

# Healthcare Safety for Nursing Personnel

*An Organizational Guide to Achieving Results*



James T. Tweedy

MS, CHSP, CPSO, CHEP, CHCM



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# Contents

Preface.....	xix
Acknowledgments.....	xxi
About the Author.....	xxiii

<b>Chapter 1</b>	<b>Nursing Safety.....</b>	<b>1</b>
I.	Introduction .....	1
A.	ANA Nurse Health & Safety Survey Results.....	2
B.	Safe Patient Handling and Mobility: Interprofessional National Standards.....	3
C.	New Patient Safety Survey: Few Nurses Call Their Hospitals Safe .....	3
D.	International Board for Certification of Safety Managers .....	4
II.	Function of Safety .....	4
A.	Safety Responsibilities .....	5
B.	Nursing Supervisor Involvement.....	5
C.	Addressing Behaviors.....	6
D.	Employee Engagement .....	6
III.	Understanding Hazards .....	7
A.	Hazard Identification.....	7
B.	Preparing for Inspections .....	8
C.	Job Hazard Analysis.....	9
D.	Job Design .....	10
E.	Hazard Control and Risk Management.....	10
F.	Hazard Control and Correction.....	10
	1. Active and Passive Controls .....	11
	2. Engineering Controls.....	11
	3. Administrative Controls .....	12
	4. Work Practice Controls.....	12
G.	Personal Protective Equipment .....	12
H.	Areas to Evaluate .....	13
IV.	System Safety .....	13
V.	Understanding Accidents.....	14
A.	Accident Reporting .....	15
B.	Accident Investigations .....	15
	1. Classifying Accident Causal Factors.....	16
	2. Interviewing Witnesses .....	16
	3. Accident Analysis.....	16
	4. Root Cause Analysis.....	16
C.	Preparing Accident Reports .....	18
VI.	Human Factors.....	18
A.	Error .....	18
B.	Motivating People .....	19
	Review Exercises.....	20

<b>Chapter 2</b>	<b>Leadership and Management Overview.....</b>	<b>21</b>
I.	Introduction .....	21
II.	Leadership .....	21
	A. Practical Leadership.....	22
	B. Leadership Ethics.....	23
III.	Management .....	23
	A. Knowledge Management.....	23
	B. Decision-Making.....	24
	C. Psychological Safety.....	24
	D. Crisis Management.....	24
	E. Traditional Organizational Structure .....	25
IV.	Organizational Culture .....	25
	A. Covert and Overt Cultures .....	26
V.	Interfacing Support Functions.....	28
	A. Operational and Support Functions .....	28
	B. Human Resources.....	28
	C. Facility Management.....	28
	D. Employee Health .....	28
VI.	Workers' Compensation .....	29
	A. Return to Work/Modified Duty Positions .....	30
	B. Substance Abuse.....	30
VII.	Orientation, Education, and Training.....	31
	A. Providing Adequate Sessions .....	32
	B. Safety Training.....	32
VIII.	Effective Speaking and Writing .....	32
	A. Communication .....	33
	B. Communication Barriers.....	33
	C. Effective Writing .....	33
	Review Exercises.....	34
 <b>Chapter 3</b>	 <b>Nursing Hazards.....</b>	 <b>35</b>
I.	Introduction .....	35
	A. Administrative Area Safety.....	36
II.	Shift Work and Job Stress.....	37
	A. Shift Work .....	37
	B. Stress .....	38
III.	Slip, Trip, and Fall Prevention.....	38
IV.	Safety Signs, Colors, and Marking Requirements .....	39
V.	Electrical Safety (29 CFR Subpart S) .....	39
VI.	Three Common Hazards .....	40
	A. Bloodborne Pathogens.....	40
	B. Hazardous Material Safety.....	40
	C. Nursing Personnel and Workplace Violence.....	40
VII.	Helicopter Safety .....	41
VIII.	Noncompensated or Voluntary Worker Safety .....	41
IX.	Home Health Safety .....	41
X.	Surgical Department.....	43
XI.	Perinatal Nursing.....	44
XII.	Intensive Care Units .....	45



XIII. Emergency Department.....	46
XIV. Dialysis Unit Safety .....	47
A. Equipment .....	47
B. Personal Protective Equipment .....	47
XV. Medical Equipment Management.....	48
A. Medical Equipment Management Plan .....	48
B. Joint Commission Requirements.....	49
C. Maintenance, Testing, and Inspecting.....	49
D. Medical Equipment Reporting .....	49
E. Safe Medical Device Act of 1990.....	49
F. SMDA Reportable Events .....	50
G. Other Reporting Requirements .....	50
XVI. Security.....	50
A. NFPA 99-2012, Security Management (Chapter 13).....	51
B. Resources .....	51
C. Incident Reporting.....	51
D. Property Protection .....	51
E. Sensitive Area Access .....	52
F. Identification of Patients, Visitors, and Staff .....	52
G. Traffic Control and Vehicle Access.....	52
H. Weapons on Campus .....	52
I. Handling Civil Disturbances.....	53
J. Handling Situations Involving “VIPs” or the Media .....	53
K. Access and Crowd Control .....	53
L. Communications .....	53
M. Orientation and Education.....	53
N. Evaluation of Security .....	53
O. Using Proven Practices to Improve Security.....	54
P. Forensic Patients.....	54
Q. Workplace Violence .....	54
1. Workplace Violence Protection for Nurses by Accrediting Bodies .....	55
2. Workplace Violence Prevention (NIOSH Publication No. 2002-101) .....	55
3. Management Commitment and Employee Involvement .....	56
XVII. Ergonomics.....	57
A. Evaluation of Ergonomics Efforts .....	59
B. Workstation Evaluations.....	59
C. Workstation Interventions .....	59
D. Human Factors .....	59
E. Musculoskeletal Disorders .....	60
F. Administrative Issues .....	60
G. Equipment Maintenance .....	61
H. Facility Design Issues.....	61
I. Mechanical Lift and Assist Devices.....	61
J. Understanding the Body.....	61
K. Injuries and Disorders .....	62
L. Back-Related Problems .....	62
M. Back Injury Prevention.....	63
1. Lateral Transfers.....	64
2. Ambulating, Repositioning, and Manipulating .....	64

3.	Performing Activities of Daily Living .....	64
4.	Useful Tips .....	64
5.	Lift Teams .....	64
6.	Guiding and Slowing Falls.....	65
7.	Transfer Task Safety.....	65
8.	Personal Factors .....	65
9.	Work Evaluation Tools .....	65
N.	Training and Education .....	65
XVIII.	Patient Transport Functions.....	66
A.	Transporting Patients.....	66
B.	Patient Care .....	66
C.	Transport Team Development .....	67
1.	Wheelchair Safety .....	68
	Review Exercises.....	68
<b>Chapter 4</b>	<b>Patient Safety.....</b>	<b>71</b>
I.	Introduction .....	71
A.	Worker Fatigue and Patient Safety .....	72
II.	Leading Efforts.....	72
III.	IOM Reports.....	74
IV.	Errors and Adverse Events .....	75
A.	Active and Latent Errors .....	75
B.	Factors Impairing Human Performance.....	75
C.	Error Reporting .....	75
1.	Reporting Using Technology .....	76
D.	Analyzing Events and Errors.....	76
E.	Common Error Causal Factors.....	77
F.	Medical Education and Error Acknowledgment.....	77
V.	Safety Cultures .....	77
A.	Safety Culture Perceptions .....	78
B.	Healthcare Bureaucratic Structure .....	79
C.	Proactive Organizations .....	79
D.	Understanding Change .....	79
E.	Organizational Change.....	79
F.	Teamwork .....	80
VI.	Understanding Systems .....	80
A.	Systems Approach .....	81
B.	Key System Safety Elements.....	81
C.	System Reliability.....	81
D.	Failure Mode and Effect Analysis.....	82
E.	Technology and Safety .....	82
VII.	Patient-Centered Healthcare.....	82
A.	Error Disclosure .....	83
B.	Medical Error Disclosure Guidance.....	83
C.	Evidence-Based Medicine .....	84
D.	General Patient Safety Practices .....	84
E.	Using Patient Safety Checklists.....	84
VIII.	Human Factors.....	85
IX.	Patient Safety Officers and Committees .....	85
X.	Quality Improvement.....	86

A.	Benchmarking .....	86
B.	Other Measurements .....	86
C.	Stakeholders .....	86
D.	Plan-Do-Study-Act .....	86
E.	Root Cause Analysis .....	87
F.	Patient Roles in Patient Safety .....	87
XI.	Improving Patient Safety .....	87
A.	Wrong Surgeries .....	87
B.	Diagnostic Errors .....	88
C.	Display Confusion .....	88
D.	Air Embolism from Contrast Media Injectors .....	89
E.	Serious Reportable Events .....	89
F.	Handoffs .....	89
1.	Implementing Structured Handoff and Sign-Out Procedures .....	90
G.	Foreign Bodies .....	90
H.	Surgical Fires .....	90
I.	Anesthesia Hazards due to Inadequate Inspection .....	91
J.	Medical Device Alarm Safety .....	91
K.	Discharged Patient Events .....	92
XII.	Healthcare-Associated Infections .....	92
A.	Central Venous Catheter–Related Bloodstream Infections .....	93
B.	Surgical Site Infection .....	93
C.	Ventilator-Associated Pneumonia .....	93
D.	Catheter-Associated Urinary Tract Infection .....	93
XIII.	Medication Safety .....	93
A.	Medication Errors .....	93
B.	Risk Factors for Adverse Drug Events .....	94
C.	Prevention of Adverse Drug Events .....	94
D.	Accomplishing Medication Reconciliation .....	95
E.	Medication Administration .....	95
F.	Reducing Medication Errors .....	96
G.	Reporting Medication Errors .....	97
H.	Investigating Medication Errors .....	97
I.	Computerized Provider Order Entry .....	97
XIV.	Emergency Department Patient Safety .....	98
XV.	Other Key Patient Safety Issues .....	98
A.	Infusion Pumps .....	98
B.	Ambulatory Care .....	99
C.	Work Hours and Patient Safety .....	99
1.	ACGME 2010 Standards .....	99
D.	Rapid Response Systems .....	99
E.	Call System Operation .....	100
F.	Health Insurance Portability and Accountability Act .....	100
G.	Patient Restraints .....	100
1.	Most Medical/Surgical Restraints Exempt .....	101
H.	Patient Fall Prevention .....	102
I.	Environmental Hazards .....	102
J.	Bed Safety .....	102
XVI.	Electronic Records .....	103
A.	Key Components of Electronic Health Records .....	103
B.	Electronic Charting .....	103

XVII.	Infant Abduction Prevention .....	104
A.	Preventive Measures.....	104
XVIII.	Quality and Safety Education for Nurses.....	105
	Review Exercises.....	105
<b>Chapter 5</b>	<b>Emergency Management and Fire Safety .....</b>	<b>107</b>
I.	Introduction .....	107
II.	Joint Commission Requirements.....	107
III.	Other Emergency Planning Issues.....	110
A.	Hospital Evacuation Planning .....	111
IV.	Community Involvement.....	111
A.	Partnership for Community Safety.....	111
B.	Hospital Roles in Community Emergencies.....	112
V.	Incident Command System.....	112
A.	Incident Commander Responsibilities.....	113
VI.	Strategic National Stockpile .....	113
VII.	Planning for Terrorism .....	114
VIII.	Pandemic Planning.....	114
IX.	Fire Safety .....	114
A.	Life Safety Code Comparisons.....	115
B.	Design Considerations .....	116
C.	Fire Prevention .....	116
D.	Inspections.....	116
E.	Fire Warning and Safety.....	116
1.	Manual Alarm Stations .....	117
2.	Electrically Supervised Systems .....	117
3.	Special Requirements for Cooking Areas.....	117
4.	Fire System Inspections .....	117
F.	Fire Confinement.....	117
G.	Emergency Egress .....	118
1.	OSHA Egress Standards .....	118
H.	Fire Extinguishers .....	118
1.	How Fire Extinguishers Work.....	118
2.	Proper Maintenance .....	119
I.	Surgical Fires.....	119
1.	ASTM Surgical Fire Standard .....	120
2.	Fire Blankets .....	120
X.	Life Safety .....	121
A.	Interim Life Safety .....	121
	Review Exercises.....	121
<b>Chapter 6</b>	<b>Hazardous Materials .....</b>	<b>123</b>
I.	Introduction .....	123
II.	Hazardous Substance Safety .....	123
A.	Hazardous Substance Exposures.....	124
B.	Hazardous Chemical Determination.....	125
C.	Reproductive Hazards .....	125
D.	Threshold Limit Values .....	126

E.	Chemical Properties .....	126
F.	Flash Points .....	126
G.	Airborne Exposure .....	127
H.	Emergency Showers and Eyewashes .....	127
I.	Compressed Gas Safety.....	127
III.	OSHA Hazard Communication Standard (29 CFR 1910.1200).....	128
A.	Globally Harmonized System .....	128
B.	Major Hazard Communication Standard Changes .....	128
C.	Safety Data Sheet Changes .....	129
D.	Managing and Communicating Changes to the Hazard Communication Standard.....	130
E.	Employee Training .....	130
IV.	Healthcare Hazardous Materials .....	131
A.	Acetone.....	131
B.	Acryl Amide.....	131
C.	Ammonia.....	131
D.	Cadmium (29 CFR 1910.1027).....	131
E.	Chlorine Compounds .....	131
F.	Iodine.....	132
G.	Isopropyl Alcohol.....	132
H.	Methyl Methacrylate .....	132
I.	Peracetic Acid.....	132
J.	Pesticides .....	133
K.	Phenol Substances .....	133
L.	Quaternary Ammonium Compounds.....	133
M.	Solvents .....	133
N.	Ethyl Alcohol.....	134
O.	Glutaraldehyde .....	134
P.	Orthophthalaldehyde .....	134
Q.	Ethylene Oxide (29 CFR 1910.1047).....	134
R.	Formaldehyde (29 CFR 1910.1048).....	135
V.	Hazardous Drugs.....	135
A.	Hazardous Pharmaceutical Wastes .....	135
VI.	Medical Gas Systems .....	136
A.	Anesthetic Gas Hazards .....	137
B.	Scavenging .....	137
C.	Nitric Oxide.....	138
D.	Nitrous Oxide .....	138
VII.	Managing Waste .....	138
A.	Medical Waste.....	139
VIII.	Respiratory Protection (29 CFR 1910.134).....	139
A.	Types of Respirators.....	139
	Review Exercises.....	141
<b>Chapter 7</b>	<b>Infection Control and Prevention .....</b>	<b>143</b>
I.	Introduction .....	143
II.	Healthcare Immunizations .....	144
A.	Guidelines of the Advisory Committee for Immunization Practice.....	144
B.	Other Vaccination Considerations.....	144

III.	Centers for Disease Control and Prevention.....	145
A.	CDC Guidelines for Hand Hygiene in Healthcare Settings.....	145
B.	Guidelines for Environmental Infection Control in Healthcare Facilities .....	145
C.	CDC Standard Precautions .....	146
D.	CDC Isolation Precautions.....	146
	1. Airborne Precautions.....	147
	2. Droplet Precautions .....	147
	3. Contact Precautions .....	147
E.	New Infection Risk.....	147
IV.	Centers for Medicare & Medicaid Services, Hospital-Acquired Conditions, and Present on Admission Indicators.....	148
V.	Disinfectants, Sterilants, and Antiseptics.....	148
A.	Germicidal Effectiveness .....	148
B.	Regulatory Approval of Disinfectants .....	149
C.	EPA's Registered Sterilizers and Tuberculocidal and Antimicrobial Products.....	149
D.	CDC Recommendations.....	150
E.	Selecting a Disinfectant.....	150
VI.	OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030).....	151
A.	Exposure Control Plan .....	151
B.	OSHA Hand Hygiene Requirements.....	152
C.	Employee Involvement .....	152
D.	Recordkeeping.....	152
E.	Engineering Controls .....	153
F.	Needleless Systems .....	153
G.	Exposure Determination .....	153
H.	Control Measures .....	153
I.	Personal Protective Equipment .....	153
J.	Housekeeping, Laundry, and Waste Practices .....	154
K.	Hepatitis B Virus.....	154
	1. Hepatitis B Vaccination .....	154
L.	Hepatitis C.....	155
M.	Human Immunodeficiency Virus.....	156
N.	Other Key Topics.....	156
O.	Latex Allergies .....	157
P.	Information and Training .....	157
	1. Training Methods and Interactive Question Opportunities .....	157
	2. Trainer Qualifications.....	158
Q.	Medical Recordkeeping .....	158
	1. Training Recordkeeping .....	158
R.	Hazardous Waste Operations and Emergency Response (29 CFR 1910.120).....	158
S.	Postexposure Evaluation and Follow-Up.....	158
VII.	Tuberculosis.....	159
A.	TB Screening Procedures for Settings Classified as Low Risk .....	160
B.	TB Screening Procedures for Settings Classified as Medium Risk.....	160
C.	TB Screening Procedures for Settings Classified as Potential Ongoing Transmission.....	160
D.	OSHA Tuberculosis Exposure Enforcement Guidelines.....	161

1. OSHA Citations for TB Exposures .....	161
2. OSHA Abatement Methods .....	161
3. OSHA Tuberculosis Respirator Requirements .....	161
E. TB Exposure Control Plan .....	162
1. Administrative Controls .....	162
2. Environmental Controls .....	162
3. Respiratory-Protection Controls .....	162
4. Engineering Controls .....	163
VIII. Healthcare Opportunistic Infections .....	163
A. Bacteria .....	163
B. Methicillin-Resistant Staphylococcus Aureus .....	163
C. Viruses .....	163
D. Aspergillus .....	164
E. Anthrax .....	164
F. Severe Acute Respiratory Syndrome .....	164
G. Pseudomonas .....	164
H. Legionella .....	165
I. Infection Control Risk Assessment .....	165
IX. Medical Waste .....	165
A. Sharps Containers .....	166
B. Separating Medical and Hazardous Wastes .....	166
C. Infectious Wastes .....	166
D. Medical Waste Best Practices .....	167
E. Waste Handling for Offsite Transfer .....	167
F. Containers .....	167
G. Medical Waste Disposal .....	167
H. DOT Infectious Shipping Requirements .....	168
Review Exercises .....	169
<b>Chapter 8 Radiation, Lab, and Drug Hazards .....</b>	<b>171</b>
I. Radiation Safety .....	171
A. OSHA Ionizing Radiation Standard (29 CFR 1910.1096) .....	172
B. Restricted Areas .....	172
C. Surveys and Monitoring .....	172
D. Radiation Areas .....	172
E. Caution Signs .....	173
F. Airborne Radioactivity .....	173
G. Storage Areas .....	173
H. Tuberculosis Exposures .....	173
I. Ergonomics .....	173
J. Slips, Trips, and Falls .....	173
K. Bloodborne Pathogens .....	173
L. Storage and Handling Procedures .....	174
M. Medical Radioactive Materials .....	174
N. Shielding .....	174
O. ALARP .....	174
II. Nuclear Medicine .....	174
A. Brachytherapy (Implant) Patients .....	175
B. Medical, Reproductive, and Fertility Considerations .....	176

III.	Nuclear Regulatory Commission .....	176
	A. NRC Performance-Based Standards .....	177
	B. Radiation Control Planning.....	177
	C. Radiation Safety Committee .....	177
	D. Radiation Safety Officer.....	177
	E. Regulatory and Occupational Dose Considerations.....	178
	F. National Council on Radiation Protection .....	178
IV.	Food and Drug Administration and Radiation Safety .....	178
	A. Radiological Society of North America .....	179
	B. American College of Radiology .....	179
V.	Radioactive Waste Management .....	179
VI.	Nonionizing Radiation (29 CFR 1910.97).....	180
	A. Ultraviolet Radiation .....	180
	B. Radio Frequency and Microwave Radiation .....	180
	C. Wireless Medical Telemetry.....	180
	D. FDA/CDRH Recommendations for EMC/EMI in Healthcare Facilities .....	181
	E. Consensus Standards .....	181
	F. Other Recognized Standards.....	182
VII.	Lasers and Electrosurgery .....	182
	A. Laser Safety .....	182
	B. Laser Safety Officer .....	183
	C. Laser Standards .....	183
	D. Laser Classifications.....	183
	1. Class 1 Laser .....	184
	2. Class 1M Laser .....	184
	3. Class 2 Laser .....	184
	4. Class 2M Laser .....	184
	5. Class 3R Laser.....	184
	6. Class 3B Laser.....	184
	7. Class 4 Laser .....	184
	E. Laser Plumes .....	185
	F. Laser Skin Protection .....	185
	G. Fire Prevention Tips during Laser Surgery .....	185
VIII.	Magnetic Resonance Imaging .....	185
	A. FDA MRI Safety Guidelines.....	186
	B. Other MRI Safety Recommendations.....	186
	C. MRI Burns.....	187
IX.	Other Clinical Risks .....	187
	A. CT Radiation Doses .....	187
	B. Fiber-Optic Light Burns .....	188
	C. Sonography.....	188
X.	Laboratory Safety .....	188
	A. Clinical Laboratory Improvement Amendments .....	188
	B. Joint Commission Laboratory Accreditation .....	189
	C. College of American Pathologists Accreditation Program .....	189
	D. COLA Accreditation .....	190
	E. OSHA Laboratory Standard (29 CFR 1910.1450).....	190
	F. Summary of Lab Safe Work Practices .....	192
	G. Centrifuges .....	192



H.	Laboratories and the OSHA Bloodborne Pathogens Standard .....	192
I.	Tuberculosis.....	193
J.	Morgue .....	193
K.	Chemical and Fire Hazards.....	193
L.	Chemical Exposure Response.....	194
M.	Standard Operating Procedures .....	194
N.	Laboratory Equipment .....	194
O.	Microtome Safety.....	194
P.	Pressure and Vacuum Systems.....	195
Q.	Fume Hoods and Laboratory Ventilation.....	195
R.	Employee Training .....	195
S.	Medical Examinations and Consultations.....	196
T.	Supervisor Responsibilities .....	196
U.	Safety Personnel Responsibilities.....	196
V.	Laboratory Personnel Safety Responsibilities.....	196
W.	Animal Research Facilities .....	196
X.	Laboratory Hazardous Waste Disposal.....	197
Y.	Autoclaves .....	197
Z.	Good Clinical Laboratory Practices (GCLP).....	197
AA.	Laboratory Physical Environments .....	197
XI.	Drug Hazards .....	198
A.	Clinical Pharmacy.....	198
B.	General Safety Considerations .....	198
C.	Pharmacy Safety .....	199
D.	OSHA Hazard Communication Standard.....	199
E.	Pharmacy Ergonomics .....	199
F.	Workplace Violence .....	200
G.	General Medication Labeling.....	200
H.	Closed Pharmacy Procedures.....	200
I.	Drug Recalls or Safety Alerts .....	200
J.	High-Risk Medications .....	200
K.	Investigational Medication Safety.....	201
L.	Evaluation of Medication Management .....	201
M.	Drug Quality and Storage .....	201
N.	Hazardous Drug Safety .....	201
O.	Current Standards .....	202
P.	NIOSH Revision of ASHP Definition.....	202
Q.	Developing a Hazardous Drug List.....	202
R.	Where to Find Information Related to Drug Toxicity.....	203
S.	2010 NIOSH Update of Hazardous Drug Alert for Healthcare Settings .....	203
T.	Hazardous Drug Safety Plan.....	203
U.	Transfer Procedures.....	205
V.	Caregiver Exposure Precautions .....	205
W.	Administering Aerosolized Drugs .....	205
X.	Hazardous Drug Waste.....	206
Y.	Spill Control .....	206
Z.	Medical Surveillance.....	206
AA.	Ventilated Cabinets .....	206
AB.	Recordkeeping.....	207

XII.	Proposed Universal Waste Rule for Pharmaceuticals .....	207
A.	Current RCRA Requirements .....	208
B.	USP 797: Pharmaceutical Compounding—Sterile Preparations .....	208
C.	USP 797 2008 Revision.....	208
	Review Exercises.....	209
<b>Chapter 9</b>	<b>Agencies, Associations, and Organizations .....</b>	<b>211</b>
I.	Administrative Law .....	211
II.	Occupational Safety and Health Administration .....	212
A.	Summary of General Duties .....	212
B.	Priorities .....	213
C.	Citations.....	213
D.	State-Approved Plans .....	214
E.	Recordkeeping (29 CFR 1904).....	214
F.	Recording Work-Related Injuries and Illnesses .....	214
1.	Medical Treatment.....	214
2.	Restricted Work .....	214
3.	Classifying Injuries .....	215
4.	Classifying Illnesses.....	215
5.	Posting the Summary .....	215
6.	Form 301 Injury and Illness Incident Report .....	215
G.	Access to Employee Exposure and Medical Records (29 CFR 1910.1020).....	215
III.	Environmental Protection Agency .....	215
A.	Resource Conservation and Recovery Act.....	216
B.	Comprehensive Environmental Response, Compensation and Liability Act .....	216
C.	Superfund Amendments and Reauthorization Act of 1986 .....	217
D.	Clean Air Act .....	217
E.	Clean Water Act .....	217
F.	Federal Insecticide, Fungicide, and Rodenticide Act.....	218
G.	Toxic Substances Control Act .....	218
IV.	Other Federal Agencies .....	218
A.	Nuclear Regulatory Commission .....	218
B.	National Institute for Occupational Safety and Health .....	218
C.	Centers for Disease Control and Prevention .....	218
D.	Food and Drug Administration .....	219
E.	Agency for Healthcare Research and Quality.....	219
F.	National Institutes of Health .....	220
G.	Centers for Medicare & Medicaid Services.....	220
H.	Institute of Medicine .....	220
V.	Accreditation Organizations.....	220
A.	Joint Commission.....	220
B.	American Osteopathic Association.....	222
C.	Det Norske Veritas National Integrated Accreditation for Healthcare Organizations.....	222
D.	Accreditation Canada.....	223
E.	Commission on Accreditation of Rehabilitation Facilities .....	223
F.	College of American Pathologists Laboratory Accreditation .....	223

VI.	Standards Organizations .....	224
A.	American Conference of Governmental Industrial Hygienists.....	224
B.	American National Standards Institute.....	224
C.	National Council on Radiation Protection and Measurements.....	225
D.	National Fire Protection Association .....	225
VII.	Voluntary Associations.....	225
A.	American Healthcare Association.....	225
B.	American Hospital Association .....	225
C.	American Society of Healthcare Risk Management.....	226
D.	American Association of Occupational Health Nurses.....	226
E.	Association for the Healthcare Environment .....	226
F.	Association of Occupational Health Professionals .....	226
G.	ECRI.....	227
H.	American Association of Colleges of Nursing.....	227
I.	Academy of Medical-Surgical Nurses .....	227
J.	American Association of Critical-Care Nurses .....	227
K.	American Nurses Association.....	228
L.	American Academy of Ambulatory Care Nursing .....	228
M.	American Association of Managed Care Nurses.....	228
N.	American Nephrology Nurses' Association.....	229
O.	American Organization of Nurse Executives.....	229
P.	American Psychiatric Nurses Association .....	229
Q.	Association of periOperative Registered Nurses .....	229
R.	National Student Nursing Association .....	230
S.	American Association of Nurse Anesthetists .....	230
T.	American Holistic Nurses Association .....	230
U.	Emergency Nurses Association.....	231
V.	American Nursing Informatics Association.....	231
W.	Association of Rehabilitation Nurses .....	231
	Review Exercises.....	232
	<b>Bibliography .....</b>	<b>233</b>
	<b>Appendix 1: Nurses Safety Perception Survey .....</b>	<b>247</b>
	<b>Appendix 2: Safety Improvement Principles.....</b>	<b>251</b>
	<b>Appendix 3: Accident Causal Factor Chart .....</b>	<b>253</b>
	<b>Appendix 4: Ergonomic Symptoms Report.....</b>	<b>255</b>
	<b>Appendix 5: Sample Personal Protective Equipment Hazard Assessment Form .....</b>	<b>257</b>
	<b>Appendix 6: Workplace Violence Prevention Policy .....</b>	<b>259</b>
	<b>Appendix 7: Bloodborne Training Requirements .....</b>	<b>261</b>
	<b>Appendix 8: Patient Handling Guidance.....</b>	<b>267</b>
	<b>Appendix 9: Patient Safety Plan Development Considerations.....</b>	<b>271</b>

<b>Appendix 10: Sample TB Exposure Control Plan .....</b>	<b>275</b>
<b>Appendix 11: Model Respirator Plan for Small Organizations .....</b>	<b>281</b>
<b>Appendix 12: Glossary of Terms.....</b>	<b>285</b>
<b>Appendix 13: AHRQ Patient Safety Tools and Resources.....</b>	<b>325</b>

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# Preface

This text provides a survey of key safety issues, risks, and hazards confronting nurses on a daily basis. Much of the text uses the active voice to present information more succinctly and in fewer words. The text focuses on preventing accidents and controlling hazards in hospitals and other healthcare settings and provides an overview of safety management concepts as they relate to real-world challenges facing nursing personnel. The author presents healthcare safety as an organizational function and not just another program. The text focuses on achieving results because safety is more than just meeting accreditation requirements or regulatory compliance. Achieving safety is the right thing to do. This text provides a solid foundation for working nurses. It should serve as a valuable on-the-job resource. It addresses the need for good leadership and management. The author also briefly addresses the importance that practicing human relation and communication skills can have on healthcare hazard control efforts. The text also contains some very helpful appendices and could serve as a text for nursing schools desiring to offer a credit course in healthcare safety.



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# About the Author

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Jim founded TLC Services, a healthcare, hazard control, organizational performance, and educational consulting organization, in 1996. He has more than 25 years of experience with expertise in the areas of credentialing, hazard control, healthcare safety, leadership and team development, education, and compliance. He holds an MS in Safety Management from Central Missouri University and a BS in Liberal Studies from Excelsior College. He holds Master Level designations as a CHCM, CPSO, CPSM, CHSP, and CHEP. He also holds a Professional Membership in the American Society of Safety Engineers (ASSE) and is a member of the American Society of Healthcare Engineering (ASHE).

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# 1 Nursing Safety

## I. INTRODUCTION

Nursing personnel serve as an integral part of any healthcare or medical delivery organization. Nurses not only work to keep patients safe, but also encounter a number of safety and health risks. The Occupational Safety and Health Administration (OSHA) classifies healthcare safety risks in five hazard categories: biological, chemical, physical, ergonomic-environmental, and psychosocial. Registered nurses, licensed vocational or practical nurses, certified medical technicians, and certified nursing assistants provide patient care and support a variety of healthcare and medical settings. Nurses can experience safety and health risks while performing duties such as monitoring patients, accomplishing direct care tasks, assessing and recording symptoms, assisting physicians with treatments, administering medications, and moving or positioning patients.

In December 2007, the Environmental Working Group published an online survey that looked at the health issues of nurses, their respective areas of work, and the amount of exposure to common chemicals and hazardous materials. The results were alarming. The survey looked at 1,500 nurses and their exposure to 11 different common healthcare hazards, including chemo drugs, radiation, sterilizing agents, housekeeping chemicals, anesthetic agents, and certain other therapeutic drugs. While some of these hazards are known to have immediate adverse reactions allergic reactions, others have a more compounded effect over longer periods of time. The survey defined long-term exposure as being at least weekly for 10 years or more. Reported health conditions among the nurses ranged from asthma and cancer to birth defects in their children after exposure during pregnancy. Chemotherapeutic agents have been widely known to be toxic and require special precautions during preparation and administration. Nurses who worked with chemo agents for long periods of time reported 42 higher rates of cancer when compared to other nurses. Of those who reported working frequently with radiation, there was a 16 percent higher incidence of cancer.

Senior healthcare leaders must learn to promote hazard control and safety as an organizational value. Hazard control effectiveness impacts both the overt and covert cultures of any healthcare organization. The safety culture of healthcare organizations must be recognizable by those served. Healthcare organizations seeking to maintain revenues, minimize losses, serve their communities, and meet regulatory or accreditation requirements need effective safety functions. Healthcare is one of the fastest growing sectors of the U.S. economy, employing over 12 million workers with women representing about 80 percent of the healthcare workforce. Nursing professions make up a large portion of the medical and healthcare organizational workforce. Rates of occupational injury to healthcare workers continued to rise over the past decade. Hazards facing nursing professionals include needle sticks, back injuries, slips and falls, laser hazards, chemical exposure, biological hazards, and workplace violence. Home health nursing personnel must also face community safety issues. An increased emphasis on topics such as emergency management, indoor air quality, and patient safety indicates that safety will remain a key function in healthcare organizations. Advances in medical technology and clinical treatment techniques expose workers and patients to a variety of potential hazards. See Tables 1.1 and 1.2 for information about OSHA incidence rates and top citations for healthcare.

**TABLE 1.1**  
**OSHA Comparative (Nonfatal) Incidence Rates for 2011**

Industry	Rate
Private Industry	3.5
Construction	3.9
Manufacturing	4.4
Health Services	8.2
Hospitals	8.5
Nursing Facilities	12.7

*Source:* OSHA

*Note:* Incidence rates are per 100 employees.

### **BOX 1.1 TOP 10 OSHA CITATIONS FOR 2011–2012**

#### **Health Services Industries (All Categories)**

- Bloodborne Pathogens (1910.1030)
- Hazard Communication (1910.1200)
- Formaldehyde (1910.1200)
- Recordkeeping Forms (1904.0029)
- Medical Services and First Aid (1910.0151)
- Maintenance, Safeguards, and Operational Features for Exit Routes (1910.0037)
- Electrical Systems Design, General Requirements (1910.0303)
- Electrical Wiring Methods and Components (1910.0305)
- Personal Protective Equipment, General Requirements (1910.0132)
- Annual Illness/Injury Summary (1904.0032)

## **A. ANA NURSE HEALTH & SAFETY SURVEY RESULTS**

The latest health and safety survey from the American Nurses Association (ANA) makes it clear that the efforts to protect nurses from occupational injuries remain a crusade-in-progress. The survey indicated that hospitals appear to be safer workplaces today than 10 years ago, when the last ANA survey was conducted. Safe needle devices and patient-lifting equipment are more available today than a decade ago. However, responses of more than 4500 RNs that participated in the ANA *2011 Health and Safety Survey* indicated the same top three concerns were identified by the 2001 participants and in slightly higher percentages:

- 74 percent cited the effects of stress and overwork (versus 70 percent in 2001).
- 62 percent cited disabling musculoskeletal injury (versus 59 percent in 2001).
- 43 percent cited contracting an infectious disease (versus 37 percent in 2001).

The 2011 survey revealed that 64 percent of RNs work for hospitals that provide patient assist devices. Fifty-six percent of 2011 respondents indicated they experienced musculoskeletal pain related to or made worse by their jobs. Eighty percent worked despite musculoskeletal pain. Slightly less than 15 percent reported suffering three or more work related injuries within a year. Just 21 percent of respondents in 2011 listed fear of contracting HIV or hepatitis from a needle-stick event, down from more than 40 percent from the 2001 survey. Only six percent of 2011 respondents

indicated concern about latex allergies, as glove alternatives are more available than in 2001. Ten percent of 2011 respondents voiced concern about their exposure to hazardous drugs and other toxic substances. Awareness of hazards appears to be the key reason for increased concerns. Eleven percent of respondents reported a physical assault within the past year, which was down from 17 percent in 2001. However, more respondents ranked assault risks as a top three nursing concern in 2011 than in 2001.

## **B. SAFE PATIENT HANDLING AND MOBILITY: INTERPROFESSIONAL NATIONAL STANDARDS**

The ANA, in collaboration with a national working group and other professional organizations, recently released *Safe Patient Handling and Mobility: Interprofessional National Standards*. The 40-page outline contains eight evidence-based standards to prevent injury. The standard should provide a foundation for establishing a culture of safety for all caregivers and patients. An interprofessional work group established the standards that apply in any healthcare setting. The standards call for establishing a culture of safety, which includes ensuring safe levels of staffing, creating a nonpunitive reporting environment, and developing a system for communication and collaboration. Other standards address (1) implementing a safe patient handling and mobility program, (2) using ergonomic design principles to provide a safe environment of care, (3) obtaining safe patient handling technology, (4) creating processes for educating, training, and maintaining personal competence, (5) integrating patient-centered assessments, care planning, and technology, (6) requiring safe patient handling while considering reasonable accommodations and post-injury return to work policies, and (7) establishing a comprehensive evaluation system. The publication also includes a glossary of terms and appendices containing tools and resources.

Nurses play a critical role in ensuring patient safety by monitoring patients for clinical deterioration, detecting errors and near misses, understanding care processes and weaknesses inherent in some systems, and performing countless other tasks to ensure patients receive high-quality care. Nurse vigilance at the bedside must remain the key element in ensuring safety. Assigning nurses an increasing numbers of patients eventually compromises nurses' ability to provide safe care. Several seminal studies have demonstrated the link between nurse staffing ratios and patient safety. The nurse-to-patient ratio is only one aspect of the relationship between nursing workload and patient safety. Overall nursing workload is likely linked to patient outcomes as well. Determining adequate nurse staffing is a very complex process that changes on a shift-by-shift basis, and requires close coordination between management and nursing based on patient acuity and turnover, availability of support staff and skill mix, and many other factors.

## **C. NEW PATIENT SAFETY SURVEY: FEW NURSES CALL THEIR HOSPITALS SAFE**

A recently conducted survey indicated a large number of American, British, and Chinese nurses feel that hospitals are falling short in keeping patients safe, according to a recent survey of 900 nurses from the three countries. Although nearly all nurses said that their hospitals had programs in place that promote patient safety, they questioned their impact. About 40 percent of nurses described their hospital as safe and less than 60 percent believed that patient safety efforts in their hospital were effective. They said access to technology, heavy workload, communication with patients and doctors, and punitive systems for reporting errors were at the core of the problem. The survey was conducted by GE Healthcare and the American Nurses Association. Some 90 percent said they felt most responsible for patient safety. A large majority of nurses see data, technology, and innovation as key to identifying early warning signs and alerting staff. Many nurses said that there was a lack of feedback between patient safety data and the nursing staff. The results also suggest that moving away from a culture of punishment for poor practice could help to improve matters. About 40 percent of nurses rated their hospital as excellent at communication with the patient. Only about 30 percent indicated their hospital was excellent at communication between staff.

## D. INTERNATIONAL BOARD FOR CERTIFICATION OF SAFETY MANAGERS

The International Board for Certification of Safety Managers (IBFCSM) was founded in 1976 as a not-for-profit credentialing organization, and operated for some time as the Board of Certified Hazard Control Management (BCHCM). The Board offers qualified working healthcare professionals including nurses the opportunity to earn their Certified Healthcare Safety Professional (CHSP), Certified Healthcare Emergency Professional (CHEP), or Certified Patient Safety Officer (CPSO) credential. Many healthcare professionals hold more than one credential. The Board offers CHSP and CHEP credential holders the opportunity to add the healthcare Fire Safety Management (FSM) designation to their primary certification. The IBFCSM motto, *Individual Credentials—The Key to Upgrading the Profession*, reflects the impact that individual certifications have on improving organizational safety and hazard control functions.

## II. FUNCTION OF SAFETY

Safety must focus on developing processes or systems that can help prevent harm and loss. An uncorrected hazard or hazardous situation could contribute to an event resulting in property damage, job interruption, personal harm, or adverse health effects. The process of controlling hazards may require development of written policies, plans, or procedures. Never consider safety as a program but as a function of the organization. The safety function must connect with organizational structures and operational philosophies.

### BOX 1.2 BASIC SAFETY PRINCIPLES

- Correcting causal factors results in better use of human and material resources.
- Placing individual blame leads to organizational problems being ignored.
- Data collection provides the foundation for effective analysis of hazards.
- Safety efforts must address poor and hazardous behaviors.
- Communication and human relation skills remain key to achieving safety results.
- Hazard control focuses on accomplishing the job with safety.
- Hazard control functions as a quality tool when integrated into all job functions.
- Good hazard control and efficiency function as partners within an organization.

### BOX 1.3 SEVEN VALUES OF EFFECTIVE SAFETY

- Never-Ending Process
- People Focused
- Leadership Driven
- Operational Priority
- Benefits Everyone
- Reduces Organizational Losses
- Prevents Human Harm

The term “program” is derived from the French word “programme,” which means agenda or public notice. We can also refer to the Greek word “graphein,” which means to write. When used with the prefix “pro” it became “prographein,” which means to write before. Many organizations develop written safety programs to satisfy organizational mandates or to demonstrate visual compliance with regulatory requirements. Written plans, policies, and procedures should direct the hazard control function. The word “function,” first used in the early 16th century, denotes the concept of performance or execution. A function can relate to people, things, and institutions. A function

can refer to serving a designated or defined role in some manner. A function can also relate to participation in an ongoing cultural or social system. Considering hazard control as a function of the organization elevates its priority in the minds of everyone.

#### **BOX 1.4 REASONS FOR INEFFECTIVE SAFETY EFFORTS**

- Safety efforts focus on activities instead of behavioral elements.
- Safety problems and issues are not addressed using a systems approach.
- Senior leadership fails to define the organizational safety philosophy.
- The organization focuses primarily on compliance and accreditation issues.
- Physicians in many situations do not participate in safety efforts and become an obstacle.
- Safety education and training programs focus too much on simply documenting attendance.
- Performance- and objective-based training and education are rarely provided.
- Competition is allowed to exist among safety program elements (e.g., patient vs. worker safety).
- Leaders many times fail to address or deal with turf kings and queens with their own agendas.
- Lack of good coordination results in poor “buy-in” by organizational leaders.
- Senior leadership does not communicate goals and objectives to all levels.
- Effective accident investigation techniques are not implemented.
- Root cause analysis methods are used only for patient safety, not all safety events.
- The facility believes a “one-size-fits-all” safety program approach will work.

### **A. SAFETY RESPONSIBILITIES**

Many healthcare and medical organizations fail to outline specific safety and hazard control responsibilities in their plans, procedures, directives, and job descriptions. The concept of responsibility relates to a person’s obligation to carry out assigned duties in an efficient, effective, and safe manner. Senior leaders must ensure that managers, supervisors, and frontline nursing personnel understand the importance of their assigned safety responsibilities. Senior leaders must ensure that job descriptions address safety responsibilities inherent with each job position. Safety efforts will yield results when leaders encourage participation and hold key managers accountable. Senior leaders and hazard control managers must learn to focus on the hazards, behaviors, and risks that pose the most potential harm.

#### **BOX 1.5 SENIOR MANAGEMENT RESPONSIBILITIES**

- Develop, sign, and publish an organizational safety policy statement
- Describe key expectations related to accomplishing safety-related objectives
- Ensure that all organizational members can explain the major objectives
- Develop methods to track progress and provide feedback to all organizational members
- Require managers and supervisors to visibly support established objectives

### **B. NURSING SUPERVISOR INVOLVEMENT**

Nursing supervisors must possess the knowledge and experience to provide hazard control guidance to those they lead. First-line supervisors occupy a key hazard control position in many organizations. This position of trust can require supervisors to conduct area inspections, provide job training,

ensure timely incident reporting, and accomplish initial accident investigations. Supervisors in many healthcare settings possess little control over factors such as hiring practices, working conditions, and equipment provided to them. Supervisors must understand the role that human factors can play in accident prevention and causation. They must ensure that each person they supervise understands the behavior expectations of the job. Some organizations require employees to sign a safe work agreement. Such an agreement requires the individual to commit to working safely and to adhere to organizational policies or procedures. Supervisors must ensure that frontline personnel can access all safety-related directives, plans, policies, and procedures.

#### **BOX 1.6 NURSING SUPERVISOR RESPONSIBILITIES**

- Enforce work rules and correct unsafe or at risk behaviors
- Implement mandated safety policies and procedures for their areas of responsibility
- Provide job- or task-related training and education
- Immediately report and investigate all accidents in their work areas
- Conduct periodic area hazard control and safety inspections
- Ensure proper maintenance and servicing of all equipment and tools
- Lead by example and personally adhere to hazard control requirements
- Conduct safety and hazard control meetings on a regular basis
- Work with organizational hazard control personnel to correct and control hazards
- Ensure all personnel correctly use required personal protective equipment (PPE)

### **C. ADDRESSING BEHAVIORS**

Nursing supervisors must explain work rules and behavioral expectations to all new or transferred employees. Supervisors must never tolerate individuals that encourage others to disregard work rules or established procedures. When disciplining an individual, do so in private, but always document the facts. Senior leaders, managers, and supervisors must set an example for others. They must discourage poor behaviors by reinforcing the importance of acceptable behaviors. Never confuse correcting a behavior with undertaking needed disciplinary action. When correcting an unsafe behavior, always state the facts about the situation but limit personal opinions. Use statements that begin with “I” but never use “they” statements. Take time to recognize good behaviors by using positive reinforcement. Keep in mind that some individuals may not recognize a hazard or hazardous situation. Some may recognize a hazard but not possess the ability to deal with it. Too many injuries occur when a person recognizes a hazard but fails to respect its potential for causing harm.

#### **BOX 1.7 BEHAVIOR CORRECTION PROCESS**

- Step 1 – Identify the unsafe action
- Step 2 – State concern for worker’s safety
- Step 3 – Demonstrate the correct and safe way
- Step 4 – Ensure the worker understands
- Step 5 – Restate concern for personal safety
- Step 6 – Follow up

### **D. EMPLOYEE ENGAGEMENT**

Employee engagement occurs when an individual personally feels their connection to their position or job. This engagement also refers to their personal commitment to the success of the organization.



Employee engagement can contribute to individual satisfaction and personal mental wellness. Engaged employees also help improve the productivity, morale, and motivation of others. Today, many organizations realize the need for balancing work demands with a person's family and other life issues. When off the job, organizational members serve in a variety of roles including as a volunteer, caregiver, and parent. Understanding employee engagement helps leaders and hazard control managers deal with the complexity of human behaviors. Conflicting responsibilities can lead to role misunderstandings and work-related overloads, which can impact organizational objectives, including hazard control efforts.

### **BOX 1.8 WAYS TO PROMOTE SAFE BEHAVIORS**

- Requiring everyone to walk the talk, also known as “modeling”
- Rewarding people when appropriate
- Recognizing people for making good efforts
- Correcting unsafe behaviors in a positive manner
- Learning to deal with behaviors and not attitudes
- Motivating through a focus on promoting trust
- Educating others to increase their understanding
- Presenting the “why” of something
- Encouraging people to become engaged and to participate
- Empowering subordinates to make decisions
- Coaching by promoting teamwork and individual improvement
- Consulting to provide guidance from a short distance away
- Coordinating to allow people to buy in and take ownership
- Leading and motivating others to achieve goals by focusing on the process
- Promoting better listening to learn from others

## **III. UNDERSTANDING HAZARDS**

Classifying and defining hazards can vary greatly depending on a number of factors, including type of industry, process, or operation. For example, mechanical energy hazards can involve components that cut, crush, bend, shear, pinch, wrap, pull, and puncture. Biological hazards can include pandemic, bioterrorism agents, bloodborne pathogens, and infectious waste. Chemical hazards include substances such as solvents, flammable liquids, compressed gases, cleaning agents, and even disinfectants. Physical hazards can include risks posed by fire, radiation, machine operation, and noise. Environmental and ergonomic hazards include slip, trip, and fall hazards, walking and working surfaces, lighting, and tasks with repetitive motions. Psychosocial hazards address issues such as workplace violence, work-related stress, sleep deprivation, mental problems, chemical dependency, alcohol abuse, and horseplay on the job.

### **A. HAZARD IDENTIFICATION**

Hazard identification requires the identification of hazards, unsafe conditions, and risky behaviors. Hazard anticipation relies on human intuition, training, common sense, observation, and continuous awareness. To identify hazards, rely on the use of inspections, surveys, analysis, and human recognition reporting. Hazard identification efforts should focus on unsafe conditions, hazards, broken equipment, and human deviations from accepted practices. Require supervisors or unit safety coordinators to conduct periodic area inspections. These individuals should understand hazardous areas and the workers better than anyone. However, supervisors can fall prey to inspection bias, which results in poor survey results. Many supervisors conduct limited ongoing inspections

as part of their daily job duties. Periodic inspections and surveys can focus on critical components of equipment, processes, or systems with a known potential for causing serious injury or illness. Some equipment inspections help meet preventive maintenance requirements or hazard control plan objectives. Safety standards can mandate that qualified persons periodically inspect some types of equipment, such as elevators, boilers, pressure vessels, and fire extinguishers, at regular intervals. Establish the frequency of inspections by considering the scope and type of the hazardous operations. Many hazard control plans fail to provide sufficient guidance about how to conduct hazard surveys, inspections, and audits. Inspections, audits, and hazard surveys can only help identify hazards when conducted properly. Providing a checklist to an untrained person can result in his or her failure to properly identify hazards or unsafe conditions. General checklists serve as tools that guide an inspection process. These documents do not contain information about all potential hazards. The effective use of demand response checklists will also require some type of education or training. Demand response checklists address specific operations and complex job processes such as the operation of robotic systems or the control of hazardous energy.

### **BOX 1.9 HEALTHCARE OCCUPATIONAL HAZARD CATEGORIES**

- Biological hazards include bacteria, viruses, infectious waste, and bloodborne pathogens.
- Chemical hazards can pose a variety of risks due to their physical, chemical, and toxic properties.
- Ergonomic and environmental hazards include repetitive motion, standing, lifting, trips, and falls.
- Physical hazards include things such as radiation, noise, and machine-generated hazards.
- Psychosocial hazards include substance abuse, work-related stress, and workplace violence.

*Note: Some hazards may fit in more than one category.*

### **BOX 1.10 SOME COMMON FACTORS INHERENT IN GOOD WORK ENVIRONMENTS**

- Good workplace design and proper equipment placement, including guards and controls.
- Equipment inspections and preventive maintenance are conducted as scheduled.
- The organization conducts inspections, audits, and hazard surveys on a regular basis.
- Corrective actions and hazard controls are implemented immediately to eliminate risks.
- Employees formally commit to work safely and maintain hazard-free work areas.
- Work areas are equipped with proper lighting, ventilation, and environmental controls.
- Employees must use PPE when mandated.
- Supervisors conduct job instruction, inspections, and initial accident investigations.

## **B. PREPARING FOR INSPECTIONS**

Conduct education and training sessions about how to conduct inspections. Periodic inspections provide opportunities for hazard control personnel, line supervisors, and top managers to listen to the concerns of those doing the work. Inspections should accurately assess all environments,

equipment, and processes. Learn to identify potential hazards by observing individuals accomplish specific job tasks or processes. Learning to identify hazards and recognize unsafe behaviors requires inspectors to use their observation skills. Inspectors must focus on using all five human senses. Look for deviations from accepted work practices and rely on intuition or gut feelings to assist with the identification of hazards. Curiosity can help uncover hidden hazards. Learning to use visualization techniques to connect the dots can create a mind picture of a hazardous situation. Never allow human emotions or personal issues to drive the inspection process. Inspectors should maintain a professional demeanor and rely on logic when assessing tough situations. Inspectors must always point out potential or immediate dangers. They must never operate any equipment unless trained and authorized to do so, and should ask questions about tasks or processes, but refrain from disrupting operations or creating distractions. Well-designed checklists can assist with the documentation of any key findings.

### **BOX 1.11 SPECIAL INSPECTION SITUATIONS**

- When new equipment is installed
- When new operations or procedures are added
- When work or tasks are relocated or revised
- When new construction or remodeling is in progress
- When any special or unusual program arises

*Note: Review all contracts to ensure inclusion of safety-related considerations.*

### **BOX 1.12 FUNDAMENTAL ELEMENTS OF HAZARD ANALYSIS**

- Understand that hazard analysis deals with the science of and standards relating to hazards
- Evaluate hazard information using a practical approach
- Investigate accidents and near-miss events to discover causes
- Conduct root cause analysis to uncover contributing causes
- Determine worker perceptions about safety in the workplace
- Deal with perceptions (it cannot be avoided)
- Collect sufficient hazard information for analysis
- Remember that effective hazard analysis leads to effective hazard control or correction
- Identify employees at risk of exposure and evaluate control measures
- Establish a baseline to be used throughout a continuous or ongoing process
- Use inspections to identify and assess hazards in each work environment
- Determine potential hazard severity and possible effects on workers
- Evaluate PPE effectiveness
- Develop orderly processes for evaluating frequent and serious hazards

## **C. JOB HAZARD ANALYSIS**

Job hazard analysis (JHA) permits an examination of job-related tasks and processes for the purpose of discovering and correcting inherent risks and hazards. Supervisors and other experienced personnel can perform the process by working sequentially through the steps of a job process or task (see Table 1.2). Job hazard analysis requires an understanding of potential job hazards, and can

**TABLE 1.2****Job Hazard Analysis Steps**


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Step A	Break the Job Down: Examine each step in the process for hazards or unsafe conditions that could develop during the job process.
Step B	Identify Hazards: Document process hazards, environmental concerns, and any anticipated human issues.
Step C	Evaluate Hazards: Assess identified hazards and behaviors to determine their potential roles in an accident event.
Step D	Develop and Design Hazard Controls: Develop or design the best hazard controls based on evaluating each hazard. Coordinate implementation of all feasible controls.
Step E	Implement Required Controls: Coordinate and obtain management approval for implementation.
Step F	Revise and Publish the Job Hazard Analysis Information: Update the JHA and then communicate implementation actions with the organizational members.

---

help in assessing the tools, machines, and materials used to perform a job. Personnel conducting the analysis must possess knowledge of hazard control, including use of PPE. A well-developed job hazard analysis can also serve as an effective teaching tool. Organizations should develop a job hazard analysis for all tasks, processes, or phase-related jobs. Conduct and update a job hazard analysis when a process changes or an accident occurs. Recommend that each organization develop standardized procedures and formats for conducting the analysis. An effective analysis provides the basis for developing and implementing appropriate control measures. Post analysis results at appropriate workstations and other job or process locations.

#### **D. JOB DESIGN**

Creating well-designed jobs, tasks, and processes can help reduce worker fatigue, reduce repetitive motion stress, isolate hazardous tasks, and control human factor hazards. The concept of job design refers primarily to administrative changes that help improve working conditions. The design of safe work areas must address workstation layout, tools and equipment, and the body position needed to accomplish the job. Safe work area design reduces static positions, and minimizes repetitive motions and awkward body positions. Consider the importance of human factor issues when designing work processes.

#### **E. HAZARD CONTROL AND RISK MANAGEMENT**

Risk management in any setting can be described as the probability that a hazard will cause injury or damage. In some organizations, risk management operates separately from the hazard control function. For example, hospitals consider risk management to be a separate function from environmental safety efforts. Some other types of organizations may consider risk management an integral element of hazard control function. Risk management from an insurance and loss control perspective can quickly become a reactive managerial element. Risk management views all losses to the organization and not just human injury. Risk assessment relates to the process by which risk analysis results drive decision-making. Risk control efforts address hazardous events by implementing interventions to reduce severity. Risk management includes not only control efforts, but finance as well. Risk control considers all aspects of system safety, hazard control management, and safety engineering. Risk finance considers insurance, risk pooling, and self-insurance.

#### **F. HAZARD CONTROL AND CORRECTION**

Organizations must use the concept known as *hierarchy of controls* to reduce, eliminate, and control hazards or hazardous processes. Hazard controls can also include actions such as using *enclosure*, *substitution*, and *attenuation* to reduce human exposure risks. An enclosure keeps a hazard