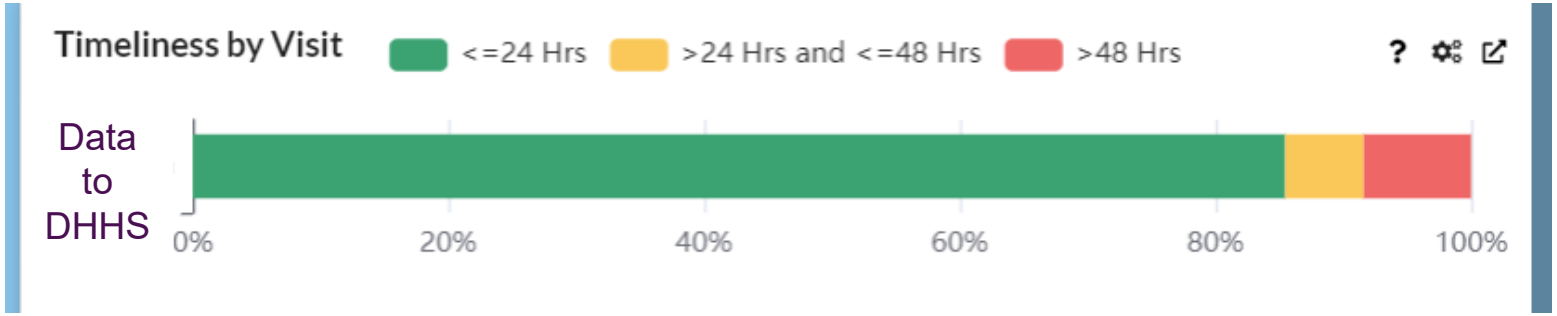
- Ex: Instead of flu we look for people with fever and cough

Looks at discharge diagnosis and chief complaint

Allows for detection of new pathogens and can rapidly evolve

Data comes from clinical sites across the state

Data transfer is very rapid



Syndromic surveillance complexity

CCDD TERMS: (,^fever^,andnot,^denies fev^,andnot,^shot^,andnot,^afeb^,andnot,^no fev^,andnot,^no temp^,or,^chill^,or,^pyrexia^,or,^ febrile^,or,^high temp^,or,^elevated temp^,andnot,^denies any elevated temp^,andnot,^no elevated temp^,or,^feeling hot^,or,^feels hot^,or,^fvr^,andnot,^denies fvr^,andnot,^no fvr^,),and,(,^cough^,andnot,^denies cough^,or,^sore ^th[o|r][a|o][a|r]t^,or,^soreth[o|r][a|o][a|r]t^,or,^strep^,or,^pharyn^,or,^upper resp^,),or,(,^[;/]J09^,or,^[;/]J10^,or,^[;/]J11^,or,^[;/]487.[018];^,or,^[;/]487[018];^,or,^[;/]487.[018],or,^[;/]487[018],or,^[;/]488.[018][19];^,or,^[;/]488[018][19];^,or,^[;/]488.[018][19],or,^[;/]488[018][19],or,^442696006^,or,^442438000^,or,^6142004^,or,^195878008^,or,^influenza^,andnot,^vaccin^,andnot,^shot^,andnot,^immunizat^,or,^ flu ^,andnot,^shot^,andnot,^stomach^,andnot,^vaccin^,andnot,^immuniza^,or,^flu like^,or,^flulike^,or,^flu symptom^,),andnot,^[;/]A08.4^,andnot,^[;/]A084^

Influenza-like illness syndromic definition

Chronic disease data sources

- Syndromic surveillance
  Quick and dirty
- Electronic case reporting
- BRFSS

Electronic case reports (ECR)

Medical record data

Specific public health data

insurance

name

address

HgA1c

lung function tests

Family history

LDL

blood test

family history

eye exam

PSA

COVID test

Long COVID

Electronic medical record

Lab report

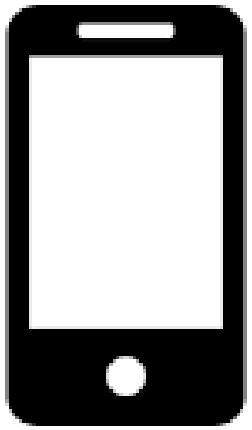
Limits of electronic case reporting

- CDC sets the conditions that can be pulled
- Based on ICD code
- Currently only a few chronic conditions: long COVID, lead poisoning
- Massive amounts of data
  - Still trying to understand how to filter data

Chronic disease data sources

- Syndromic surveillance
  Quick and dirty
- Electronic case reporting
  In its infancy
- BRFSS

Behavioral risk factor surveillance system (BRFSS)



National random digit dialed survey

- Designed to be representative of entire state population
- Randomly selected adult in the household is interviewed
- Weighted to represent the entire state population

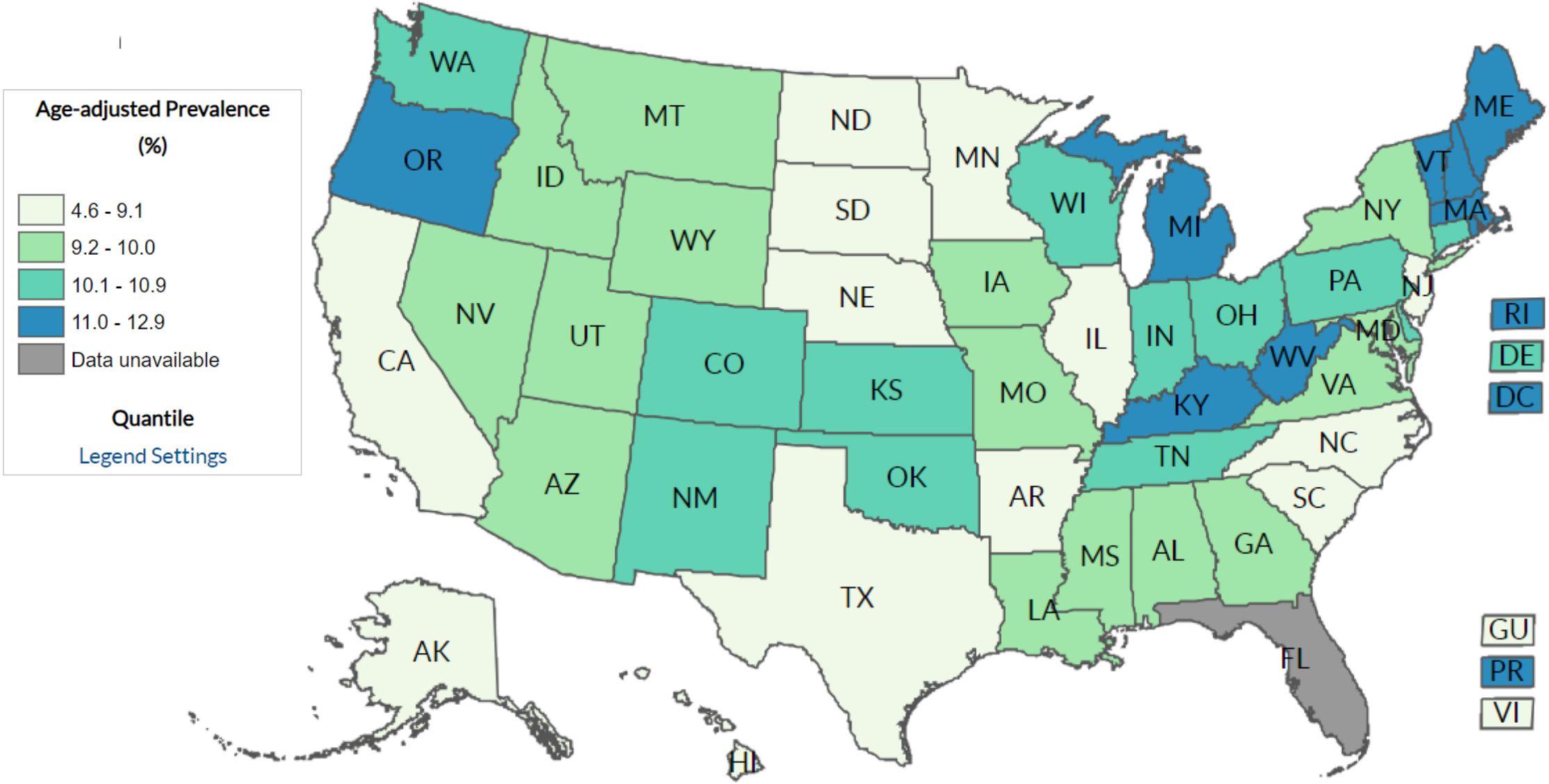
Initiated in 1984 in 15 states

- Now done in all 50 states and 3 territories

2021

Current asthma prevalence among adults aged >= 18 years

View by: Overall



Behavioral risk factor surveillance system (BRFSS)

Core	CDC Optional Modules	Utah Added Questions
• Demographics • Health status* • Healthy days (physical, mental)* • Disability • Sleep, oral health • Exercise • Chronic health conditions (heart disease, stroke, cancer, depression, arthritis, asthma, diabetes) • Cancer xcreenings • Immunizations • COVID • Tobacco/alcohol use	• Sexual Orientation/Gender Identity • Industry & Occupation • Social Determinants of Health • Cancer Survivorship • Caregiver • Cognitive Decline • Tobacco Cessation • Alcohol Screening and Brief Intervention • Asthma Callback **253 questions in 2022!!**	• Food Insecurity • Access to Transportation • Healthcare Discrimination • Diabetes • ACEs/PCEs • Marijuana Use • Telehealth • Insurance and Access • COVID • Family Planning • Sexual Violence and Intimate Partner Violence • Suicidality • Firearms & Suicidality • Substance Abuse & Chronic Pain

Utah's BRFSS

2022 data collection statistics

- Total interviews complete: 10,010
  - Cell phone: 8,680
  - Average interview length: 38 minutes
- 134,056 total phone numbers were dialed
  - 53.1% took 1 minute or less with little/no contact
  - 38.6% took >2 minutes, yet did not reach the general health question
  - 8.3% reached the general health question

Limits to BRFSS

- This data represents patient reported conditions
- Only a representative sample of the population

This is our predominant source of information about chronic diseases

Chronic disease data sources

- Syndromic surveillance
  Quick and dirty
- Electronic case reporting
  In its infancy
- BRFSS
  Self-reported and small sample of the population

Priority: Advance chronic disease

- Infectious diseases
- Injuries
- Chronic diseases

Priority: Advance chronic disease

- Infectious diseases
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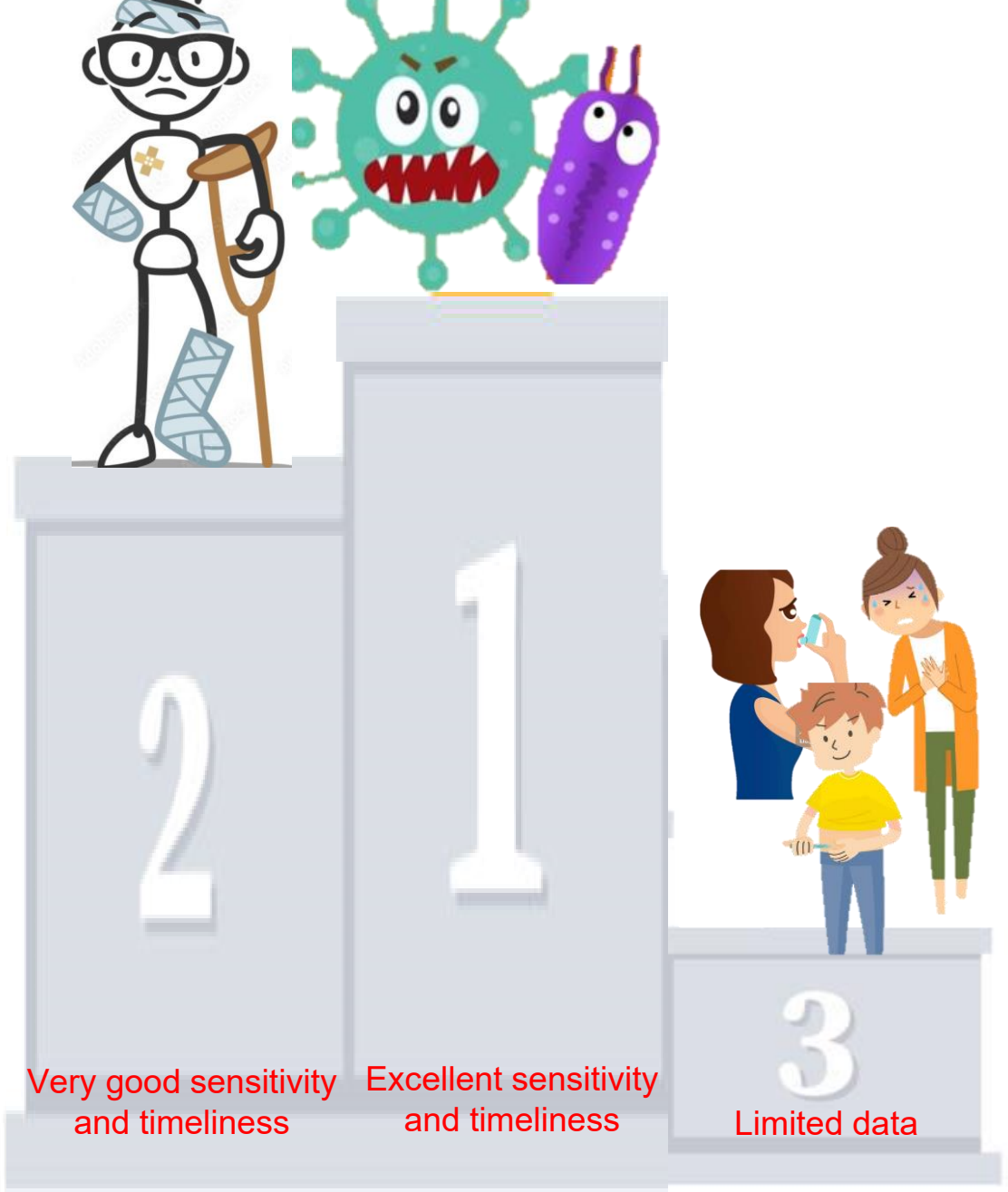
Top causes of death in Utah are chronic disease

1. Diseases of heart
2. Malignant neoplasm
3. Unintentional injuries
4. Alzheimer's disease
5. Cerebrovascular diseases
6. Chronic lower respiratory diseases
7. Diabetes mellitus
8. Intentional self-harm (suicide)
9. Nephritis, nephrotic syndrome and nephrosis
10. Flu/pneumonia

7 of top 10 are chronic diseases



Top causes of death in Utah are chronic disease

1 Diseases of heart
2 Malignant neoplasm
3 Unintentional injuries
4 Alzheimer's disease
5 Cerebrovascular diseases
6 Chronic lower respiratory diseases
7 Diabetes mellitus
8 Intentional self-harm (suicide)
9 Nephritis, nephrotic syndrome and nephrosis
10 Flu/pneumonia

COVID
2020+ 2021
2022

7 of top 10 are chronic diseases

We want clinician input and engagement to move this forward!

Partnering public health and healthcare

- Define clear roles and responsibilities
- Bidirectional information exchange
- Cross training
- Aligned priorities and investments

Falls

Nationwide trend in falls

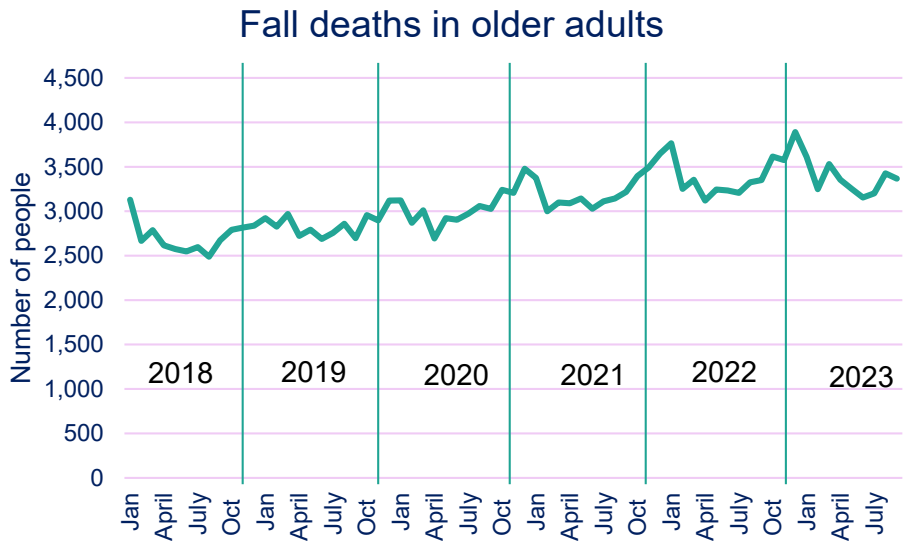
Falls are the leading cause of injury among adults aged ≥65 years

- One in four adults ages 65 and older report falling each year
- One in five falls will result in a serious injury, such as a traumatic brain injury or broken bone

In 2018 falls resulted in

- 3 million emergency department visits
- More than 950,000 hospitalizations
- ~32,000 deaths

Deaths from falls are increasing, with the largest increases occurring among persons aged ≥85 years

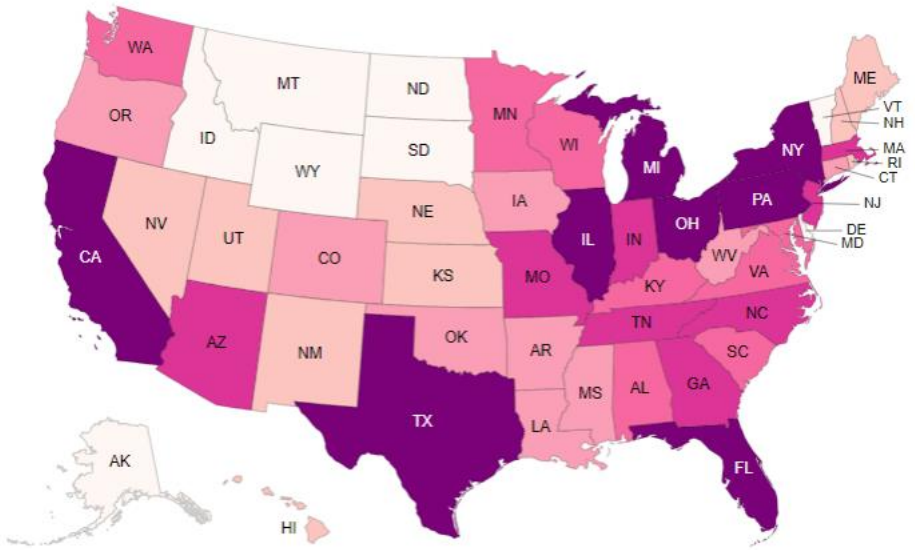


https://www.cdc.gov/falls/data/index.html

Cost of falls

About $50 billion is spent on medical costs related to older adult falls each year

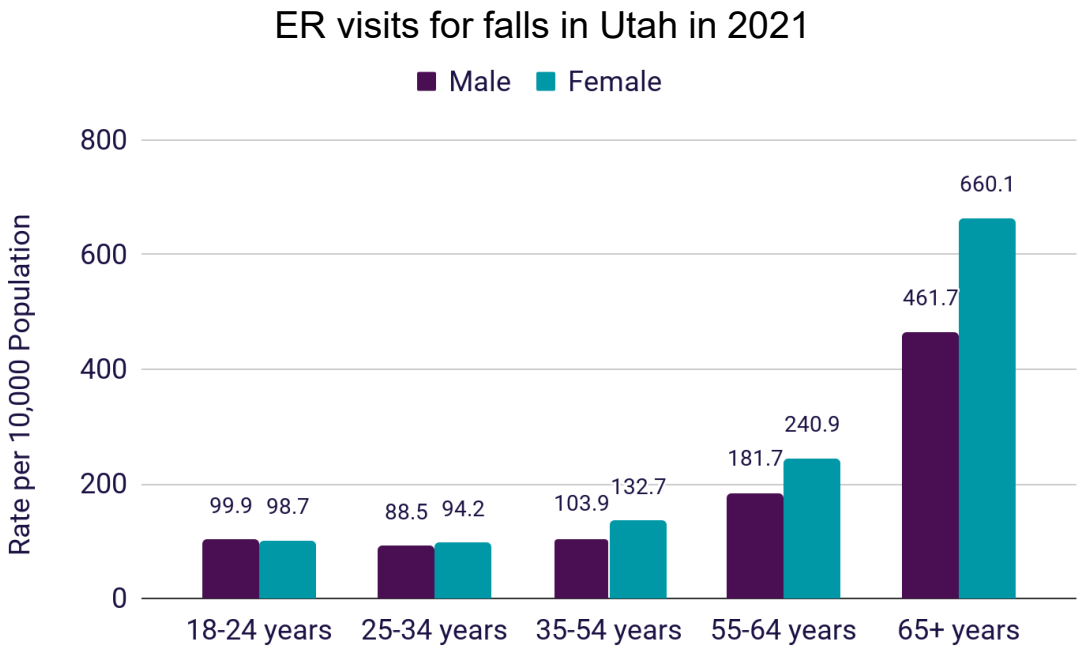
- Fatal falls make up $754 million (1.5%)
- Non-fatal falls
  - $29 billion is paid by Medicare
  - $12 billion is paid by private or out-of-pocket payers
  - $9 billion is paid by Medicaid



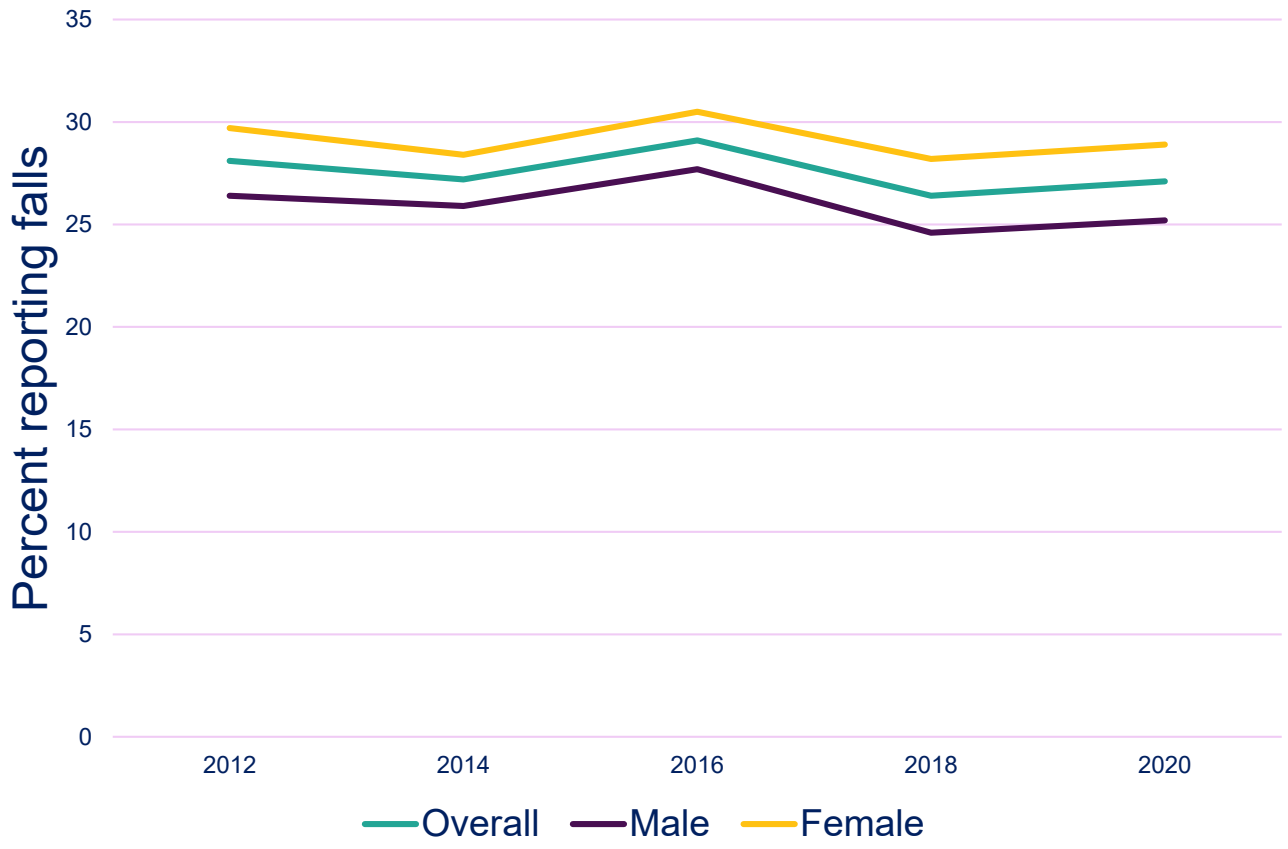
This is going to increase as the population ages

Utah specific data on falls

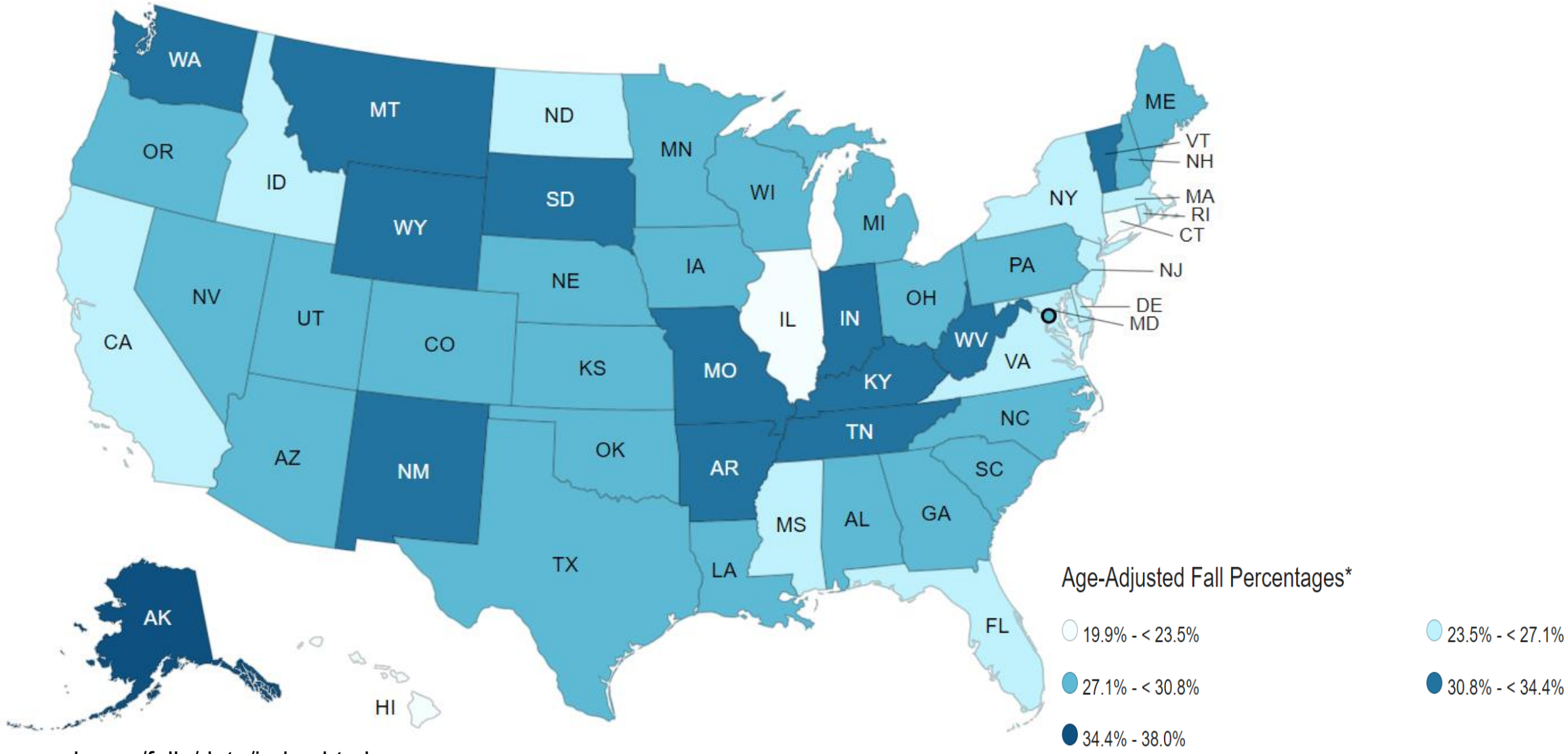
- Falls resulted in more than 22,000 visits to the emergency room in 2021



Utahns reporting a fall in the past year

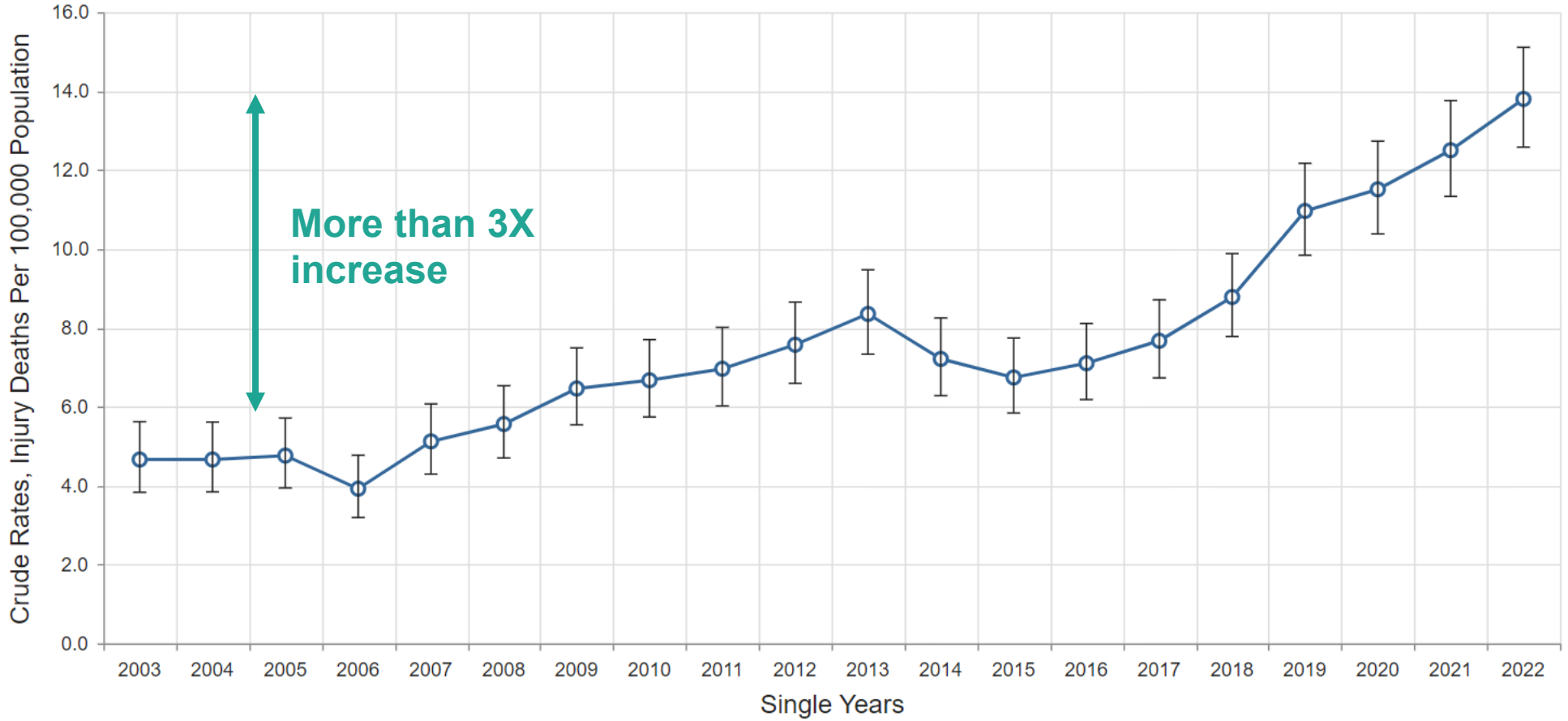


Reported falls from nation-wide survey



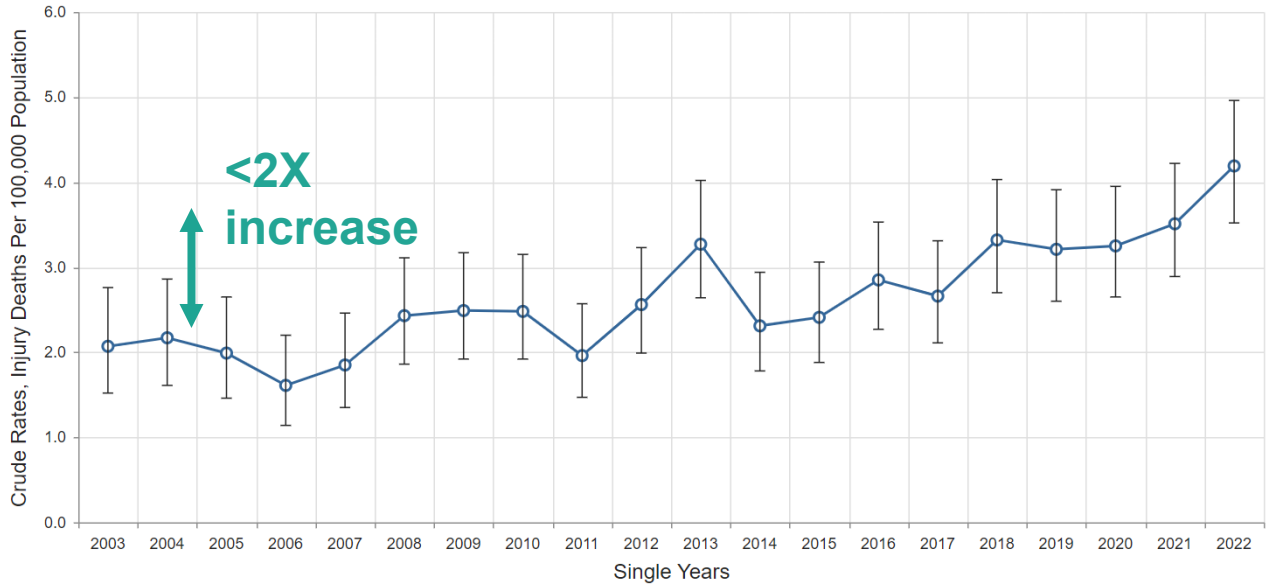
https://www.cdc.gov/falls/data/index.html

Deaths due to falls in Utah 2003-2022

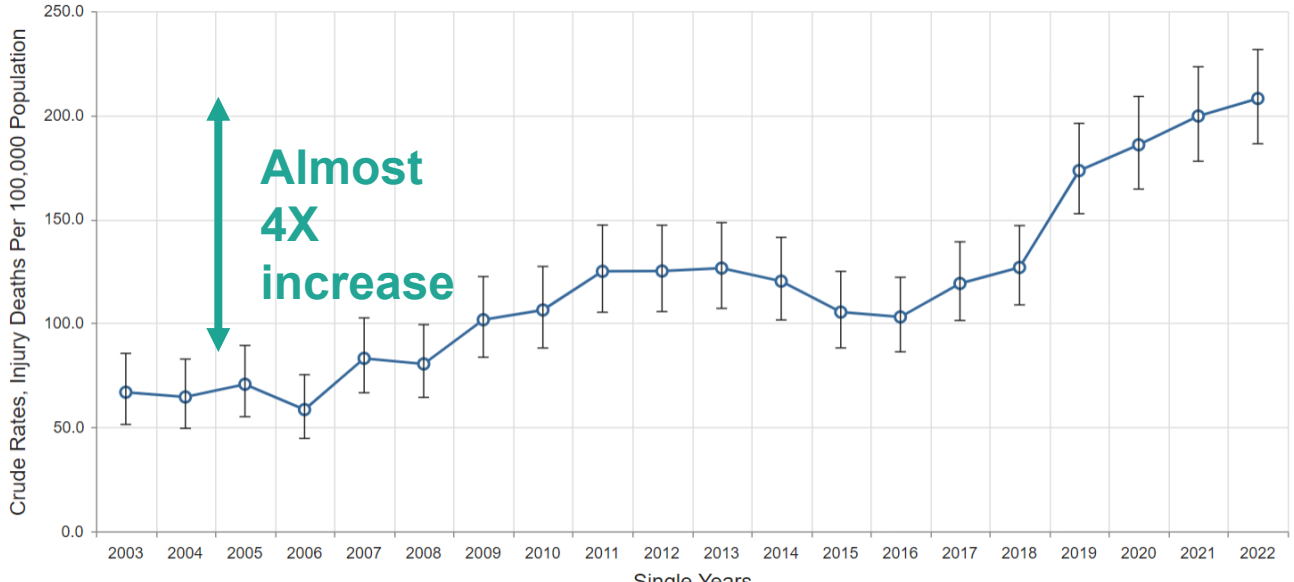


Death from falls in Utahns by age group

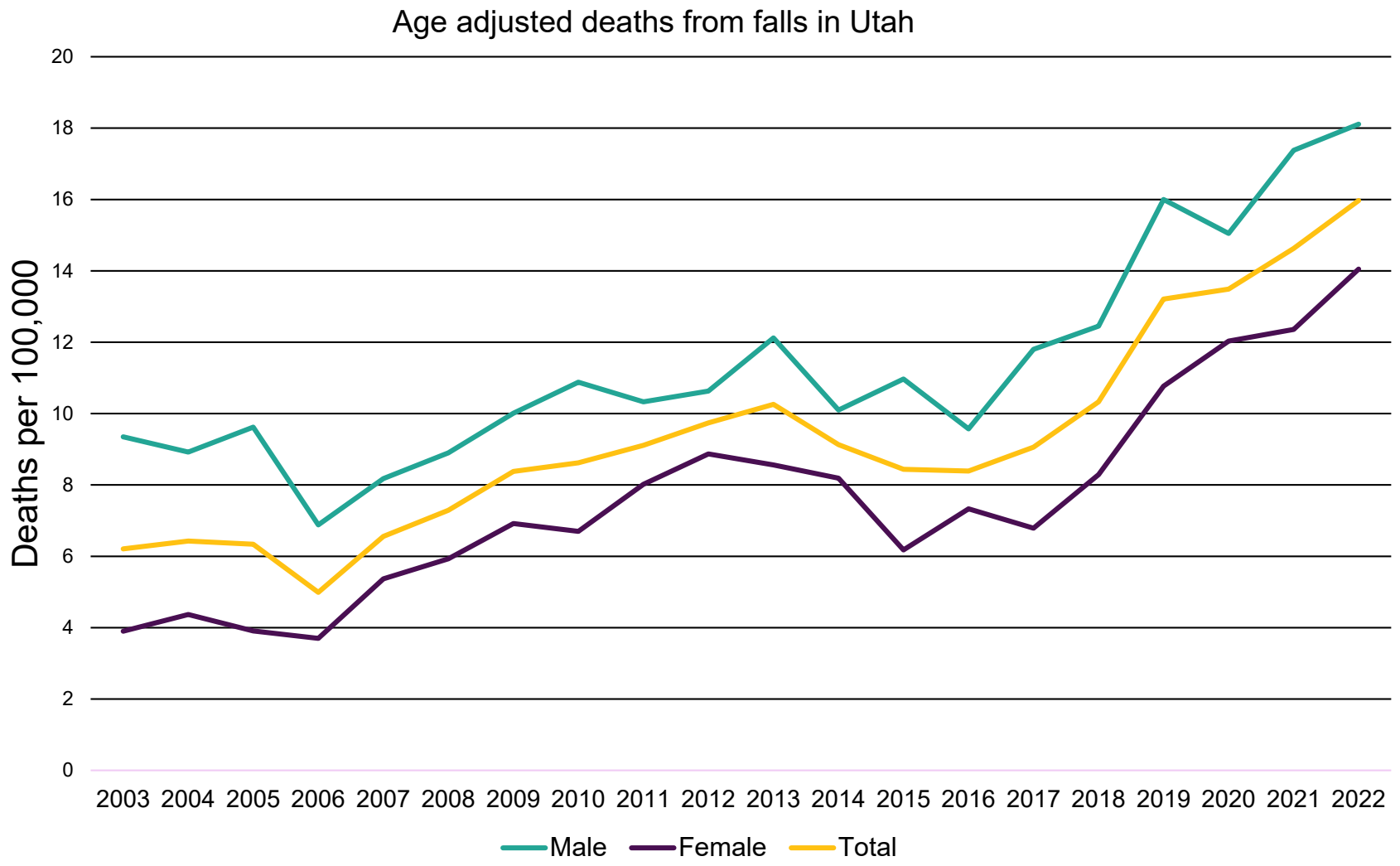
People younger than age 75



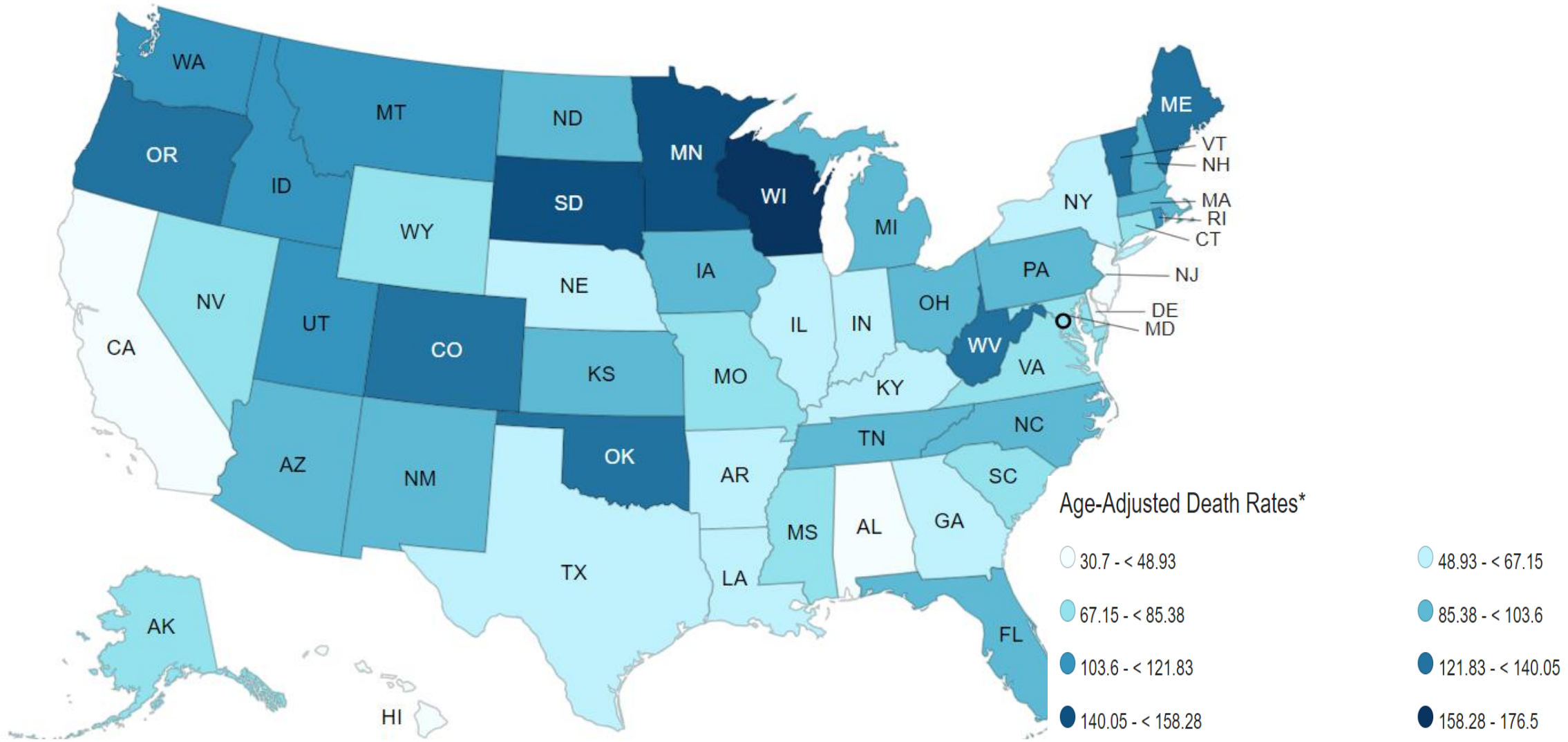
People age 75 and older



Deaths by sex



Older adult falls deaths in 2021



https://www.cdc.gov/falls/data/index.html

Who's falling?

National data

Falls

- 27.6% of older adults reported falling in 2019
  - This is 14 million people
  - This increases from 26% in 65-75 year olds to 33% in people older than age 85
- 29% of women and 26% of men reported falling
- Falls were highest in rural counties and lowest in large central metro areas

Deaths

- 38,742 (78.0 per 100,000 population) older adults died from falls in 2021
  - This increases from 19/100,000 in 65-75 year olds to 338/100,000 in people older than age 85
- Men die of falls at a higher rate than women
  - 91 vs. 68 per 100,000
- Deaths from falls were highest in medium metro areas and lowest in large central metro areas

https://www.cdc.gov/mmwr/volumes/72/wr/mm7235a1.htm

Risk factors

Recent hospitalization

- People were 4 times more likely to report falls in the two weeks after hospitalization than baseline
  - Even after ED visit people were 2X more likely to fall than baseline
- 15% of all re-hospitalizations in the first month after discharge are due to falls
- Risk factors post hospitalization included
  - Use of tertiary amine tricyclic antidepressant
  - Prolonged immobility while in hospital
  - Delirium
  - Balance problems
  - Poor eyesight
  - Poor nutrition
  - Substance abuse and smoking
  - Certain health conditions, including:
    - Osteoporosis
    - Arthritis
    - Clinical depression
    - Dementia
    - Neurological or musculoskeletal disorders

- Mahoney JE, et al., Temporal association between hospitalization and rate of falls after discharge. Arch Intern Med. 2000
- Adams et al., Associations between home injury falls and prior hospitalizations in community dwelling older adults: A population case-crossover study. Injury. 2020

Non-hospitalization risk factors

In-home environmental hazards, including:

- Poor lighting
- Lack of grab bars and handrails
- Slippery or wet surfaces
- Uneven floors and surfaces
- Clutter
- Loose throw rugs

Protective factor was the use of a cane

- Mahoney JE, et al., Temporal association between hospitalization and rate of falls after discharge. Arch Intern Med. 2000
- Adams et al., Associations between home injury falls and prior hospitalizations in community dwelling older adults: A population case-crossover study. Injury. 2020

What can you do?

- Add fall risk screening and assessment to electronic health record systems
- Promote mobility during hospitalization
- Refer to physical therapy (PT)
- Minimize use of psychoactive medications
- Screen for vision or balance problems

Three Key Questions:

- Have you fallen in the past year?
- Do you feel unsteady when standing or walking?
- Are you worried about falling?

Check Your Risk for Falling

Circle "Yes" or "No" for each statement below			Why it matters
Yes (2)	No (0)	I have fallen in the past year.	People who have fallen once are likely to fall again.
Yes (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	People who have been advised to use a cane or walker may already be more likely to fall.
Yes (1)	No (0)	Sometimes I feel unsteady when I am walking.	Unsteadiness or needing support while walking are signs of poor balance.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	This is also a sign of poor balance.
Yes (1)	No (0)	I am worried about falling.	People who are worried about falling are more likely to fall.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	This is a sign of weak leg muscles, a major reason for falling.
Yes (1)	No (0)	I have some trouble stepping up onto a curb.	This is also a sign of weak leg muscles.
Yes (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
Yes (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
Yes (1)	No (0)	I take medicine that sometimes makes me feel light-headed or more tired than usual.	Side effects from medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I often feel sad or depressed.	Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.
Total _____		Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.	

To check your risk online, visit: www.bit.ly/3o4RiW8

This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. J Safety Res; 2011: 42(6)493-499). Adapted with permission of the authors.

https://www.cdc.gov/steadi/pdf/STEADI-Brochure-StayIndependent-508.pdf

Resources

STEADI Stopping Elderly Accidents, Deaths & Injuries

STEP 1	Assess existing inpatient fall prevention activities and readiness for change
STEP 2	Identify inpatient champions and interprofessional fall prevention team members
STEP 3	Obtain leadership support
STEP 4	Identify and link with external partner resources
STEP 5	Adapt electronic health record tools
STEP 6	Identify team members' tasks
STEP 7	Train team members
STEP 8	Develop implementation and monitoring plans
STEP 9	Identify reimbursement and quality improvement opportunities
STEP 10	Document the individualized care plans for your patients

https://www.cdc.gov/steadi/pdf/STEADI-inpatient-guide-508.pdf

UTAH
An official website

Utah Department of
Health & Human Services
Population Health

Home | Living Well | Find a Workshop | Resources | Data | About Us

Living Well

The Healthy Aging Program offers a variety of evidence-based programs for living well. Many of these programs are no-cost to you so enroll today.

https://healthyaging.utah.gov/livingwell/

No-cost programs through Utah DHHS

Falls Prevention

EnhanceFitness

This class focuses on stretching, flexibility, balance, low impact aerobics, and strength training exercises.

Enroll now

Stepping On

Stepping On addresses medication, visual impairments, strength, balance, and the home environment.

Enroll now

Tai Chi

Tai Chi is an enjoyable exercise that can relieve your pain, improve your health, and increase your ability to do things.

Enroll now

Additional reason to do something

- The Centers for Medicare and Medicaid Services (CMS)
  - Hospital Readmissions Reduction Program reduces payments to hospitals with excess readmissions within 30 days of discharge.
  - Includes injuries related to falls

Surgical site infections

Each day, approximately one in 31 U.S. patients and 1 in 43 nursing home residents contracts at least one infection in association with their healthcare

How do we look at hospital acquired infections?

- National Healthcare Safety Network (NHSN)
  - Tracks many measures related to healthcare safety
    - Healthcare-associated infections
    - Blood safety errors
    - Healthcare vaccination rates
  - Covers ~37,000 medical facilities
    - Acute care hospitals, long-term acute care hospitals, psychiatric hospitals, rehabilitation hospitals, outpatient dialysis centers, ambulatory surgery centers, and nursing homes
  - Data is given back to the medical facilities in real time
    - Allows them to track progress and compare to national trends

Utah facilities reporting to NHSN

- Acute care hospitals: 40
- Long term care hospitals: 2
- Inpatient rehab facilities: 11
- Critical access hospitals: 9

NHSN goals

U.S. Department of Health and Human Services (HHS) created targets for the national acute care hospital metrics

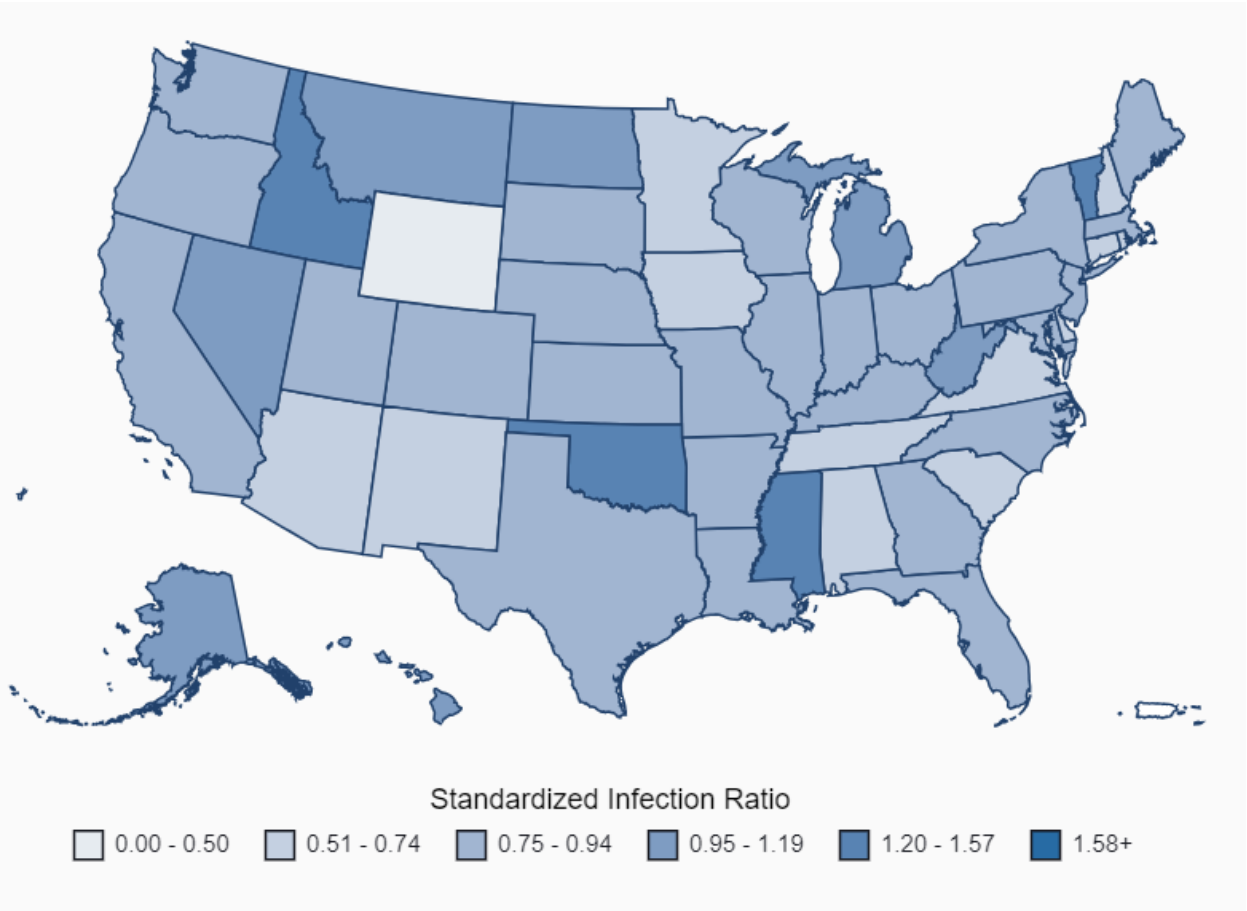
- Set goals for 2020 relative to 2015 rates

  - Reduce central line-associated bloodstream infections (CLABSI) in intensive care units and ward-located patients
  - Reduce catheter-associated urinary tracts infections (CAUTI) in intensive care units and ward-located patients
  - Reduce the incidence of invasive healthcare-associated methicillin-resistant *Staphylococcus aureus* (MRSA) infections
  - Reduce hospital-onset MRSA bloodstream infections
  - Reduce hospital-onset *Clostridioides difficile* infections (CDI)
  - Reduce the rate of *Clostridioides difficile* hospitalizations
  - Reduce surgical site infections (SSI)

Focusing on surgical site infections after colon surgeries and abdominal hysterectomies

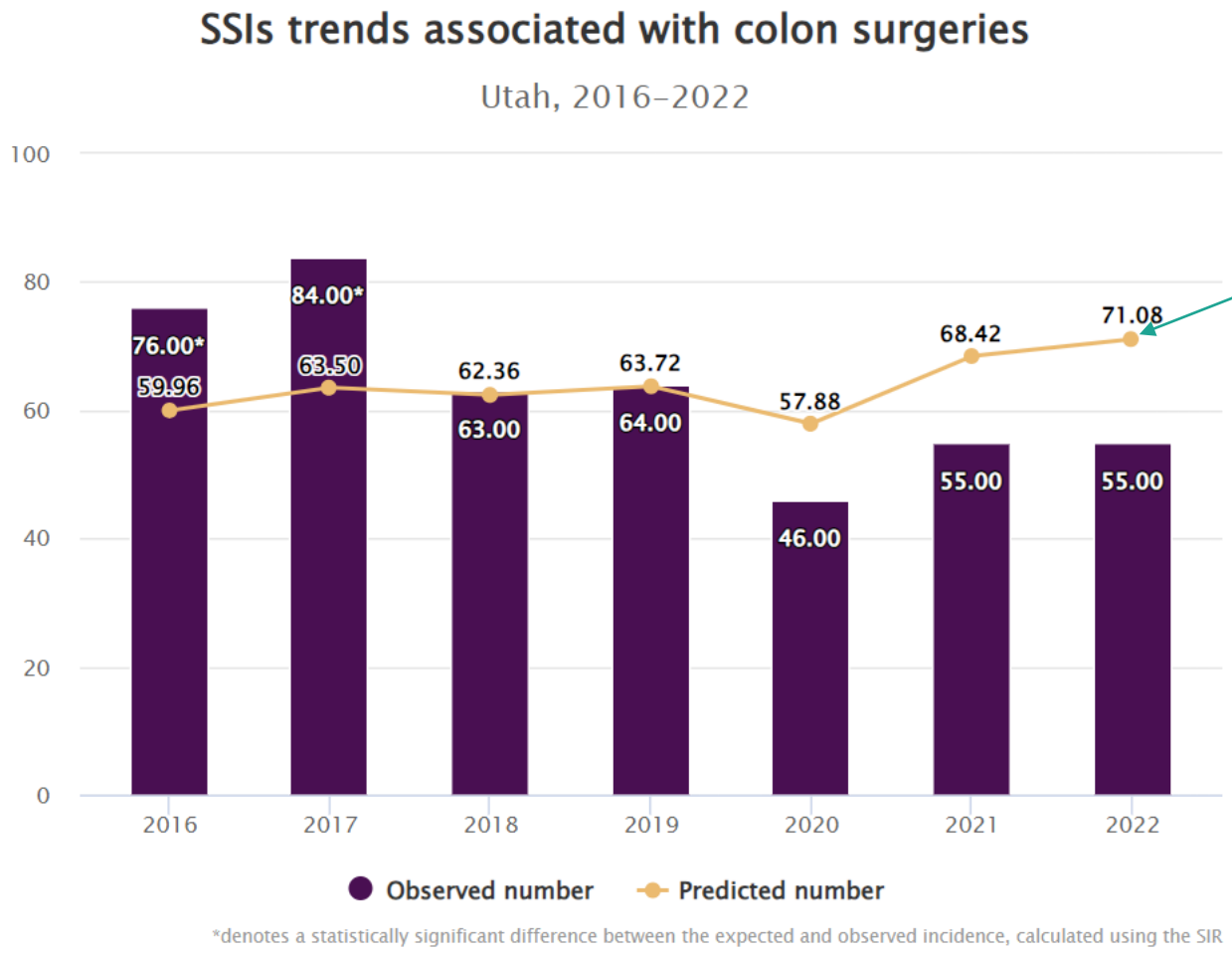
Colon surgical site infections in 2022

- Nationwide:
  - 3,052 acute care hospitals reported on this metric
  - 7,355 colon SSIs were reported
  - 14% decrease since 2015
    - But no change 2021 to 2022



https://arpsp.cdc.gov/profile/nhsn/colon

Surgical site infections in Utah

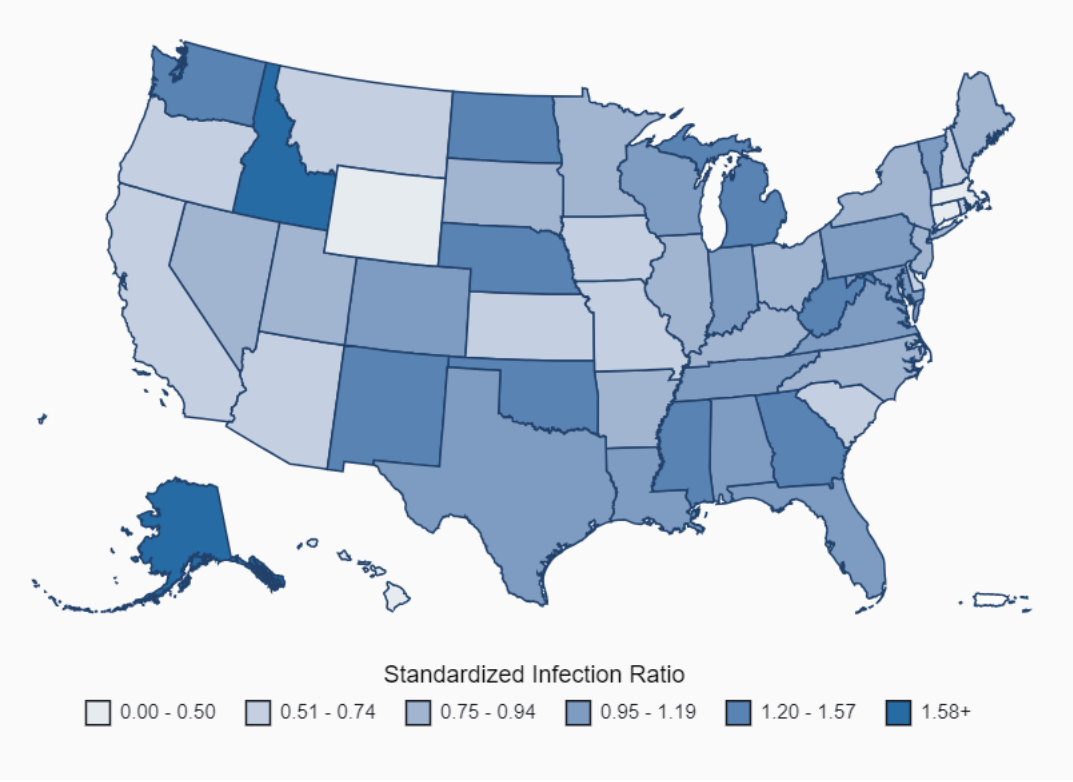


Predicted number based on the number of procedures and comorbidities

Yearly reports on Utah healthcare-associated infections are located at :
https://epi.health.utah.gov/healthcare-associated-infections-reports/

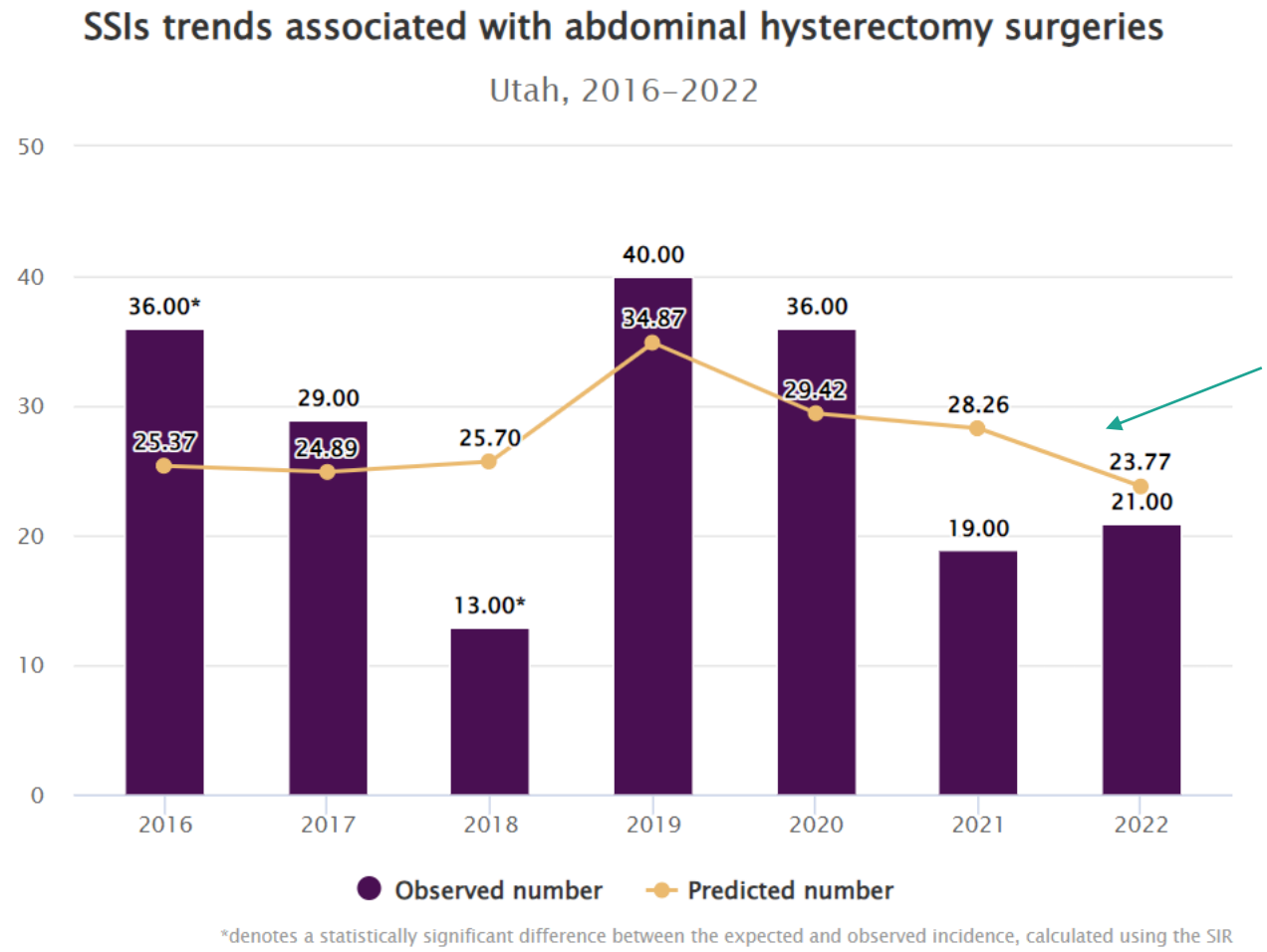
Hysterectomy infections in 2022

- Nationwide:
  - 2,789 acute care hospitals reported on this metric
  - 1,695 hysterectomy SSIs were reported
  - 5% decrease since 2015
    - But no change 2021 to 2022



https://arpsp.cdc.gov/profile/nhsn/hyst

Surgical site infections in Utah



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Changes in healthcare-associated infections nationwide

Measure	2020 Target (from 2015 baseline)	Progress made 2019 (from 2015 baseline)
Central line infection	50% reduction	31% reduction
Catheter-associated UTI	25% reduction	26% reduction
Invasive MRSA	50% reduction	5% increase[4]
Hosp related MRSA	50% reduction	18% reduction
Hosp related C diff infection	30% reduction	42% reduction
Surgical site infection	30% reduction	7% reduction
Clostridioides diff-related hospitalization	30% reduction	29% reduction

https://www.hhs.gov/oidp/topics/health-care-associated-infections/targets-metrics/index.html

CMS care compare website

-Look at specific facilities

Compare to national average
- 0 is the same
- >0 is more
- <0 is less

	Ogden Regional Medical Center 5475 South 500 East Ogden, UT 84405	McKay Dee Hospital 4401 Harrison Boulevard Ogden, UT 84403	Holy Cross Hospital-Davis 1600 West Antelope Drive Layton, UT 84041
Infections			
Central line-associated bloodstream infections (CLABSI) in ICUs and select wards *Lower numbers are better* National benchmark: 1.000	0.413 No different than national benchmark	1.251 No different than national benchmark	0.000 No different than national benchmark
Catheter-associated urinary tract infections (CAUTI) in ICUs and select wards *Lower numbers are better* National benchmark: 1.000	0.000 No different than national benchmark	0.542 No different than national benchmark	0.000 No different than national benchmark
Surgical site infections (SSI) from colon surgery *Lower numbers are better* National benchmark: 1.000	1.080 No different than national benchmark	0.431 No different than national benchmark	0.632 No different than national benchmark
Surgical site infections (SSI) from abdominal hysterectomy *Lower numbers are better* National benchmark: 1.000	Not available [13]	Not available [13]	0.424 No different than national benchmark

https://www.medicare.gov/care-compare/?providerType=Hospital

Thanks to so many!

Clinicians who contribute the data

Staff at Utah Department of Health and Human Services and all the local health departments

Special call out to Jack Pfeiffer and Amanda Smith for specific data for these slides

Summer 2024:
What's getting hot in Utah's health?

Cows with bird flu, babies with syphilis, and other things that just ain't right.

Public Health Grand Rounds
Thursday, June 27 8:00 – 9:00 a.m.

At Primary Children's Hospital in the 3rd floor auditorium and virtual

Scan for registration and online info