SPRINGFIELD PUBLIC SCHOOLS

Annual Health & Safety Training 2024-2025

Employee Right-to-Know

Bloodborne Pathogens

EMPLOYEE RIGHT-TO-KNOW TRAINING

ERK Overview

- The ERK coordinator for your district is Keith Kottke.
- The ERK standard requires employers to make employees aware of hazardous substances and/or agents that may be encountered at work.

ERK Overview

- Responsibility
- Hazard determination by employers
- Written program – available in the District Office
- Safety Data Sheets (SDS)
- Labels and other warnings
- Methods of protection
- Emergency procedures

Globally Harmonized System (GHS)

- Globally Harmonized System of Classification and Labeling of Chemicals
  - Defining health, physical and environmental hazards
  - Creating classification processes using available data on chemicals
  - Communicating hazard information and protective measures; on labels and Safety Data Sheets (SDS)

Compliance dates

EFFECTIVE DATE	REQUIREMENT	WHO IT AFFECTS
Dec. 1, 2013	Train all employees on the new label elements and Safety Data Sheet format	Employers
June 1, 2015	Comply with all modified provisions of this rule, except distributors that are allowed to ship products labeled by manufacturers under the old system until Dec. 1, 2015	Chemical manufacturers, importers, distributors and employers
Dec. 1, 2015	Comply with all modified provisions of the rule	Distributors
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards	Employers

Note: During the transition period, all chemical manufacturers, importers, distributors and employers may comply with either the final standard, the current standard or both.

Source: OSHA

Health Effects

Acute

- Generally manifests quickly (either immediately or within days after an exposure)

  An example would be an acid spill on skin. The acute effect is immediate irritation or corrosion of the skin.

Chronic

- Usually takes longer to develop through repeated exposures
- Usually targets certain organs (i.e. asbestos targets the lungs)

  An individual may not be able to sense the exposure.

Categories of Chemical Hazards

- Toxic – kills living cells
- Irritant – causes inflammation of tissues
- Corrosive – irreversibly destroys or alters tissues
- Oxidizer – enhances combustion of other materials
- Sensitizer – causes exaggerated allergic-type response
- Flammable – capable of being easily ignited and burning quickly

Categories of Hazards

REACTIVE – CAUSES RAPID CHEMICAL REACTIONS SUCH AS TEMPERATURE INCREASES, PRESSURE BUILDUP, OR NOXIOUS/TOXIC/CORROSIVE BYPRODUCTS

CARCINOGEN – CAUSES CANCER OR HAS THE POTENTIAL TO CAUSE CANCER

MUTAGEN – CAUSES MUTATION OF DNA OR CHROMOSOMES

TERATOGEN – CAUSES PHYSICAL DEFECTS OF DEVELOPING EMBRYO OR FETUS

REPRODUCTIVE AGENTS – CAUSES SEXUAL DYSFUNCTION, STERILITY, INFERTILITY

Harmful Physical Agents

- Heat
- Noise
- Vibrations
- Ionizing radiation
- Non-ionizing radiation

GHS Health Hazards

- Health Hazards
  - Acute Toxicity
  - Skin Corrosion/Irritation
  - Serious Eye Damage/Eye Irritation
  - Respiratory or Skin Sensitization
  - Germ Cell Mutagenicity
  - Carcinogenicity
  - Reproductive Toxicity
  - Target Organ Systemic Toxicity – Single and Repeated Dose

Health Hazards Classifications

Hazard Class	**Hazard Category**			
Acute Toxicity	1	2	3	4
Skin Corrosion/Irritation	1A	1B	1C	2
Serious Eye Damage/ Eye Irritation	1	2A	2B	
Respiratory or Skin Sensitization	1			
Germ Cell Mutagenicity	1A	1B	2	
Carcinogenicity	1A	1B	2	
Reproductive Toxicity	1A	1B	2	Lactation
STOT –Specific Target Organ Toxicity - Single Exposure	1	2	3	
STOT – Repeated Exposure	1	2		
Aspiration	1			
Simple Asphyxiants	Single Category			

GHS Physical Hazards

- Physical Hazards
  - Explosives
  - Flammability – gases, aerosols, liquids, solids
  - Oxidizers – liquid, solid, gases
  - Self-Reactive
  - Pyrophoric – liquids, solids
  - Self-Heating
  - Organic Peroxides
  - Corrosive to Metals
  - Gases Under Pressure
  - Water-activated flammable gases

Physical Hazards

Hazard Class	Hazard Category						
Explosives	Unstable Explosives	Div 1.1	Div 1.2	Div 1.3	Div 1.4	Div 1.5	Div 1.6
Flammable Gases	1	2					
Flammable Aerosols	1	2					
Oxidizing Gases	1						
Gases under Pressure Compressed Gases Liquefied Gases Refrigerated Liquefied Gases Dissolved Gases	1						
Flammable Liquids	1	2	3	4			
Self-Reactive Chemicals	Type A	Type B	Type C	Type D	Type E	Type F	Type G
Pyrophoric Liquids	1						
Pyrophoric Solid	1						
Pyrophoric Gases	Single category						
Self-heating Chemicals	1	2					
Chemicals, which in contact with water, emit flammable gases	1	2	3				
Oxidizing Liquids	1	2	3				
Oxidizing Solids	1	2	3				
Organic Peroxides	Type A	Type B	Type C	Type D	Type E	Type F	Type G
Corrosive to Metals	1						
Combustible Dusts	Single Category						

Routes of Entry

Dermal or Skin

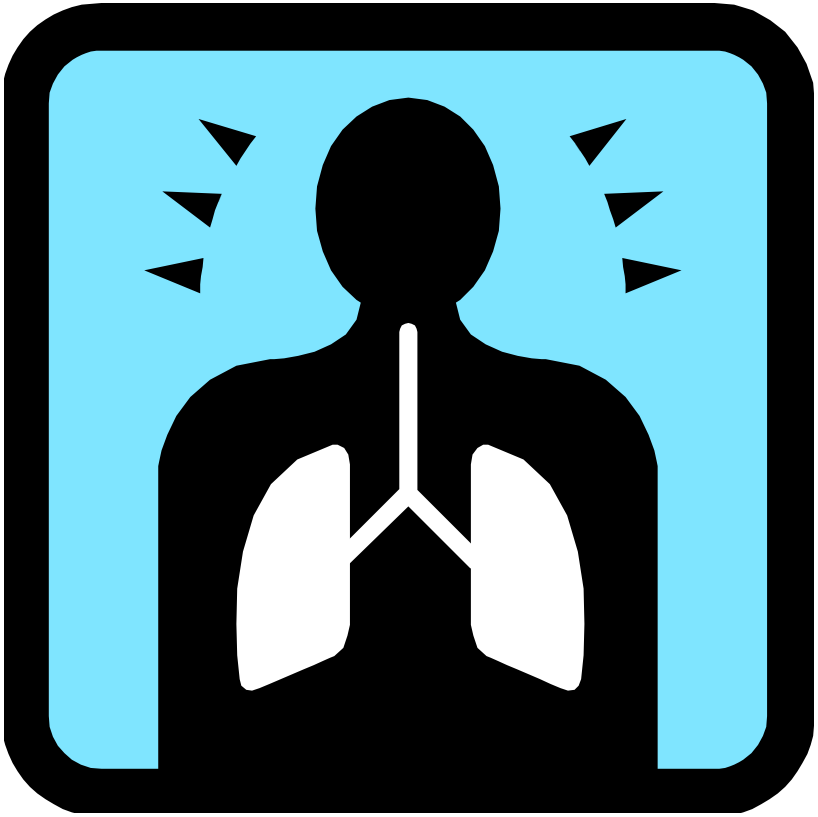
- Absorption
- Direct contact
- Open wound

Inhalation

- Throat and lungs

Ingestion

- Mouth / gastrointestinal tract



Safety Data Sheets

Manufacturer's recommendations on how to use the chemical safely

All chemicals should have an SDS available. Each time a new chemical is acquired, it must be added to the SDS binder located in each custodial office.

Safety Data Sheet (SDS)

- Now called Safety Data Sheets
- 16 sections, standard format

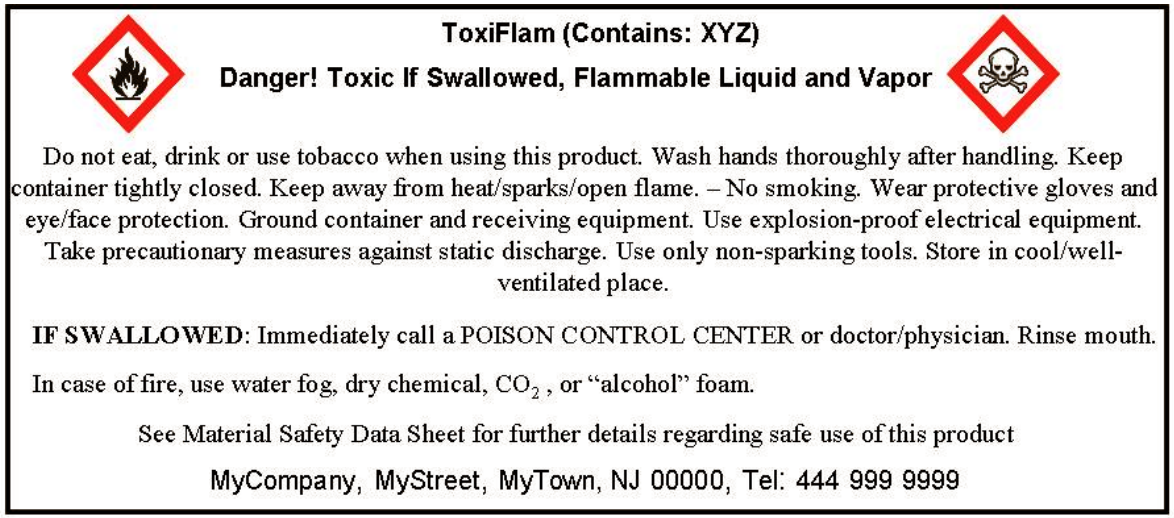
Safety Data Sheet Format

1. Identification of the substance or mixture and of the supplier
2. Hazards identification
3. Composition/information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information, including date of preparation or last revision


H
F
PE
DATE


UTYL ACETA
n-BUTYL ACETATE
WARNING!
MAY BE POISONOUS IF INHALE
ROUGH SKIN. CAUSES IRRITAT
t, sparks, and flame. Avoid conta
breathing vapor. Keep in tightly
uate ventilation. Wash thoroughl
ENTS: Contact with skin or eyes may
pors may cause depression, dizzine
ause narcosis. Prolonged exposure
If swallowed, if conscious, give mil
ove to fresh air. If not breathing,
oxygen. In case of contact, immedia
es. Flush skin with soap and water.
alth and safety information.

Labels



ToxiFlam (Contains: XYZ)

Danger! Toxic If Swallowed, Flammable Liquid and Vapor

Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. – No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO_2 , or "alcohol" foam.

See Material Safety Data Sheet for further details regarding safe use of this product

MyCompany, MyStreet, MyTown, NJ 00000, Tel: 444 999 9999

Sample GHS Label

HazCom – Label Elements: GHS Pictograms

Pictogram Meanings

- Explosives
- Self-Reactives
- Organic Peroxides

Pictogram Meanings

- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides

Pictogram Meanings

- Oxidizers

Pictogram Meanings

- Gases Under Pressure

Pictogram Meanings

- Acute Toxicity (severe)

Pictogram Meanings

- Corrosive

Pictogram Meanings

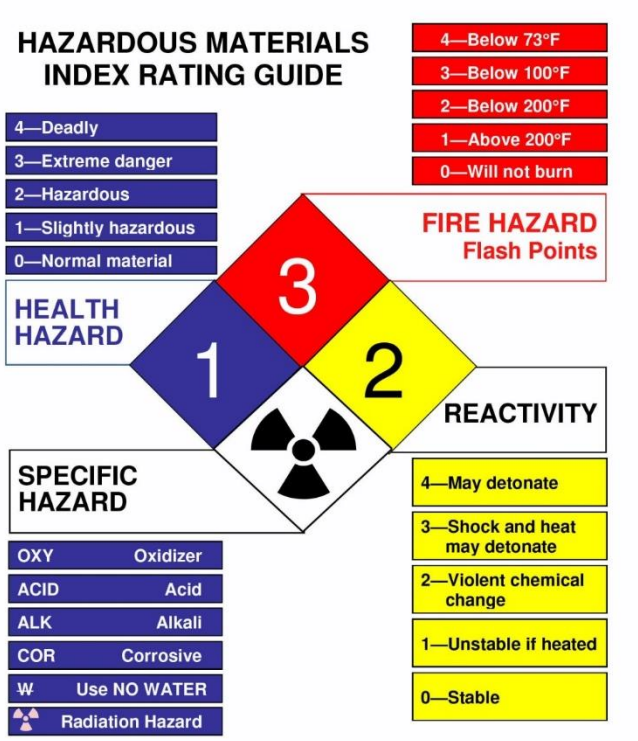
- Irritant
- Dermal Sensitizer
- Acute Toxicity (harmful)
- Narcotic effects
- Respiratory Sensitizer
- Irritation

Pictogram Meanings

- Carcinogen
- Respiratory Sensitizer
- Reproductive Toxicity
- Target Organ Toxicity
- Mutagenicity
- Aspiration Toxicity

NFPA Label

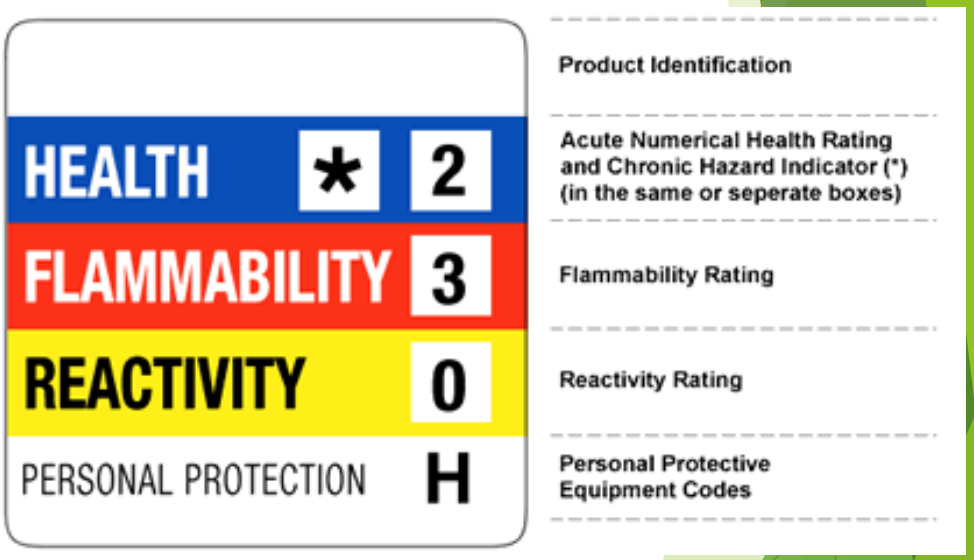
- Blue = Health/Toxicity
- Red = Fire Hazard
- Yellow = Reactivity
- White = Special Information



National Fire Protection Association

Similar color coding and numerical scheme as NFPA label

HMIS Label



4 = Deadly

3 = Severe

2 = Moderate

1 = Slight

0 = No Hazard

Hazardous Materials Identification System

Other Warning Systems v. GHS

NFPA uses 0-4 scales with 4 being most hazardous

HMIS uses 0-4 scales with 4 being most hazardous

GHS uses 1- 4 scales with **1, 1A, or Type A** as most hazardous

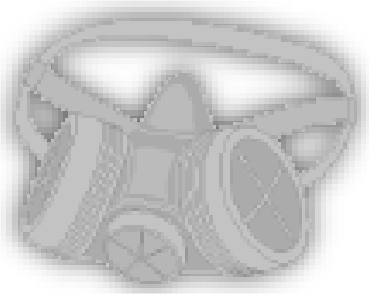
Control or Eliminate the Hazard

- Ventilation - use local exhaust
- Use least toxic solvent/chemical possible
- Use personal protective equipment
- Reduce speed or otherwise dampen noise on equipment
- Employees authorized to conduct Lockout/Tagout must shut off and lock-out all power sources, including electrical, mechanical, hydraulic, and pneumatic, before servicing or maintenance activities are performed on equipment.
- Do not eat or allow food in work areas

Methods of Protection

- Safety Goggles or Glasses
  - Chemical splash goggles – use when handling chemicals
  - Glasses for wood dust, metal shavings
- Gloves
  - Disposable – only use once!
  - Reusable – Heavy duty, clean immediately after use
  - Heat resistant
- Ear Protection
  - Ear plugs
  - Earmuffs

Methods of Protection



Half-face respirator

Dust mask

- If using a half-face respirator, you must comply with the Respiratory Protection Program.
- If using N95/dust mask, user must review and sign “Voluntary User” form.

Emergency Procedures

- Know where eyewash is located
- Immediately report to health office if exposed
- Contact supervisor for spills greater than one gallon

Eyewash Stations

Eyewash Stations

- Eyewashes and emergency showers are secondary items of protection.
- Plumbed eyewashes & showers are to be flushed and recorded once per week (3 minutes minimum).
- Portable eyewash stations are to be checked weekly to make sure they are accessible & fluid hasn't been discharged.

Note: Life of fluid is approximately two years, so…

Check the expiration date!


04/22/20
Bradl
P.O. BOX 309

Hazardous Waste

- Must be labeled as “hazardous waste” with a descriptive name and date
- Paper towels, rags used for stains may be thrown in trash.
- Paper towels, rags used for thinners must be disposed of as hazardous waste.
- Aerosol cans that are empty may be thrown in trash; if there is any product left in an aerosol can it must be disposed of as hazardous waste.
- Latex paint may be thrown in trash if solid (no liquid left).
- Oil-based paints or stains must be disposed of as hazardous waste, regardless of liquid/solid.

Electrical Safety

ELECTRICAL CORDS SHOULD NEVER BE REPAIRED, ESPECIALLY WITH DUCT TAPE

FRAYED OR WORN CORDS SHOULD BE REPLACED

EQUIPMENT SHOULD HAVE A 3-PRONG (GROUNDED) PLUG OR BE DOUBLE INSULATED

Infectious Disease and Bloodborne Pathogens

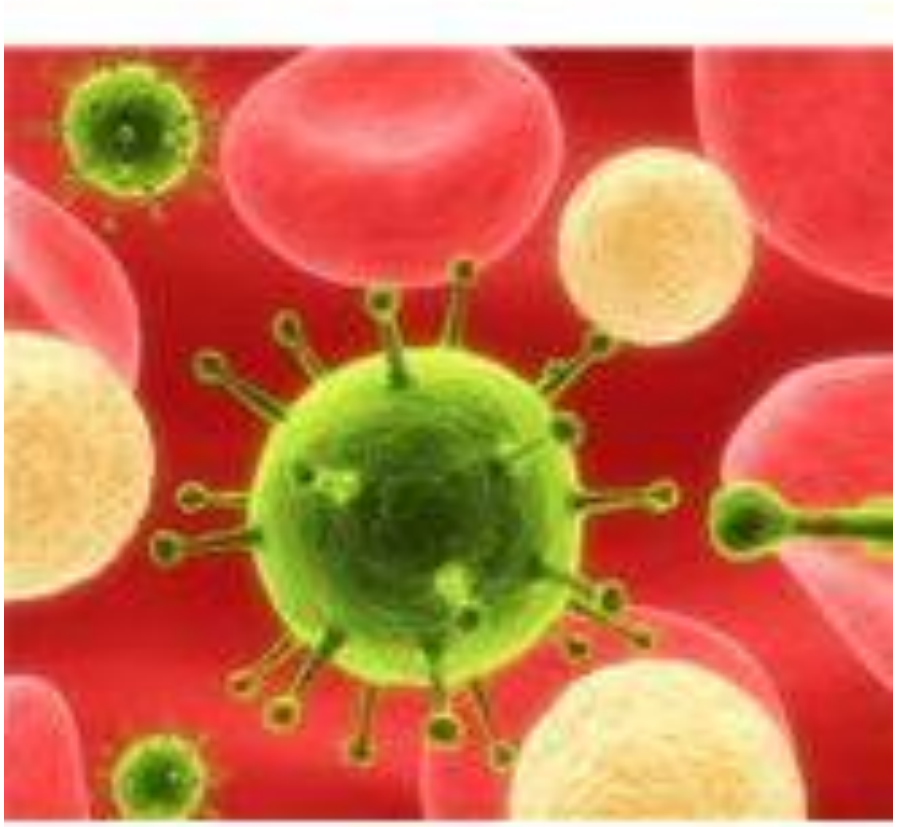
Training

- Offered to all employees covered in district's BBP plan
- Annual

- Includes the following:
  - Background of Standard
  - Activities which may result in exposure
  - Safe work practices/PPE
  - How to handle clean-ups
  - Signs & symptoms of disease
  - Hepatitis B vaccination
  - Post exposure procedures

Purpose of OSHA Standard

- To reduce or eliminate occupational exposure to potentially infectious materials which could cause disease or death
- Designed to protect 5.6 million workers in healthcare and related occupations



Infectious Diseases

A disease caused by a microorganism or other agent, such as a bacterium, fungus, or virus, that enters the body of an organism

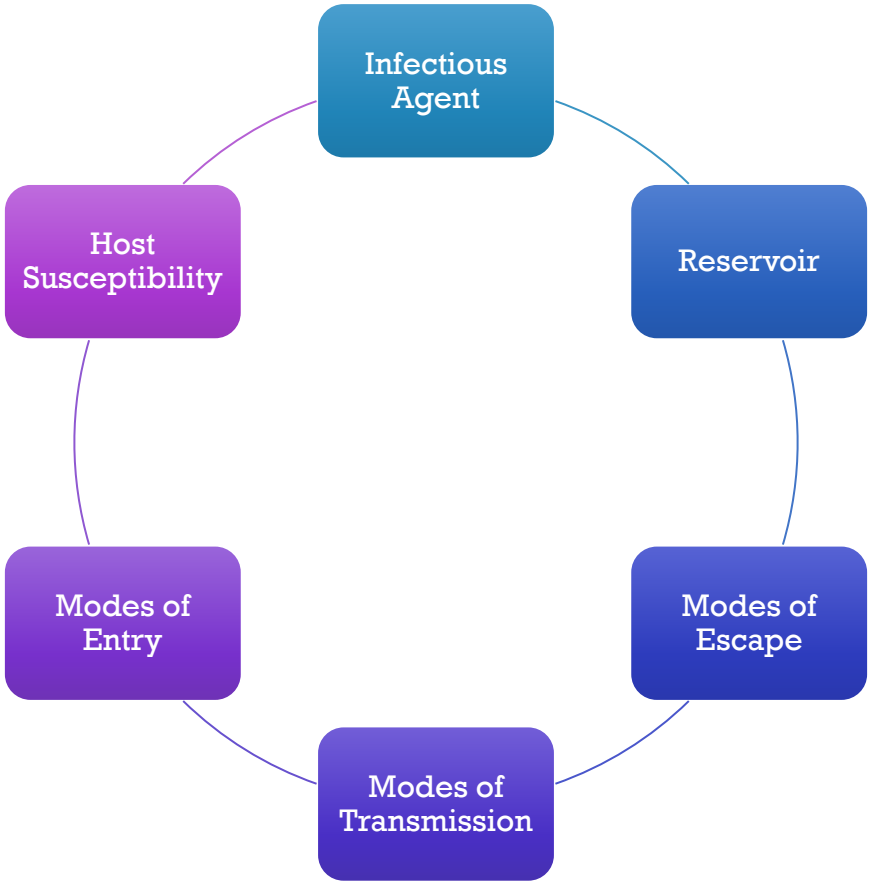
Common Infectious Agents

- **Chicken pox (varicella-zoster virus)**
- **Conjunctivitis (Pink eye)**
- **Influenza (flu)**
- **Head lice (pediculosis)**
- **Human papillomavirus (HPV) (warts)**
- **MRSA (methicillin-resistant staphylococcus aureus)**
- **Pertussis (whooping cough)**
- **Strep Throat**
- **Bloodborne Pathogens**

Infectious Agents Are Spread Through …

- The air, as small droplets
- Contact with feces
- Contact with the skin or mucus membranes (eyes, nose, mouth)
- Blood or other body fluids such as: urine, saliva, breastmilk, semen, and vaginal secretions

The Infection Chain



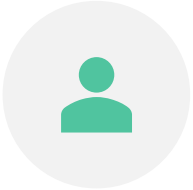
Break The Infection Chain

INFECTIOUS AGENTS –HAZARDOUS BIOLOGICAL MATERIALS THAT PRESENT A RISK OR POTENTIAL RISK TO THE HEALTH OF HUMANS OR ANIMALS.

RESERVOIR – THIS IS WHERE THE DISEASE LIVES INSIDE YOUR BODY.

MODES OF ESCAPE – THIS IS HOW THE DISEASE IS SPREAD FROM THE INFECTED PERSON.

MODES OF TRANSMISSION – THIS IS HOW THE DISEASE MOVES FROM ONE PERSON TO ANOTHER.



MODES OF ENTRY – THIS IS HOW A PERSON BECOMES INFECTED WITH A DISEASE.

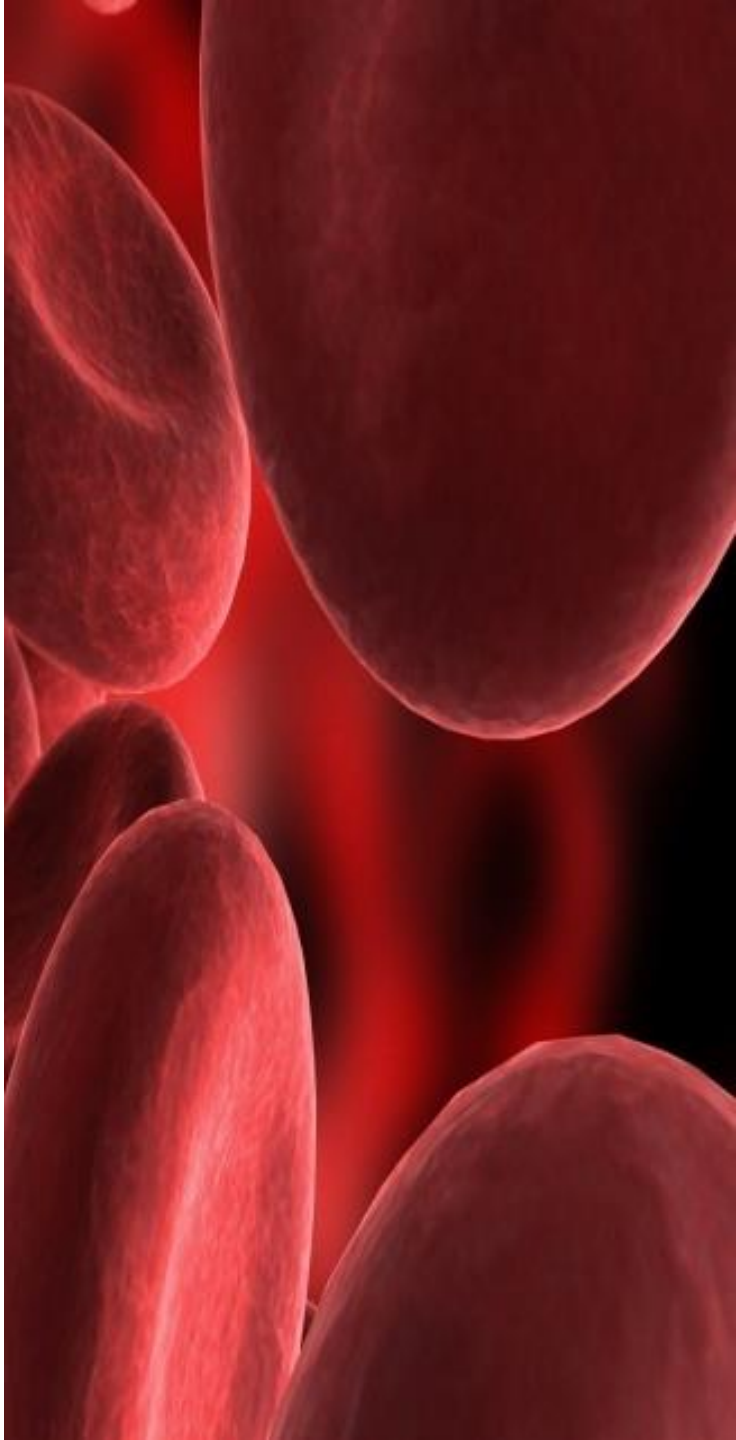
HOST SUSCEPTIBILITY – THIS DEPENDS ON THE INDIVIDUAL'S BODILY REACTION TO THE DISEASE IN QUESTION.

Definition of Bloodborne Pathogen

PATHOGENIC MICROORGANISMS THAT ARE PRESENT IN HUMAN BLOOD AND CAN CAUSE DISEASE IN HUMANS.

THESE INCLUDE :

- **HEPATITIS B (HBV)**
- **HEPATITIS C (HCV)**
- **HUMAN IMMUNODEFICIENCY VIRUS (HIV)**



BBP Program Requirements

- Evaluation of employee activities
- Develop Exposure Control written plan
- Designate a Program Coordinator
  - Maggie Meyer
- Practice Universal Precautions
- Hepatitis B vaccinations and titers
- Post exposure procedures
- Personal protective equipment
- Training
- Annual review
- Recordkeeping

Who is Covered by the BBP Program?

- All employees for whom exposure can be "reasonably anticipated" as part of their normal job duties
- The health care occupation is a primary focus.
- Employer is responsible for evaluating potential for exposure.
- *Excludes Good Samaritan activities*

Typically covered in school districts:

- Nurses
- Health Office Assistants
- Special Education Teachers/Paras
- Coaches/Trainers/Lifeguards
- Custodians
- Transportation Staff
- Playground Assistants
- Early Education/Daycare Staff

Risk of Exposure

Spread of bloodborne pathogens occurs through:

- **Direct Contact** – Infected blood or bodily fluid from one person enters another person's body at a correct entry site.
- **Indirect Contact** – A person's skin touches an object that contains the blood or body fluid of an infected person.
- **Respiratory transmission** – A person inhales droplets from an infected person.
- **Vector-borne transmission** – A person's skin is penetrated by an infectious source.

Examples of Bloodborne Pathogens

1

HIV

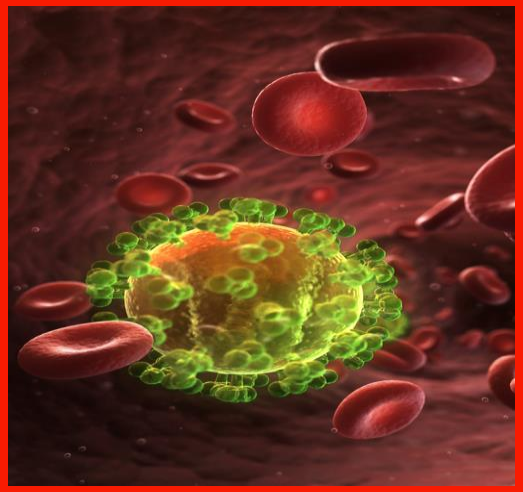
2

Hepatitis B (HBV)

3

Hepatitis C (HCV)

HIV/AIDS



- Human Immunodeficiency Virus
- Acquired Immunodeficiency Syndrome
- Over time, HIV attacks and weakens the immune system.
- This increases the chance for opportunistic infections.
  - This stage of the disease is classified as AIDS.
- There is no known cure for HIV or AIDS.
  - Medications can be used to slow progression of the disease.
  - People can typically live full lives.
- The CDC estimates 1.2 million Americans are living with HIV.
- As of December 31, 2020, 9,422 persons are assumed alive and living in Minnesota with HIV/AIDS.

Symptoms of HIV

Early Stage

40%-90% of people have flu-like symptoms

- Fever
- Chills
- Rash
- Night sweats
- Muscle aches
- Sore throat
- Fatigue
- Swollen lymph nodes
- Mouth ulcers

Symptoms of HIV vary depending on the stage of the disease

Clinical Latency Stage

Individuals experience no symptoms to mild ones

Progression to Aids

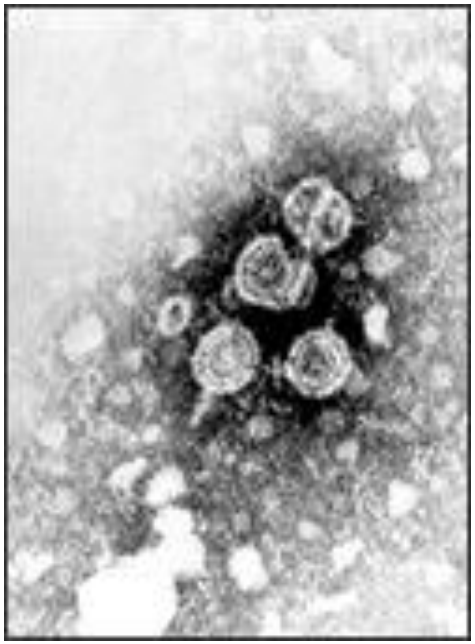
- Rapid weight loss
- Recurring fever or profuse night sweats
- Extreme an unexplained tiredness
- Prolonged swelling of the lymph glands
- Diarrhea that lasts more than a week
- Sores
- Pneumonia
- Memory loss, depression, and other neurologic disorders

Living with HIV/AIDS in MN

- As of December 31, 2020, 9,422 people assumed alive and living in MN with HIV/AIDs
  - 5,247 living with HIV infection
  - 4,175 living with AIDs

Hepatitis B Virus (HBV)

- Attacks liver
- 6-10% of people infected after age five become chronic
- Death occurs in 15-25% of chronically infected people
- Vaccine preventable
- Virus is only killed by high-level bactericides

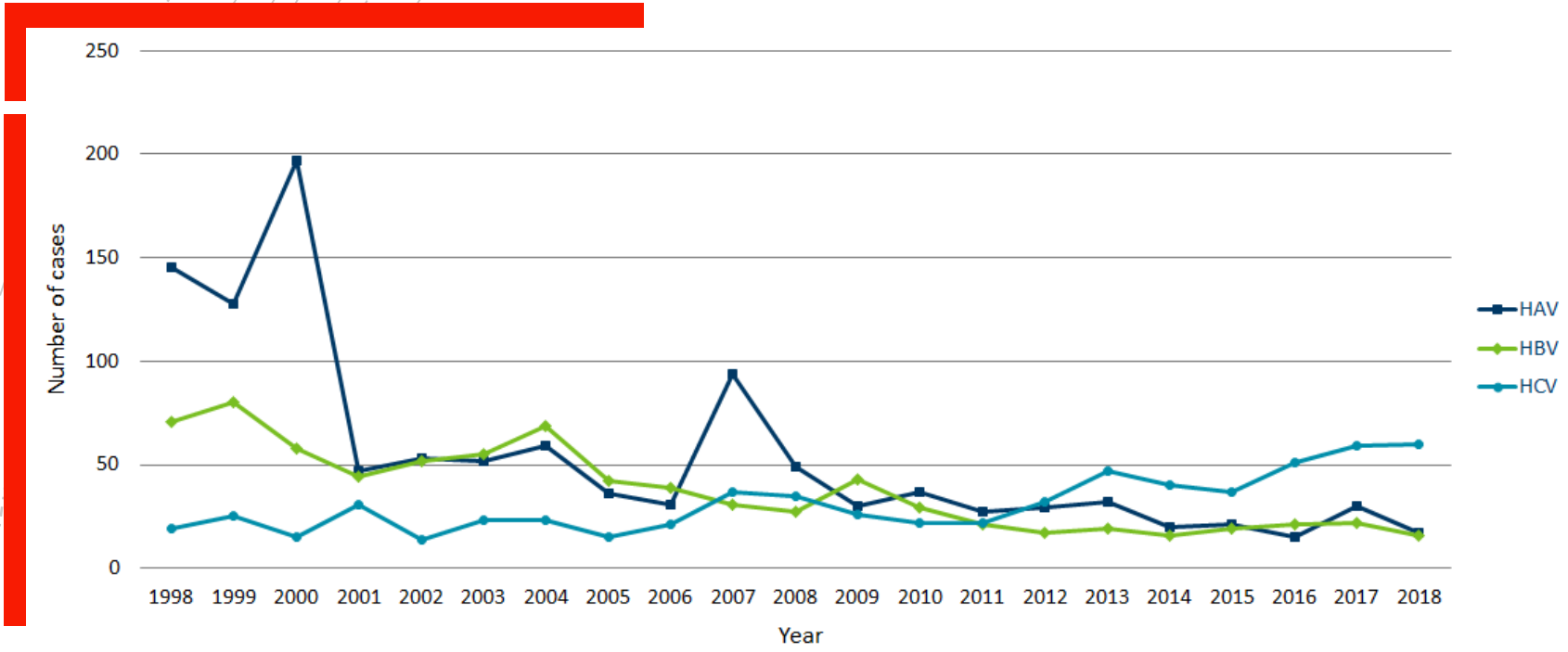


From the Public Health Image Library – Center for Disease Control and Prevention

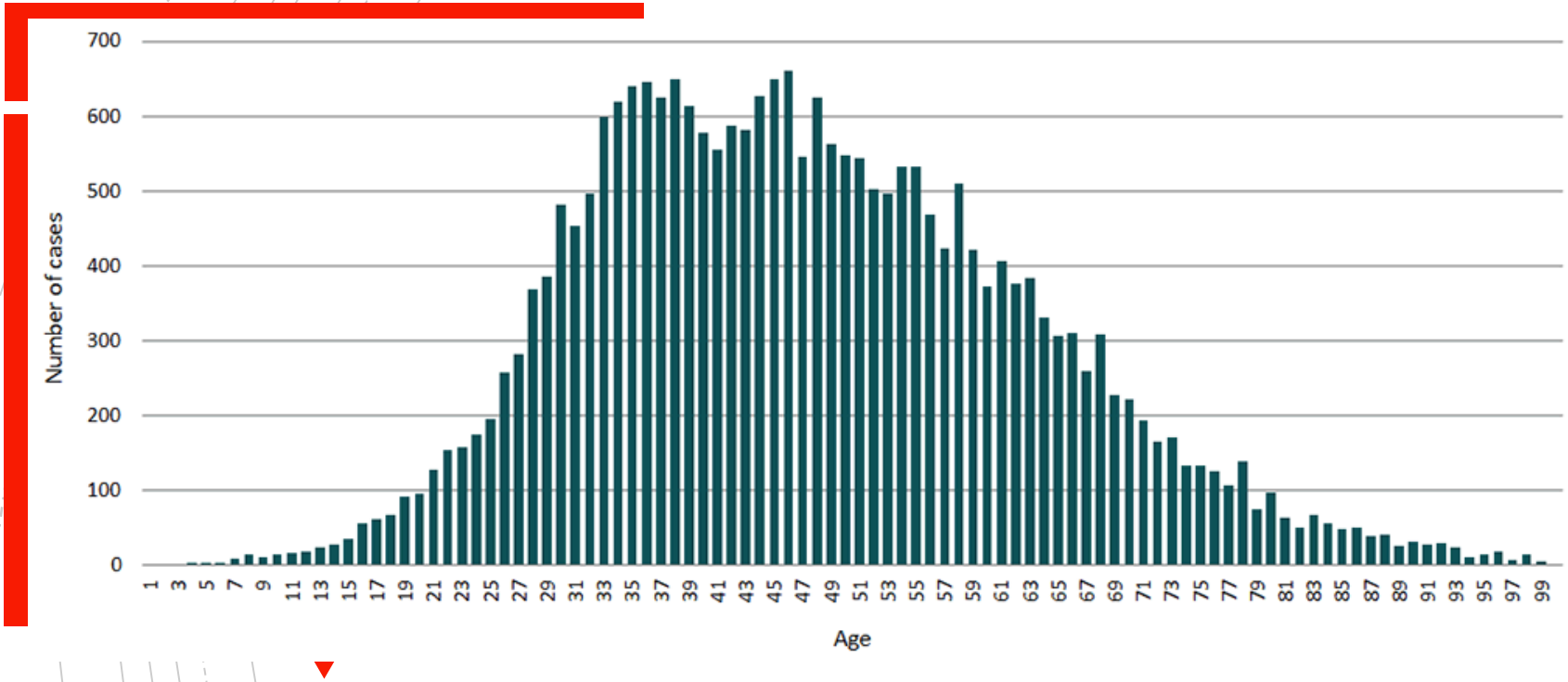
Symptoms of Hepatitis B

- Weakness or Fatigue
- Possible stomach pain
- Joint Pain
- Loss of appetite
- Nausea
- Jaundice
- Darkened urine
- Sometimes asymptomatic (~30%)

Number of Acute Cases per Year, 1998-2018



Persons with Chronic HBV in MN by Age, in 2018

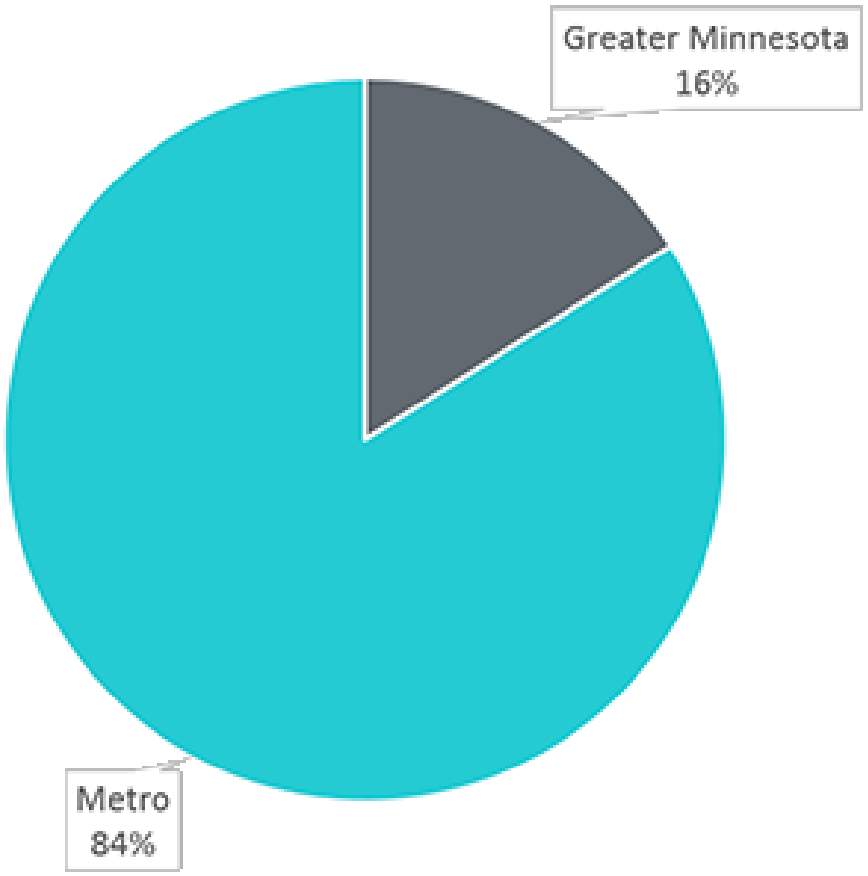


Hepatitis B Statistics

As of December 31, 2018, there are 25,335 people in MN living with chronic HBV.

2018

Persons with HBV by location



Hepatitis B Vaccination

- Three injections in deltoid muscle
- Mild to no side effects
- Produces only one antibody
- Vaccine has been available since 1982

Hepatitis B Vaccination

- 95% effective when all doses taken
- **Series of three injections**
- Vaccination Schedule
  - Initial
  - One month after initial
  - Four to six months after initial

Hepatitis C (HCV)

Attacks liver

No vaccine

50-55% develop chronic liver disease

Treatment with interferon but has side effects

Person is at risk if they had a blood transfusion before 1992 and/or was an IV drug user.

Symptoms of Hepatitis C

80% of carriers are asymptomatic and may be for 20-30 years.

Fatigue

Weight loss

Nausea

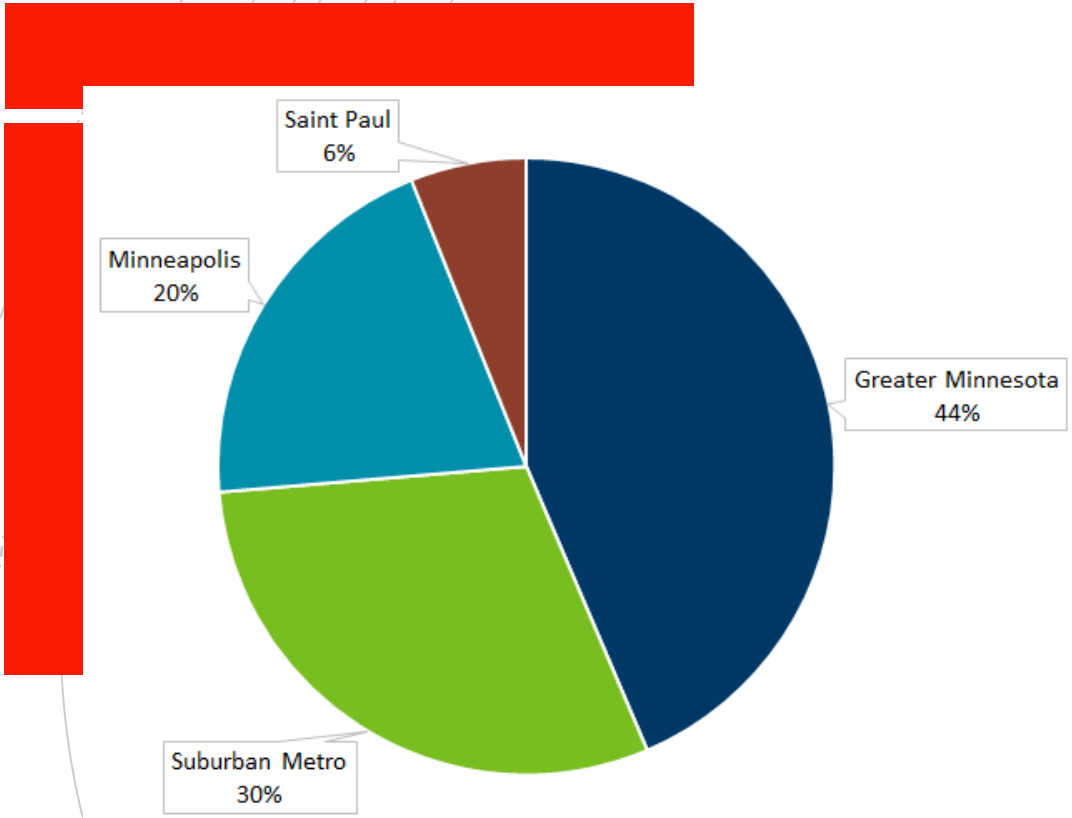
Depression

Hepatitis C Statistics

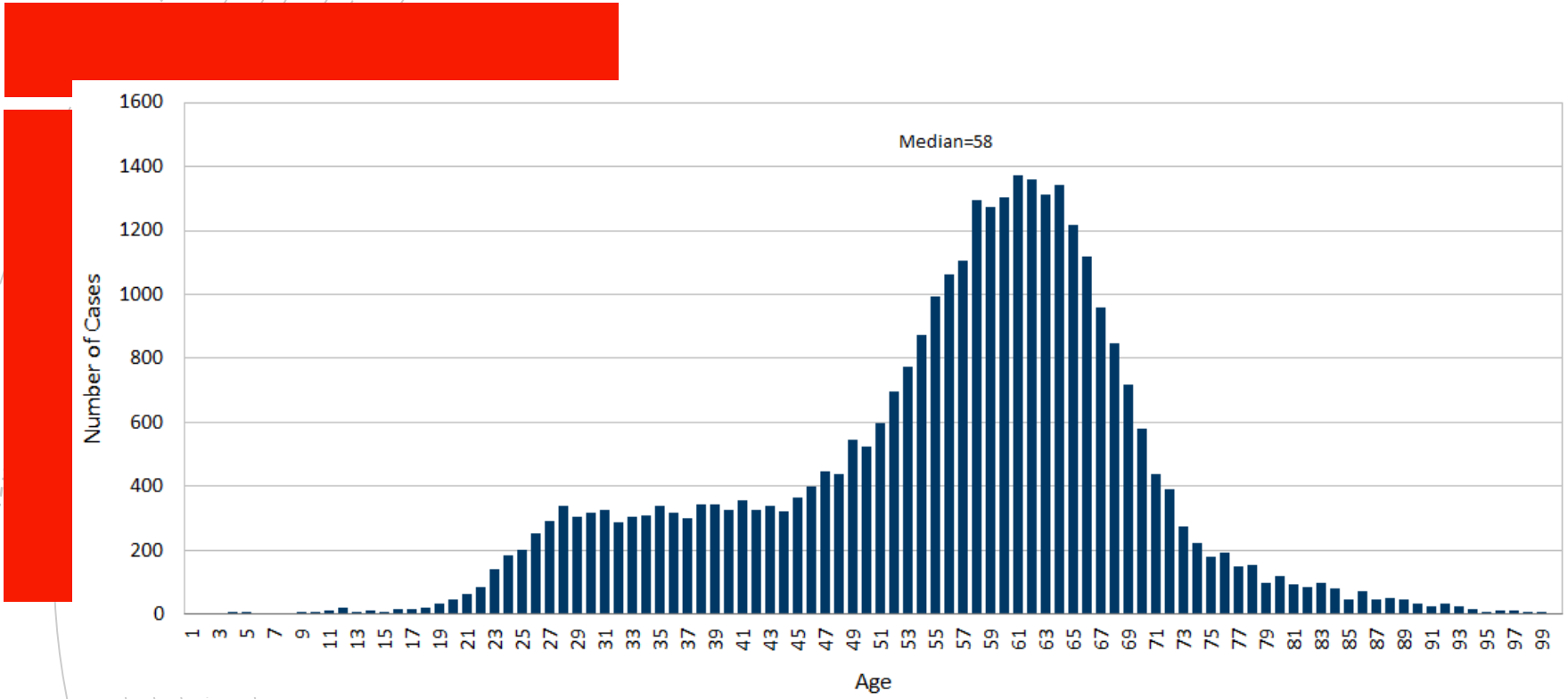
Most new cases are from intravenous drug use

As of December 31, 2018, there are 35,856 people alive and living in MN with Hepatitis C

Persons with Chronic HCV by Location, in 2018



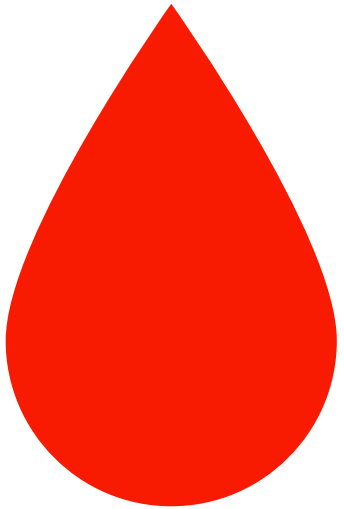
Persons with Chronic HCV by Age, in 2018

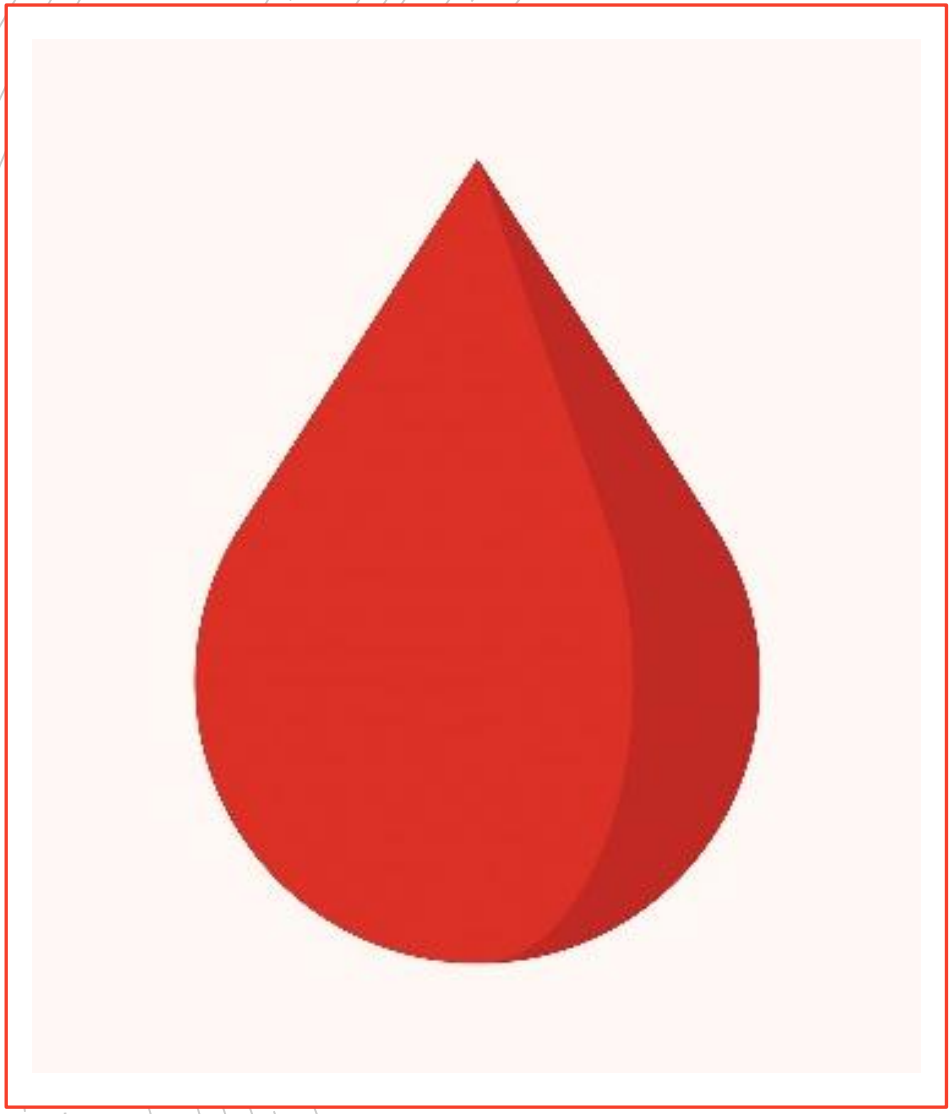


BBP's are not spread by . . .

- Urine
- Feces
- Air
- Food
- Water

… unless they contain blood or bodily fluids that are contaminated





Infectious Body Fluids

- Blood
- Serous fluid
- Semen
- Vaginal secretions
- Saliva (in dental procedures when blood is present only)

Common Occupational Transmissions

- Needle-sticks
- Contaminated sharps/glass/ceramics
- Mucous membranes (eyes, nose, mouth)
- Open wound that is exposed to someone else's blood (includes skin rash, dermatitis broken cuticles, cuts, etc.)

It's important to discuss job responsibilities up front, prior to starting work!

Universal Precautions

All human blood and certain human body fluids are treated as if known to be infected with HIV, HBV, HCV, and other bloodborne pathogens.

This should be applied for non-bloodborne pathogens, too!

Engineering Controls - Sharps

Sharps containers

- Closable
- Puncture resistant
- Leak proof
- Labeled or color coded

Determine sharp disposal method

- Use licensed contractor
- Deliver to local hospital
- Mail-in systems

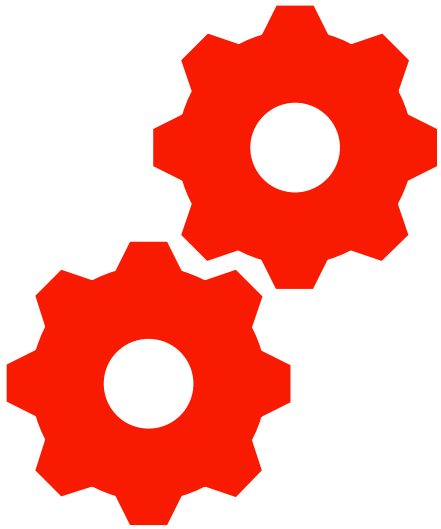
Administrative Controls

- No food or application of cosmetics in the area where blood or other body fluids are present!
- Direct victims in self-care, whenever possible
- Hand-washing facilities

District's Exposure Control Plan

Employees at risk to exposure are eligible to receive the Hepatitis B vaccine series at the school district's expense.

- Fill out the Consent or Decline form
- Only necessary to have Hepatitis series vaccine once; it lasts a lifetime
- ✓ There is a box to check if you already have received the vaccine.



Hand-washing

- **Use warm water only**
- **Apply liquid soap to palms first**
- **Lather well; spread lather to back of hands and wrists**
- **Scrub for at least 15 seconds, including fingernails and area between fingers**
- **Rinse well & dry completely**
- **Turn off faucet using disposable towels**

Personal Protective Equipment (PPE)

- **Possible PPE needed for protection from Bloodborne Pathogens:**
  - **Gloves -** *latex alternative*
  - **Smock/aprons**
  - **Eye protection**
  - **Paper face masks**
  - **CPR masks**
  - **Face shields**
  - **Booties**

Gloves

- Don prior to contact with blood
- Check for proper fit
- Check for punctures
- Wash hands before/after
- Pull snug to insure good fit
- Peel off from wrist to fingers
- Dispose of in waste container
- Do NOT reuse
- Wash Hands

PROPER GLOVE DONNING

PROPER GLOVE REMOVAL

First Aid Procedures

- Use personal protective equipment
- Instruct injured person on self-care
- Wash hands thoroughly
- Report if required by district

NOTE: If the employer has people trained in first aid, then adequate first aid supplies must be readily available for use.

Cleaning Procedures

Use disposable gloves & eye protection

Use disposable towels to absorb spill

Clean spill area with soap and water

Use proper disinfectant

Allow to air dry (5-15 minutes)

Dispose of waste (including disposable gloves) in proper container

CONTACT CUSTODIAL STAFF FOR CLEAN UP WHENEVER POSSIBLE!

Clean-up Response

Positions with clean up assigned as part of their job duties:

- School Custodian
- School Health Associate or Nurse

Disinfectants

- High level commercial germicides
  - Products effective against HBV and HIV are approved by EPA
  - Follow label instructions
    - PPE
    - Disposal
    - Kill time

- EPA - List D - Primary Registrants on National Antimicrobial Information Network:

https://www.epa.gov/sites/production/files/2018-01/documents/2018.04.01.list_d.pdf

What is an Exposure?

- Blood contact with mucous membranes (eyes, nose, mouth)
- Blood contact with broken skin
- Dermatitis, cuticles, cuts
- Piercing mucous membranes or skin
- Needle sticks, bites, cuts

Post-Exposure Procedures

For Exposed Individuals:

- Wash exposed area thoroughly (up to 15 minutes)
- Report incident to supervisor ASAP
- Fill out internal paperwork as necessary (First Report of Injury/Sharps Injury Log)
- Proceed to local health care provider for exam and follow-up
- Identify source individual
- Blood test for source individual (if authorized)
- Blood test for exposed individual (if authorized)
- Findings & diagnosis confidential
- Treatment and counseling by physician (if indicated)

Medical	Duration of employment + 30 years
Sharps Log	Five years beyond completion of that calendar year
Training	Three years
Exposure Incident	Duration of employment + 30 years

Recordkeeping

Questions?

If you have any questions regarding this training or any other health and safety topic, please contact:

John Schaefer with IEA at

507-401-6510, or
john.schaefer@ieasafety.com

Don't forget the quiz – link is on the next page

Link to the Required Quiz

https://forms.gle/7FbYgg7Axw2JtQQW6