



WELCOME!



DAN
THE LAB SAFETY MAN Inc.



Top 10 Healthcare Laboratory Safety Hazards



Dan Scungio, MT (ASCP), SLS, CQA (ASQ)

Dan the Lab Safety Man, Inc.

"Safety is ALWAYS Value Added™"



Objectives

- ▶ Understand the basic/intermediate laboratory safety regulations and applications
- ▶ Gain in-depth understanding of specific lab safety subjects
- ▶ Find cost-effective solutions to everyday hazards
- ▶ Relate laboratory needs to specific lab safety products, PPE, engineering controls, etc.
- ▶ Strengthen awareness of healthcare lab safety needs and how to avoid accidents

The Top 10....in order?

NO!!

- All safety issues are problems
- Primary Goal: protect laboratory staff

Hazard #1: Personal Protective Equipment



Hazard #1: Personal Protective Equipment

- Remember the Hierarchy...



Hazard #1: Personal Protective Equipment

- Personal Protective Equipment
- 29 CFR Part 1910.132
 - Observe
 - Analyze data
 - Select PPE



Hazard #1: Personal Protective Equipment

- What Must be Provided
 - Protective Clothing
 - Eye/Face Protection
 - Respirators
- Based on Risk Assessment



Hazard #1: Personal Protective Equipment

- Proper Use of PPE
 - Risk Assessment/Selection
 - Training
 - Donning/Doffing
 - Use/Maintenance
 - Payment



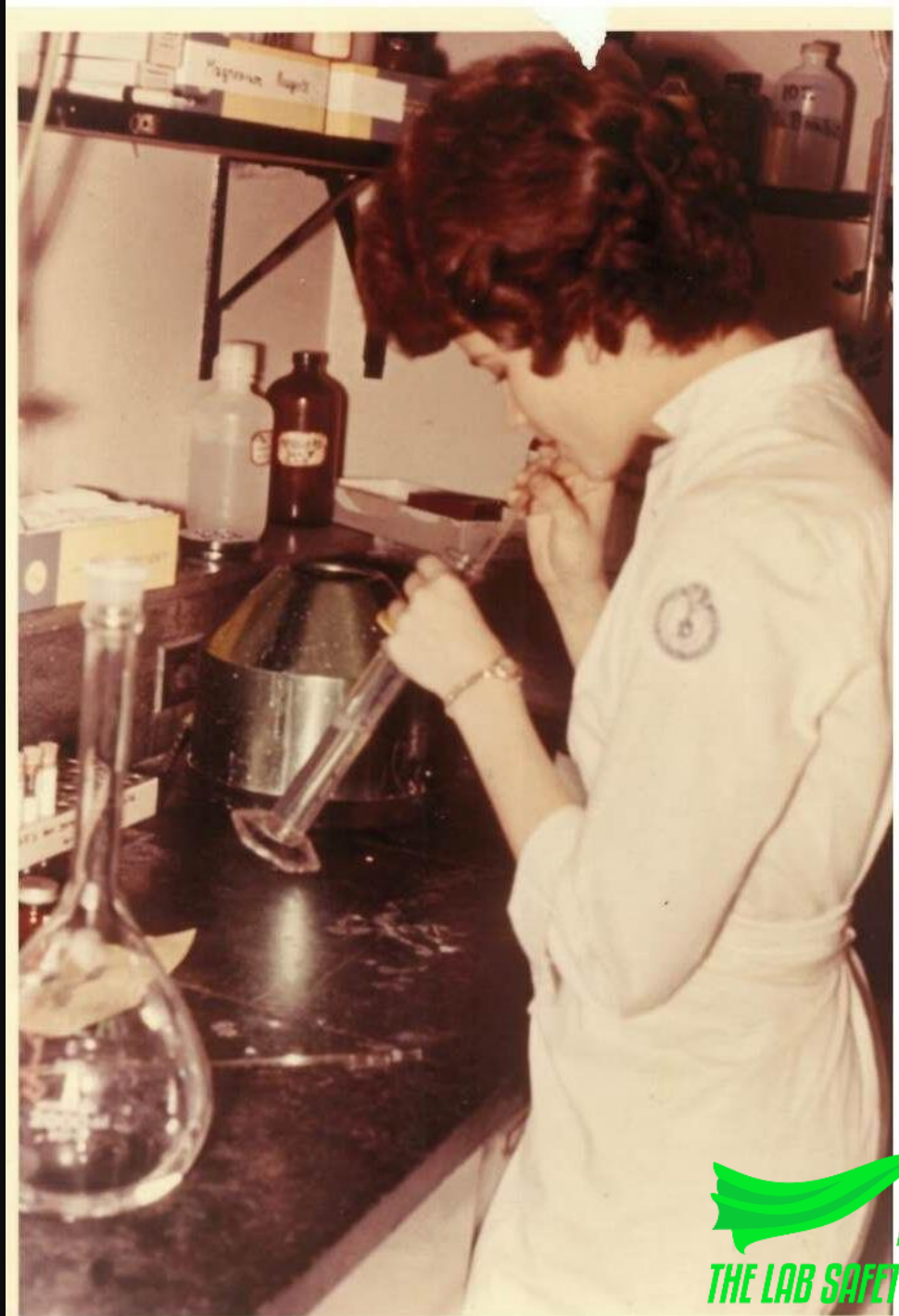
Hazard #2: Unsafe Work Practices

- Eating/Drinking
- Gum chewing
- Lip Balm
- Smoking/Vaping/Mouth Pipetting



Hazard #2: Unsafe Work Practices

- OSHA
 - Lab Accrediting Agencies
-



Hazard #2: Unsafe Work Practices

- Monitoring
- Enforcement



Hazard #3: Personal Electronic Devices

Radios

Cell Phones

Lap Tops

Tablets

Smart Watches/Fitness Trackers

Smart Speakers

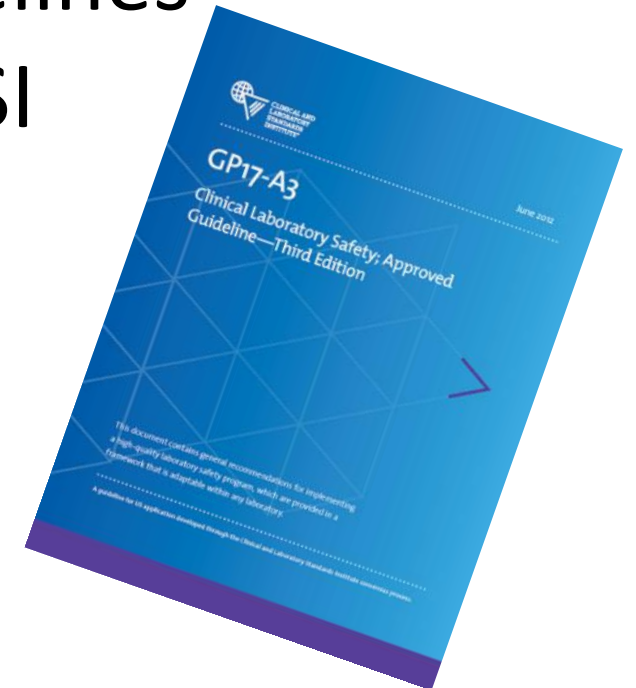
Hazard #3: Personal Electronic Devices

The reality:
Current policies



Hazard #3: Personal Electronic Devices

- Consequences
- Guidelines
 - CLSI



Hazard #4: Chemical Hygiene

- Storage
- Labeling
- Chemical Inventory/Risk Assessment
- SDS Access
- Spill Readiness (discussed later)

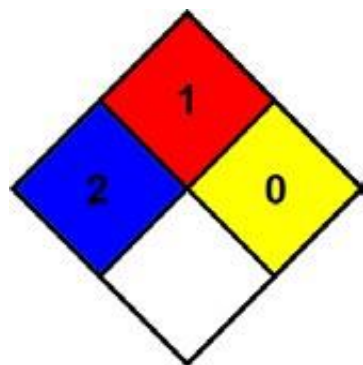
Hazard #4: Chemical Hygiene

- Storage Issues
 - Alphabetical Order
 - Acids and Bases
 - Chemicals too high
 - Flammable chemicals

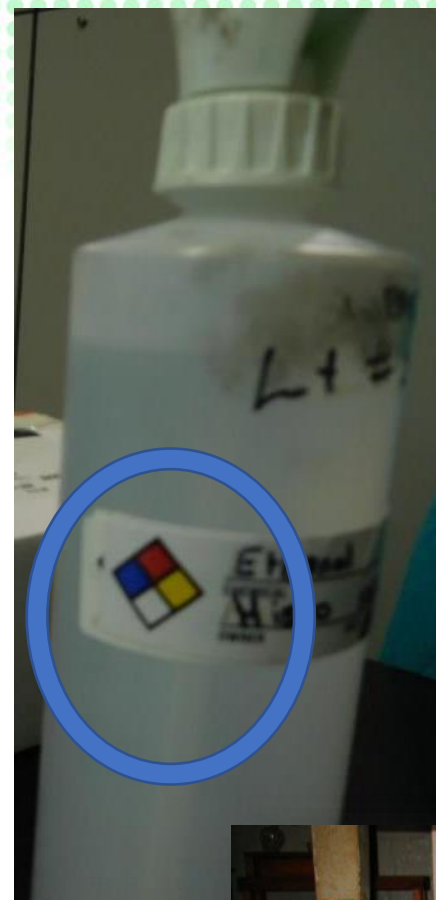


Hazard #4: Chemical Hygiene

- Labeling Issues
 - Secondary Containers
 - GHS
 - NFPA
 - HMIS












PROTECTIVE EQUIPMENT GUIDE	
A	G
B	H
C	I
D	J
E	K
F	X




Hazard #4: Chemical Hygiene

• Chemical Inventory/Risk Assessment

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U				
1 Chemical Inventory																	Health (H)	Flammability (F)	Reactivity (R)	Comment (C)				
2 Department Name:							Department Location:										0 - Will not harm 1 -	0 - Will not burn 1 - Above	0 - Stable 1 - Unstable if	OXY - Oxidizer				
3 Date:							Section: Laboratory Safety										2 - Slight Hazard 3 -	2 - Between 100-200°F	2 - Violent chemical change	COR - Corrosive				
4 Prepared by:																	4 - Deadly	3 - Below 100°C	3 - shock/heat may detonate	ALK - Alkali				
																		4 - Below 73°C	4 - May detonate	-V- Water				
6 IDENTIFICATION							NFPA			GHS				WARNING										
7 CHEMICAL NAME		MANUFACTURER		PRODUCT #		H	F	R	C	Signal Word											Carcinogenic Y/N	Reproductive Toxin Y/N	Acute Toxicity Y/N	Notes
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								

Hazard #4: Chemical Hygiene

- Safety Data Sheets
 - Access
 - Backup
 - Training



SAFETY DATA SHEET
Hydrogen Sulfide


Section 1. Identification

GHS product identifier : Hydrogen Sulfide
Chemical name : hydrogen sulphide
Other means of identification : Hydrogen sulfide; Hydrogen sulfide (H₂S); Sulfuretted hydrogen; Sewer gas; Hydrosulfuric acid; dihydrogen sulfide
Product use : Synthetic/Analytical chemistry.
Synonym : Hydrogen sulfide; Hydrogen sulfide (H₂S); Sulfuretted hydrogen; Sewer gas; Hydrosulfuric acid; dihydrogen sulfide
SDS # : 001029
Supplier's details :

Emergency telephone number (with hours of operation) :

Section 2. Hazards identification

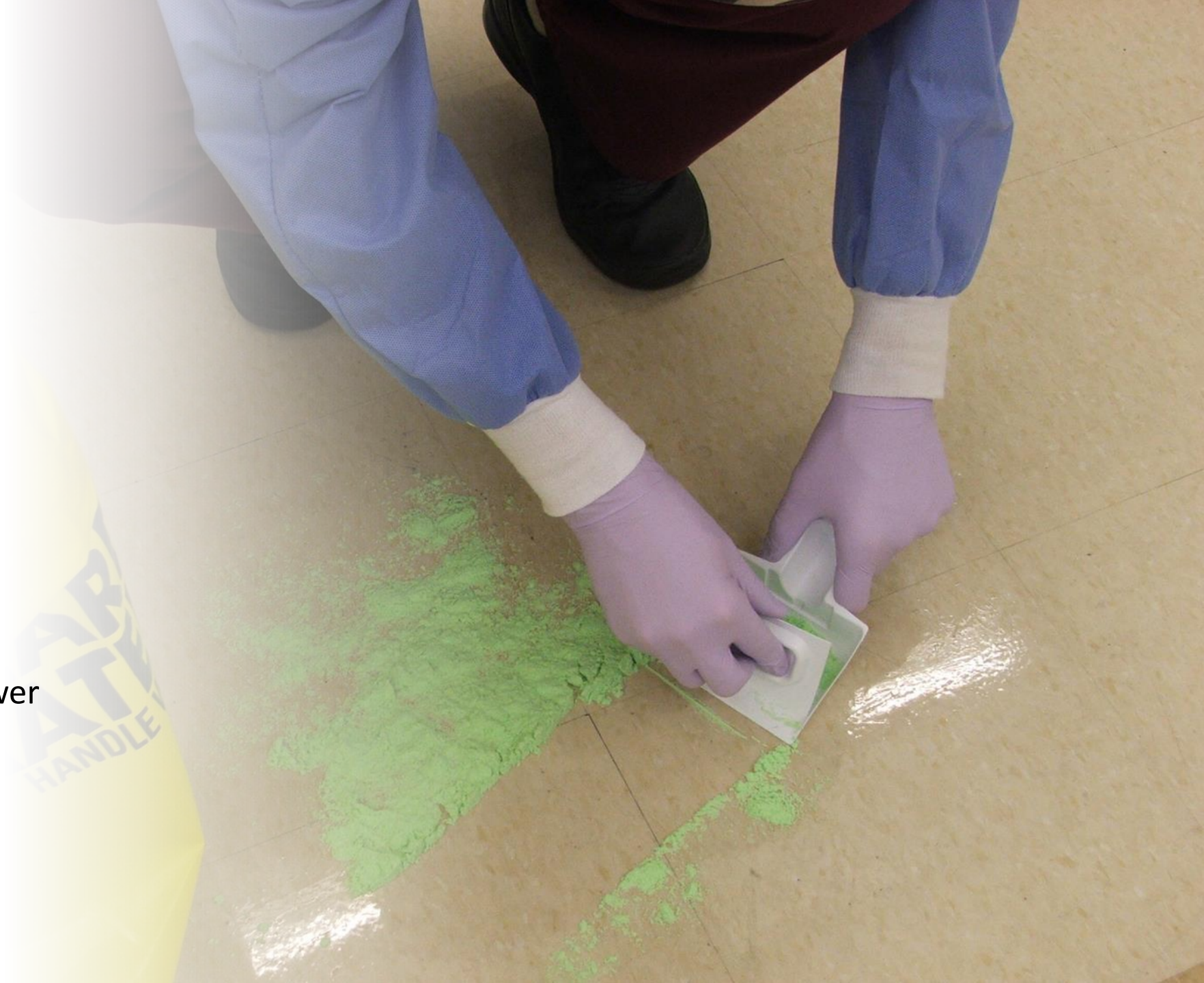
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas
ACUTE TOXICITY (inhalation) - Category 2
SPECIFIC TOXICITY (inhalation) - Category 3
AQUATIC HAZARD (ACUTE) - Category 1

GHS label elements
Hazard pictograms :     

Signal word : Danger
Hazard statements : Extremely flammable gas.
May form explosive mixture.
Contains gas under pressure.
May cause respiratory irritation.

Hazard #5: Laboratory Spills

- Biohazard
- Chemical
- Large vs. Small
- Readiness
 - Supplies
 - Training
 - Eyewash/Safety Shower





Hazard #5: Laboratory Spills

- Biohazard Spills
- Small vs. Large
- Handling



Hazard #5: Laboratory Spills

- Chemical Spills
- Small vs. Large
- Handling



Hazard #5: Laboratory Spills

- Training
- Spill Drills



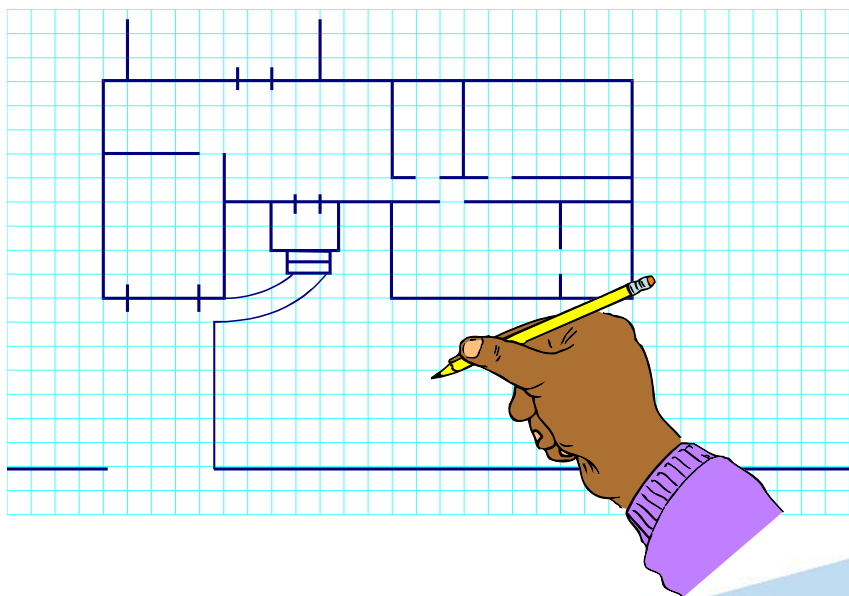
Hazard #6: Fire Safety

- Readiness
 - Fire Extinguishers



Hazard #6: Fire Safety

- Evacuations



Hazard #7: Laboratory Disinfection

- Chairs
- Surfaces
- Disinfectants



Hazard #7: Laboratory Disinfection

- Laboratory Disinfectants



Hazard #8: Signs and Labels

- Doorways
- Biohazard labels
 - Refrigerators/Freezers
 - Coolers
 - Trash cans
- Eyewash/First aid



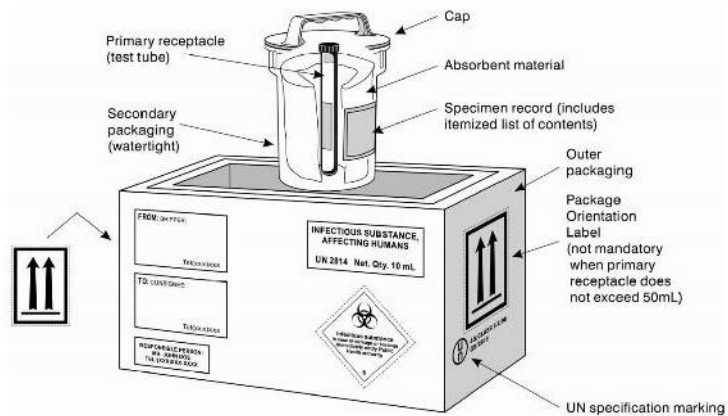
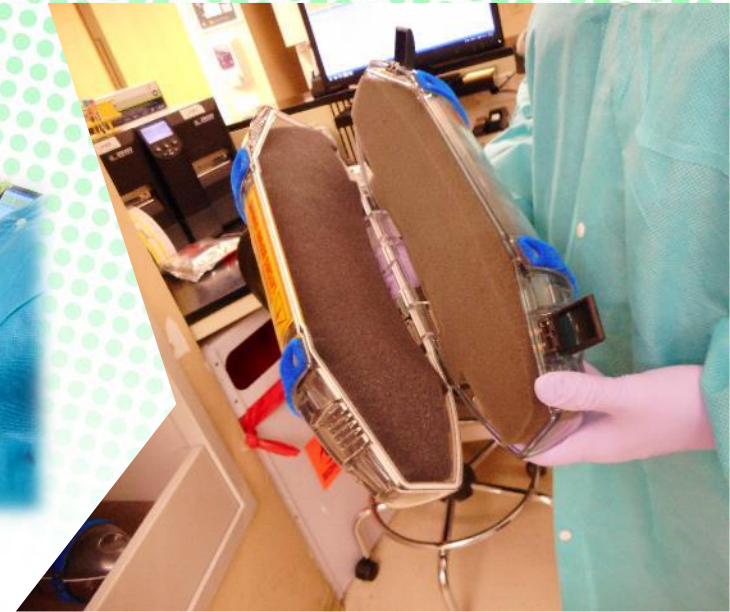
Hazard #8: Signs and Labels

- Laboratory Sign Job Aid

- **Laboratory signs**
 - Entrance biohazard/authorized staff warning
 - Exits signs visible/lit
 - Spill kit signs (bloodborne pathogens/chemical)
 - Biohazard labeling: refrigerators, transport containers, regulated medical waste containers
 - Target Organ Poster
 - Compressed Gas Signage
 - Emergency Eyewash and Shower signs
 - Posting of explicit first aid instructions
 - Evacuation map

Hazard #9: Preanalytical Safety

- Specimen Collection
- Specimen Transport
 - Internal
 - External



Hazard #9: Preanalytical Safety

- Phlebotomy/Specimen Collection
 - Decentralized?
- Specimen Transport
- Training
- Quality Metrics



Hazard #10: Waste Management

- Storage/Labeling
- Movement
- Records
- Training



Hazard #10: Waste Management

- Regulations
 - RCRA
 - Hazardous Waste
 - Solid Waste



Hazard #10: Waste Management

- Storage and Movement
- Satellite Accumulation Area
 - 55 Gallons
 - Line of sight
 - Movement
- Central Accumulation Area
 - LQG/SQG/VSQG

Hazard #10: Waste Management

- Waste Manifests
- Retention
- Training

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved, OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number				
5. Generator's Name and Mailing Address		Generator's Site Address (if different than mailing address)							
Generator's Phone:		6. Transporter 1 Company Name			U.S. EPA ID Number				
		7. Transporter 2 Company Name			U.S. EPA ID Number				
		8. Designated Facility Name and Site Address			U.S. EPA ID Number				
		Facility's Phone:							
GENERATOR	9a. HMI	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		No.	Type						
	1.								
	2.								
	3.								
	4.								
14. Special Handling Instructions and Additional Information									
15. GENERATOR/SOFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/ placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA-Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name					Signature	Month	Day	Year	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____									
Transporter signature (for exports only): _____ Date leaving U.S.: _____									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name					Signature	Month	Day	Year	
Transporter 2 Printed/Typed Name					Signature	Month	Day	Year	

The Top Ten



The Top Ten

Unsafe Practices

The Top Ten

Unsafe Practices

Fire Safety

The Top Ten

Unsafe Practices

Fire Safety

PPE

The Top Ten

Lab Spills

Unsafe Practices

Fire Safety

PPE

The Top Ten

Lab Spills

Unsafe Practices

Fire Safety

Personal Elec. Devices

PPE

The Top Ten

Lab Spills

Unsafe Practices

Fire Safety

Personal Elec. Devices

Waste Management

PPE

The Top Ten

Lab Spills

Unsafe Practices

Chemical Hygiene

Personal Elec. Devices

Fire Safety

Waste Management

PPE

The Top Ten

Lab Spills

Unsafe Practices

Chemical Hygiene

Personal Elec. Devices

Fire Safety

Lab Disinfection

Waste Management

PPE

The Top Ten

Lab Spills

Unsafe Practices

Preanalytical Safety

Chemical Hygiene

Personal Elec. Devices

Fire Safety

Lab Disinfection

Waste Management

PPE

The Top Ten

Lab Spills

Signs and Labels

Unsafe Practices

Preanalytical Safety

Chemical Hygiene

Personal Elec. Devices

Fire Safety

Lab Disinfection

Waste Management

PPE



DAN
THE LAB SAFETY MAN Inc.

QUESTIONS?





THANK YOU!



DAN
THE LAB SAFETY MAN Inc.

 **fisher**
healthcare
part of Thermo Fisher Scientific

