

Safety Controls with Dangerous Animals

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Why Talk About Safety?

- Want to reduce deaths and injuries in zoos and aquariums

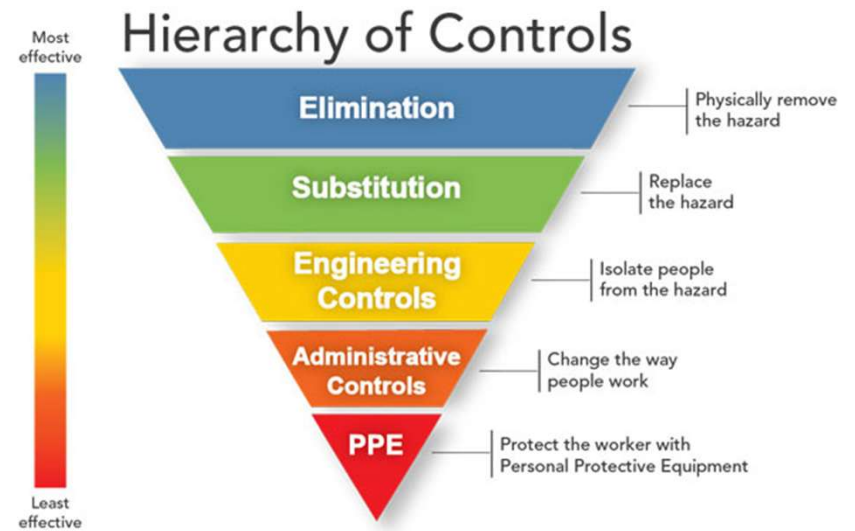
	Humans	Animals	Total
Deaths	8	17	25
Injuries	70	2	72

Study by AZA Safety Committee of deaths and injuries in zoos in the US from 2006-2016.

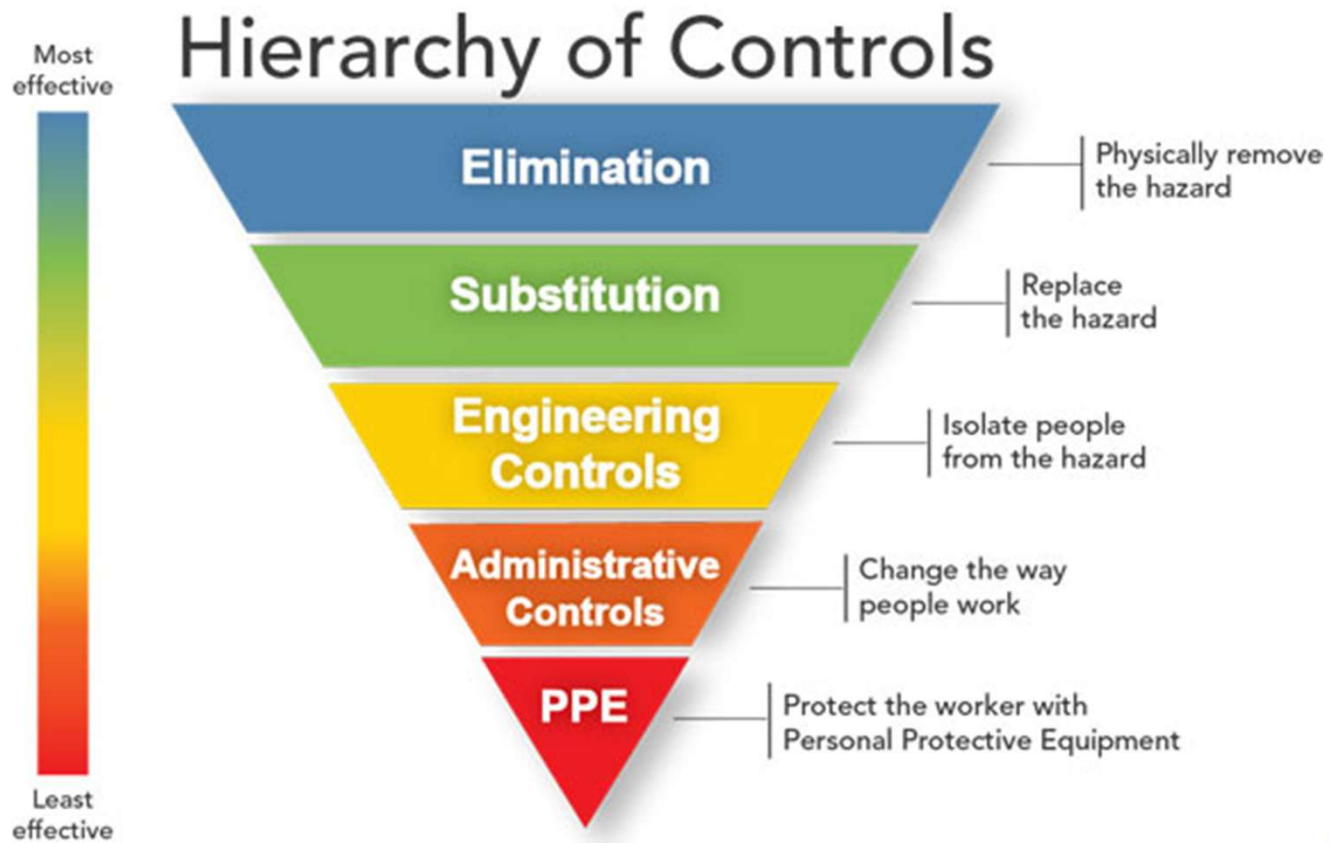


Hierarchy of Controls

- Created by NIOSH (workplace safety) in US
- Used in construction, also aviation and hospitals
- Way to assess and reduce risk to workers



Hierarchy of Controls



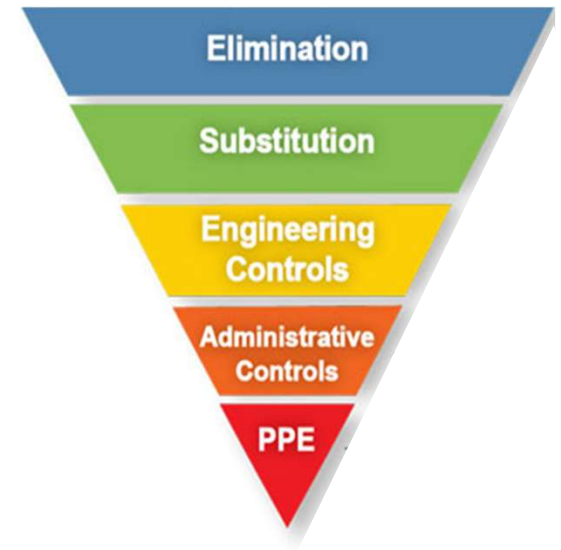
Example: Gorilla

- Gorillas kept in multiple adjacent enclosures
- In one, door handle is very close to mesh
- One female has a habit of stabbing keepers with bamboo when they approach



Step One: Elimination

- Remove threat entirely
- Stop keeping dangerous animals in zoos
- Example: stop giving gorillas bamboo, stop using enclosure near handle



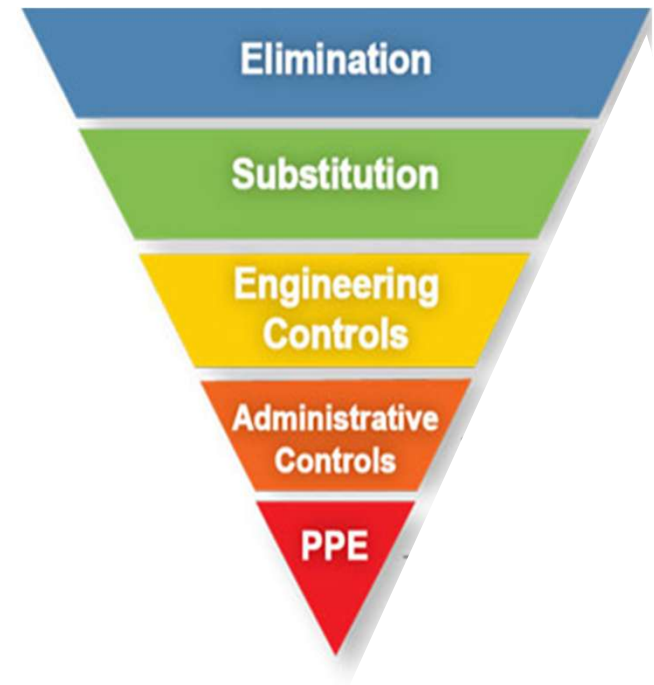
Step Two: Substitution

- Replace the hazard
- Use alternate species that is less dangerous
- Switching free contact with protected contact (sometimes)
- Example: give gorillas a different food/ browse



Step Three: Engineering Controls

- Isolate people from the hazard
- Physical designs to eliminate human error
- Multiple locks/ keys, door systems



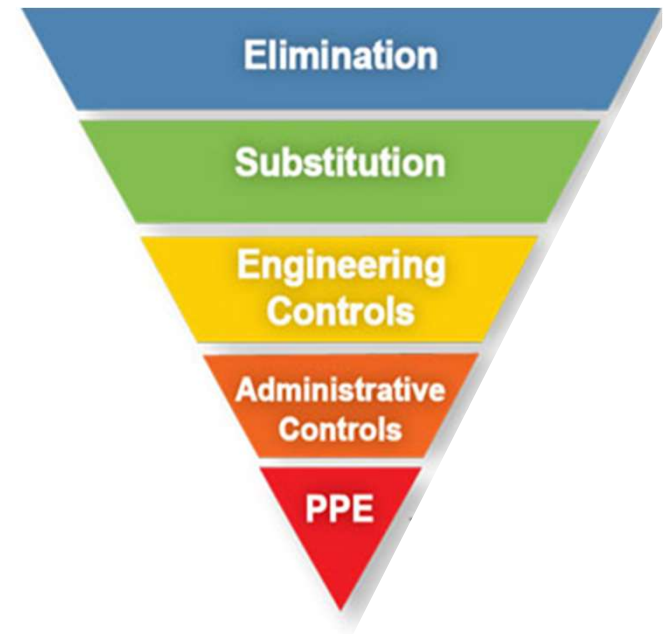
Step Three: Engineering Controls

- Two lock two key
- Lock out tag out
- Example: block openings in mesh with boards/ finer mesh



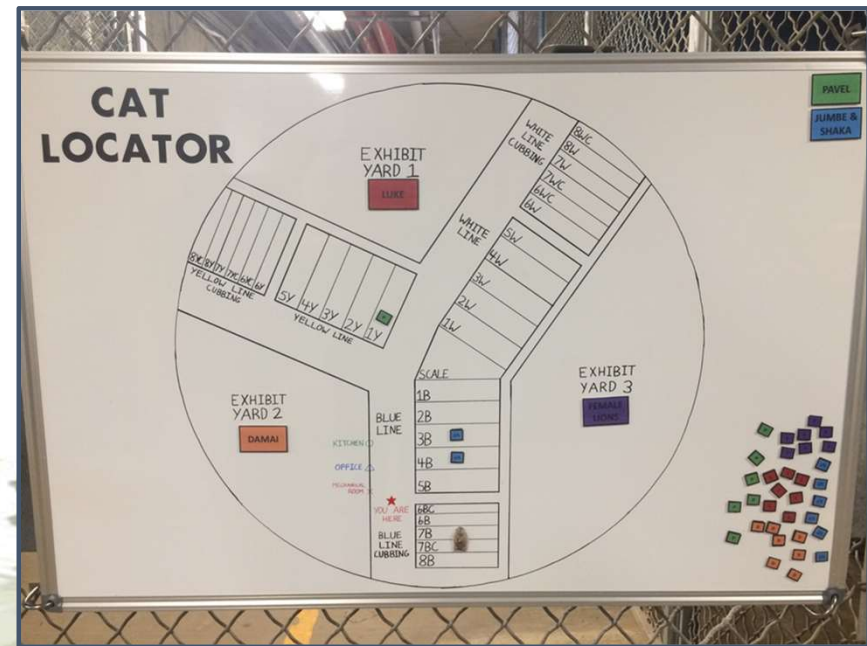
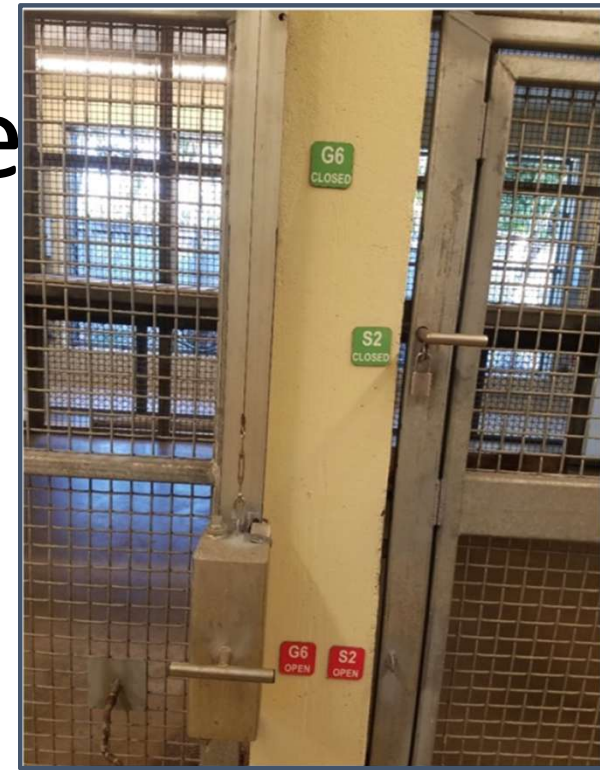
Step Four: Administrative Controls

- Change the way people work
- Policies, protocols, SOPs
- Or, ways to increase awareness
- Human error is always possible
- Bread and butter for zookeepers



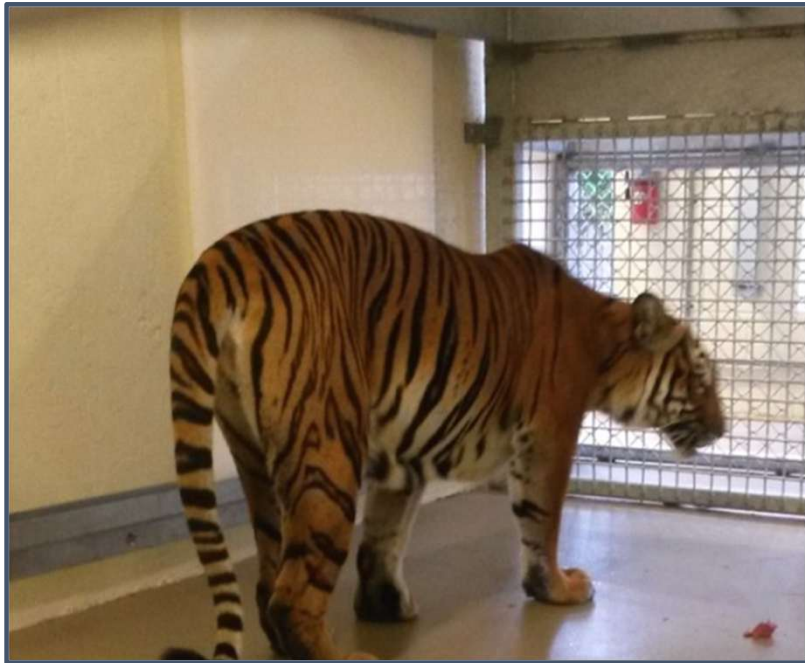
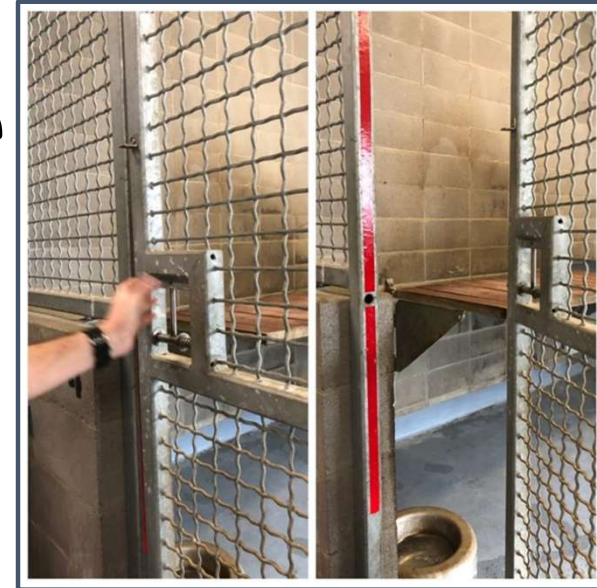
Step Four: Administrative Controls

- Two person lock check protocol
- Counting all animals before entering a yard
- Mirrors, tags, markings
- Example: have second person watch/ distract gorilla



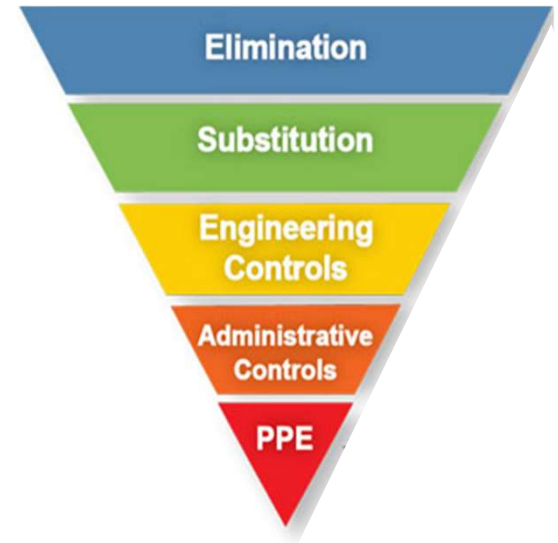
Step Four: Administrative Controls

- Still allows for human error



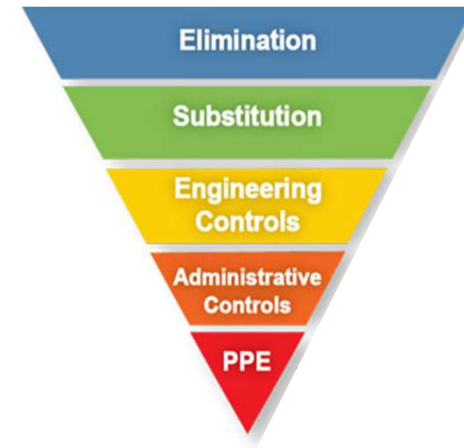
Step Five: PPE

- Protect the worker
- Often not a viable option for dangerous animals
- Leather catch gloves, long clothing, bear spray
- Example: give keeper safety goggles and thick gloves



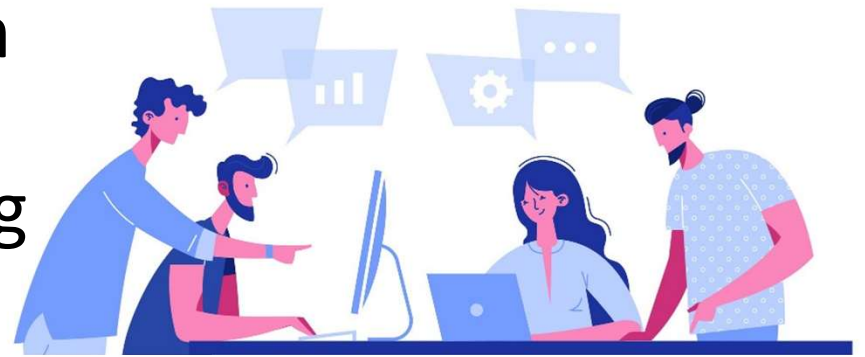
Example: Gorilla

- **Elimination: stop using bamboo/ enclosure**
- Substitution: use different food/ browse
- Engineering controls: block mesh with boards
- Administrative: two people
- PPE: goggles/ gloves



Using the Hierarchy of Controls

- Use reasonable judgement
- Complete safety is never possible
- Consult with many people in your unit/ zoo/ other zoos
- Consider all options, starting from the top



This Presentation

- Sara: Primate Safety
- Theresa: Ectotherms
- Kate and Maggie: Carnivores



Questions?

- Contact: julianok@si.edu or safety@aazk.org

