

Industrial Hygiene

Art, Science or Voodoo?

Presented by:

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Objectives

Attendees Will:

1. Describe what the practice of industrial hygiene is; and
2. Recognize the basic requirements and approach to meet required industrial hygiene program elements

What is Industrial Hygiene?



1:29

The control of occupational health hazards that arise as a result of or during work.

<https://www.youtube.com/watch?v=VlsLoqtep6k>

The Art of Industrial Hygiene

- Skills Needed:

Detective



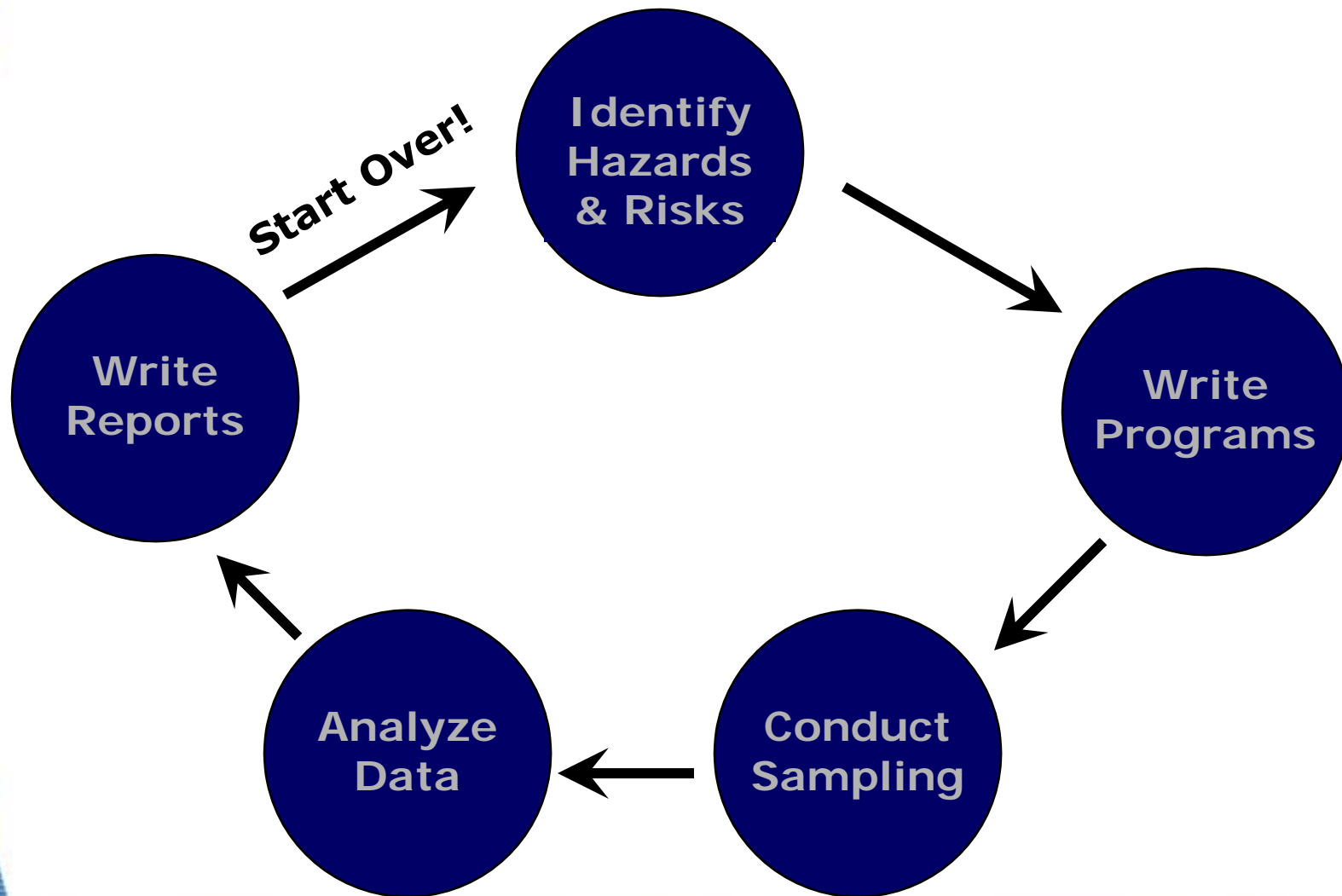
Communicator



Politician



The Basics of an IH Process



1. Identify Hazards & Risks

Acceptable Levels & Regulations



- Company specific guidelines
- Other research or publications



1. Identify Hazards & Risks Chemicals

Health Hazard Assessments

1. Safety Data Sheets (SDS)
2. Employee Interviews
3. Purchasing Dept. Documents or Interviews
4. Process Diagrams (i.e., midstream products)

1. Identify Hazards & Risks

Chemicals

What state do the chemicals exist in?

Vapor: Gaseous form of substances that are normally in the solid or liquid state (at room temp and pressure)

Gas: Material that has very low density and viscosity

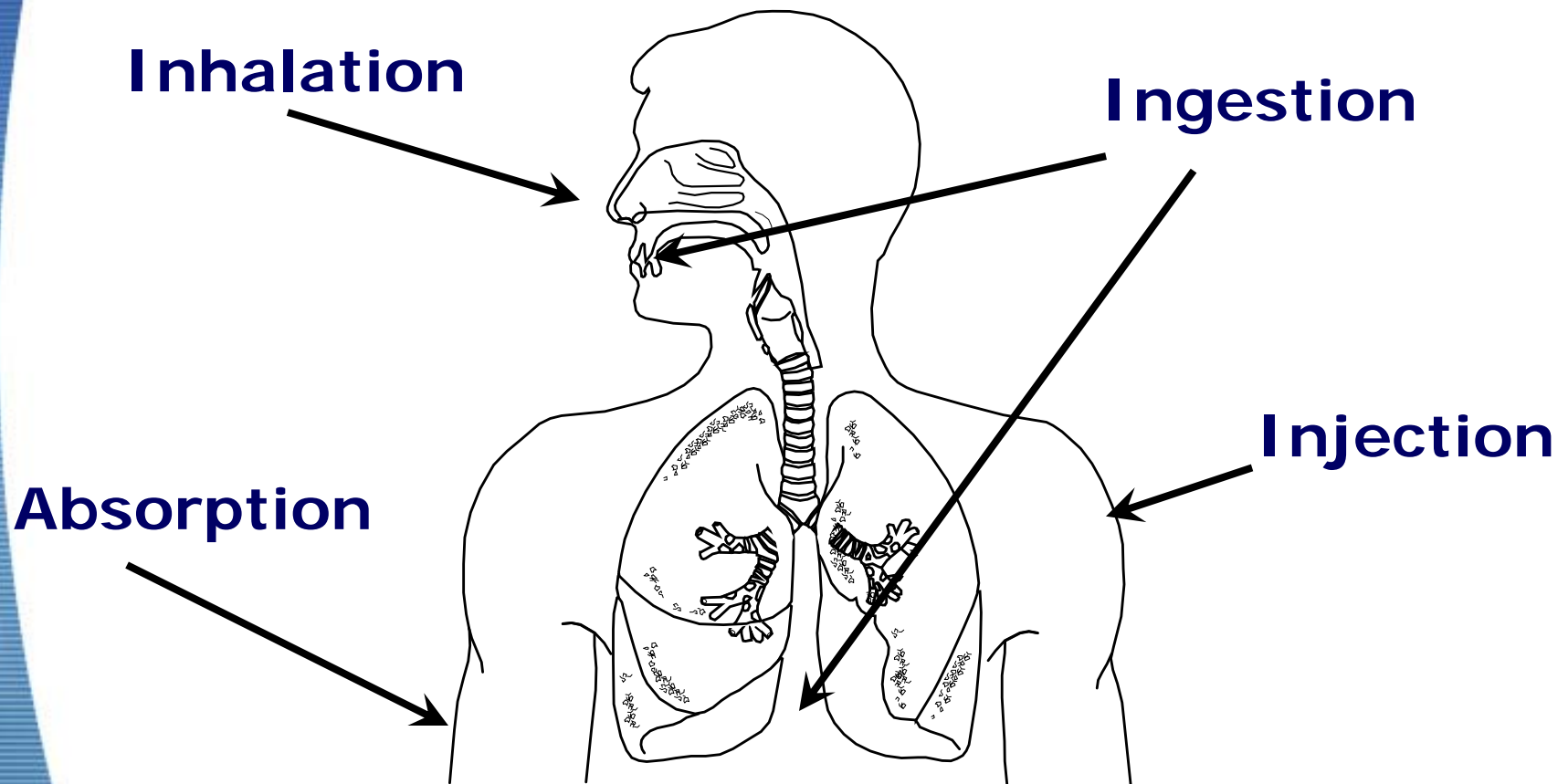
Mist: Suspended liquid droplets generated by condensation from the gaseous to the liquid state. Mist is formed when a finely divided liquid is suspended in air

Dust: Solid particles generated by handling, crushing, grinding of materials. Dusts will settle under the influence of gravity

Fume: Airborne particles formed by the evaporation of solid materials. Example – metal fumes emitted during welding

1. Identify Hazards & Risks

Route of Entry

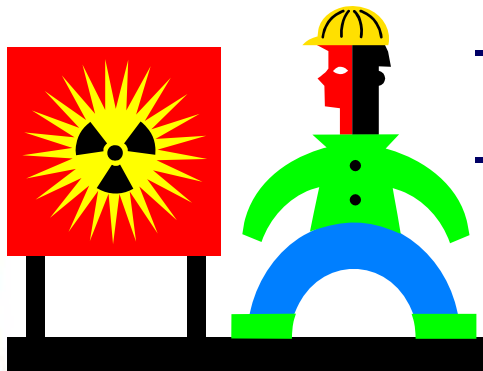


1. Identify Hazards & Risks

Physical Agents



- Physical
 - Noise
 - Vibration
 - Temperature extremes
 - Radiation
 - Pressure extremes
 - Ergonomic stressors



1. Identify Hazards & Risks

Biological Agents



- Viruses
- Bacteria
- Fungus
- Mold
- Parasites
- Any living organism that can cause illness or disease in human beings



1. Identify Hazards & Assess Risk Tasks & Time

- Job Safety Analysis (JSA) or Job Hazard Analysis (JHA)
- Standard Operating Procedures (SOP)
- Daily Reports
- Ask employees

2. Write Programs

- Chemical or Agent Specific
- Purchasing
- Sampling Strategy
- Medical Surveillance
- Where should they be?
 - Safety & Health Manual
 - Process Manuals

2. Written Programs

Chemical or Agent Specific Program

1. Monitoring Strategy
2. Medical Surveillance
 - required by OSHA or company policy
3. Training
 - frequency and content
4. Emergency Testing
 - IH and Medical Surveillance

2. Written Programs

Sampling Strategy Elements

1. Areas where samples will be taken
2. Equipment to be used
3. How the sample will be taken - sampling methods
4. Length of time for sampling
5. Who will conduct sampling
6. Frequency of the sampling

Sampling Pitfalls

- Not doing it
- Not using the right
 - Method
 - Media
 - Equipment
- Not Calibrating

Analysis

- Accredited Laboratory
 - AIHA
- Proper Method
 - OSHA
 - NIOSH
- Chain of Custody

Sampling Results

- Consistent Units
- Can be measured against the Regulations
- Signed off/Verified by Lab Personnel

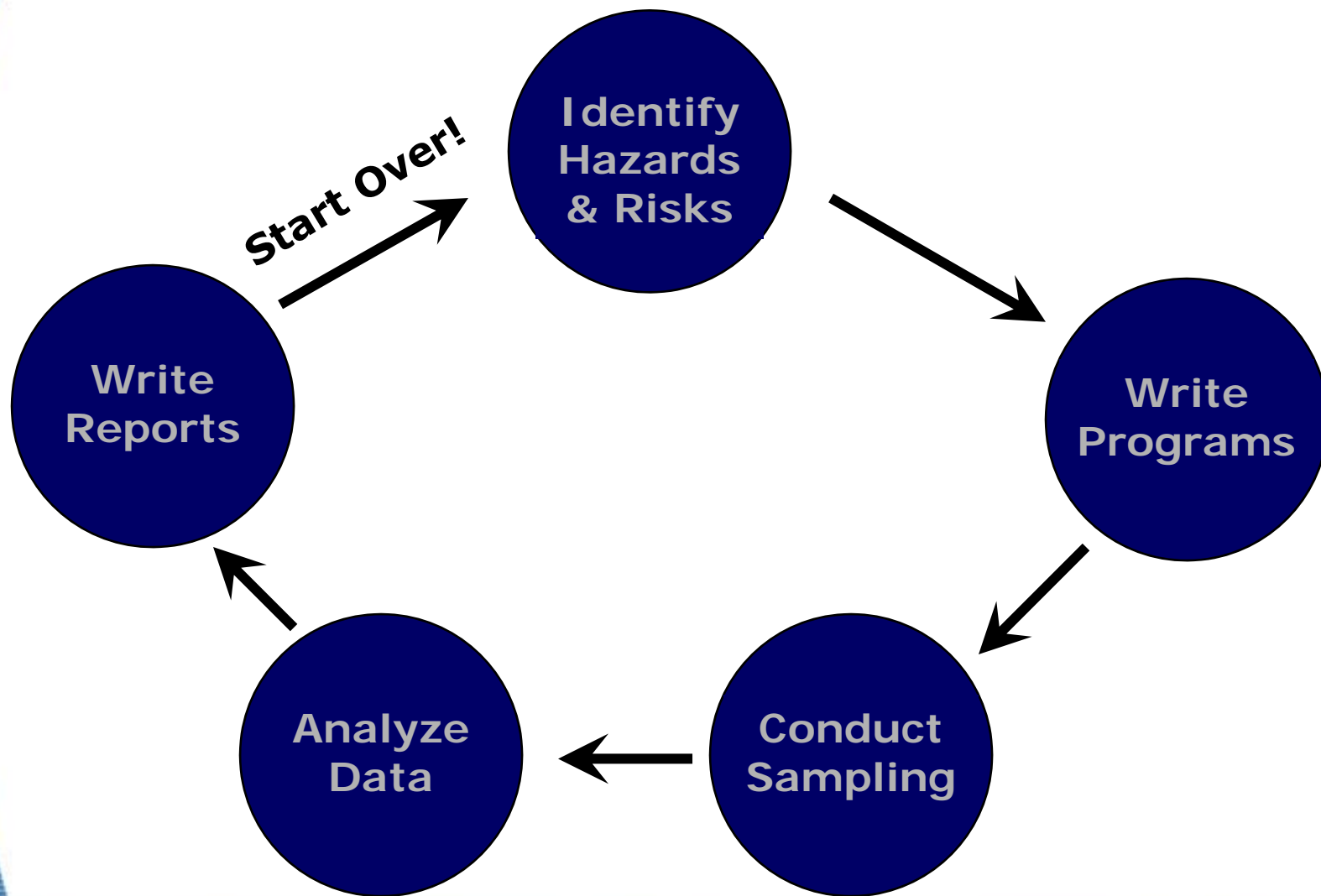


Warning: Check the results!
Labs aren't perfect either.

Communication

- Final Report
- Posting Pages
- Employee Notification
- Employee Meetings

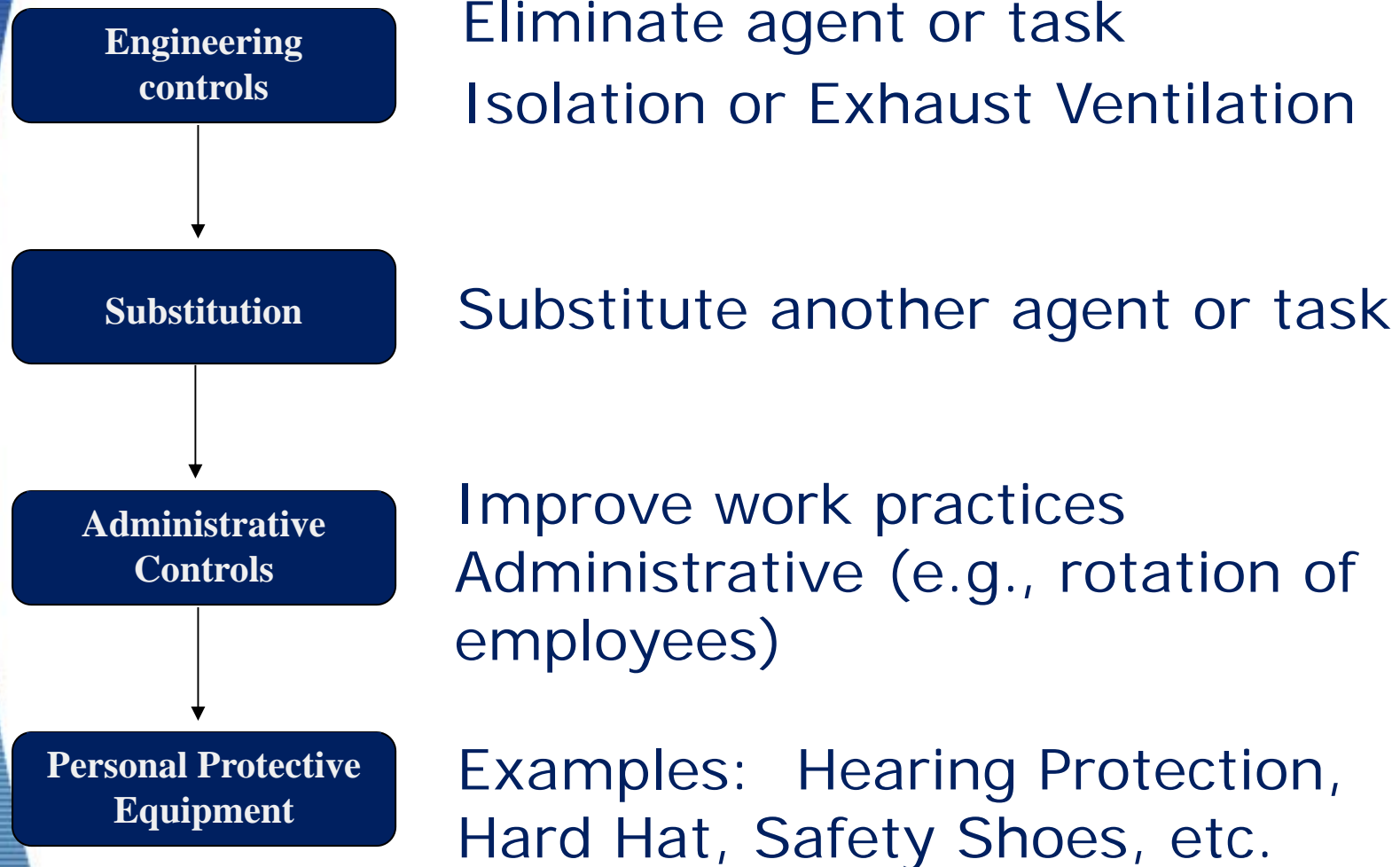
Are We Finished?



Now What?

- Update processes/programs based on hierarchy
- Update written programs
- Update Medical Surveillance Program
- Re-train

Hierarchy of Controls



Recordkeeping

- IH Sample Results
- IH Report
- Medical Testing
 - Emergency
 - Follow-up
 - Routine Surveillance

Preservation - How Long?

- Exposure: at least 30 years
 - Sample results, collection method, analytical methodology, summary of interpretation data, SDS or chemical identification, where used and when used
- Medical: 30 years past last date of employment

Evaluation of Program

- Regularly evaluate groups of information for trends or needs
- Set up company specific guidelines based on larger group of data – e.g. own OELs



Questions?

