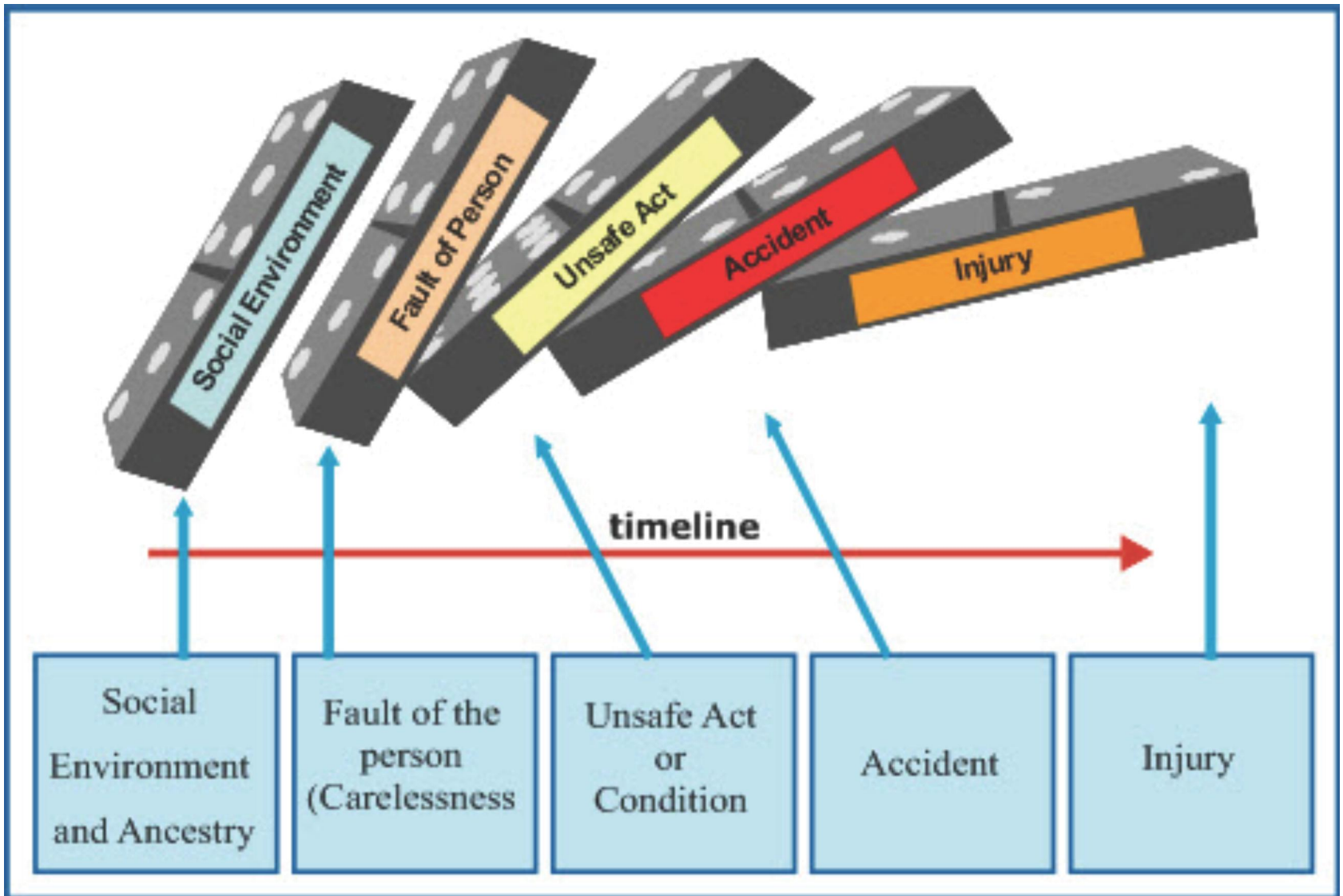


# Definitions

- Accidents – undesirable, unplanned, uncontrolled and unexpected event that can cause injury to workers and damage to properties
- Injury – harmful condition sustained by the body as a result of an accident
- Fatal injury – death occurring up to a year after accident
- Major injury – type of harm which causes permanent or prolonged impairment of the body

# Heinrich

- 90% of accidents do not cause any injury (near misses)
- Determine and eliminate the causes of near misses to avoid accident



# Heinrich

Domino or sequential theory:

*“ The natural culmination of a series of events or circumstances . . . . , one is dependent on the other and one follows another, thus constituting a sequence that may be compared with a row of dominoes placed or end and in such alignment in relation to one another that the fall of the first domino precipitates the fall of the entire row ”*

# Heinrich

- Accident prevention programs can be worked out by removing one of the factors that lead up to it

# Factors portrayed as dominoes:

- Ancestry and social environment
- The fault of the person
- Unsafe act or unsafe mechanical or physical environment
- The accident
- The injury

# Immediate causes of accident

1. Unsafe act (behavioristic)
  2. Unsafe condition (environmental)
- General perception – 90% of accidents are related to unsafe acts and 10% due to unsafe conditions
  - Reality – 70% of accidents could have been prevented by management action

# Unsafe Act

- Any act of the part of a person which will increase his or her chances of having an accident
- Many workers take unnecessary risks on the job because they believe they will not have an accident – it can't happen to me
- Negative reinforcement – e.g. drivers who violate traffic rules  
They have been 'rewarded' for unsafe driving behavior in two ways:
  1. They have achieved whatever their goal was
  2. They have had no accidents and are thus still alive



# To determine unsafe act

- What did someone do or fail to do?
- Was the injured employee following procedure?
- What specific task need to be eliminated or added to prevent a recurrence?

# Commonly Found Unsafe Acts

- Using broken or defective hand tools
- Not wearing the prescribed PPE
- Not following safety procedures or obeying safety rules
- Poor housekeeping practices on the part of the worker around the workplace
- Careless attitudes and ignorance

# Unsafe Act

- Workers were not properly trained or motivated by their supervisors
- Certain actions in some situations will increase chances of accidental injuries

# Unsafe Condition

- Condition within the working environment which increases the worker's chances of having an accident
- Greatest contributors of unsafe conditions are the actions of the employees themselves
- Unsafe condition:
  1. Mechanical and physical condition of the equipment (unguarded moving parts)
  2. Condition of the walking and working surfaces
  3. Illumination, ventilation, sound, vibration, toxic fumes etc.

# Categories of Unsafe Condition

- The action or inaction of the workers at the workplace
- The deterioration of tools, machines and equipment due to normal wear and tear
- Poor or inadequately designed tools, machines and operating equipment
- The omission of safety features during the engineering or maintenance of the equipment