The process control, design and planning stage of ISO 15189:2012 management system standard: an implementation update: supplementary material

Dennis Mok and Sharfuddin Chowdhury

Table S1. Selected international organisations (*n* = 28) providing relevant guidance documents in support of the implementation of process control, design and planning stage of ISO 15189:2012.

Organisations (*n* = 28)	**Classification** (Type A to Type F)
European Committee for Standardization (CEN)	D
European Committee for Electrotechnical Standardization (CENELEC)	D
International Commission on Illumination (CIE)	C
Cooperative on International Traceability in Analytical Chemistry (CITAC)	F
Eurachem	F
Health Level Seven International (HL7)	F
International Atomic Energy Agency (IAEA)	B
International Agency for Research on Cancer (IARC)	E
International Air Transport Association (IATA)	B
International Commission on Non-Ionizing Radiation Protection (ICNIRP)	D
International Commission on Occupational Health (ICOH)	B
International Council for Standardization in Haematology (ICSH)	C
International Electrotechnical Commission (IEC)	C
Institute of Electrical and Electronics Engineers (IEEE)	F
International Federation of Clinical Chemistry and Laboratory Medicine (IFCC)	B
International Health Terminology Standards Development Organisation (IHTSDO)*	C
International Laboratory Accreditation Cooperation (ILAC)	F
International Labour Organization (ILO)	B
International Organization for Standardization (ISO)	B
International Social Security Association (ISSA)	B
International Solid Waste Association (ISWA)	B
International Union of Pure and Applied Chemistry (IUPAC)	B
Organisation for Economic Co-operation and Development (OECD)	C
International Organization of Legal Metrology (OIML)	B
Transparency International (TI)	F
United Nations Economic Commission for Europe (UNECE)	E
World Health Organization (WHO)	B
WHO Regional Office for Europe (WHO/Europe)	E

* International Health Terminology Standards Development Organisation trades as SNOMED International.

Descriptions (1, pp. xv-xxi)**:**
Type A: federation of international organisations: includes ≥ three international organisations; management and policy-making organs reflect a well-balanced geographical distribution.
Type B: universal membership organisation: from either ≥ 60 countries or ≥ 30 countries in ≥ two continents and with a well-balanced geographical distribution; management and policy-making organs reflect a well-balanced geographical distribution.
Type C: intercontinental membership organisation: from ≥ 10 countries in ≥ two continents with a well-balanced geographical distribution; management and policy-making organs reflect a well-balanced geographical distribution.
Type D: regionally defined membership organisation: from ≥ three countries within one continental or sub-continental region; management and policy-making organs reflect a well-balanced geographical distribution.
Type E: organisation emanating from places, persons or other bodies: no criteria for membership; reference to, and to some degree limited by, another international organisation, or a person, or a place.
Type F: organisation having a special form: no criteria for membership; structure is non-formal, unconventional or unusual.
Type G: internationally-oriented national organisation: no criteria for membership; management and policy-making organs reflect participation of only one country or two countries; formal links with ≥ one other international organisation.

Table S2. Recommended guidance documents associated with the process control, design and planning stage of ISO 15189:2012.

Subclauses (*n* = 27)	**Organisations** (*n* = 116)	**References** (*n* = 237)
4.6	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 27)
	ISO	**ISO 37500:2014** Guidance on outsourcing (3) **ISO/TS 22318:2015** Societal security — Business continuity management — Guidelines for supply chain continuity (4)
5.1.2	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 17)
5.1.3	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 17)
5.1.4	CEN †	**EN 149:2001+A1:2009** Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking (5) **EN 166:2001** Personal eye protection - Specifications (6) **EN ISO 361:2015** Basic ionizing radiation symbol (7) **EN ISO 374-1:2016+A1** Protective gloves against dangerous chemicals and micro-organisms - Part 1: terminology and performance requirements for chemical risks (8) **EN ISO 374-5:2016** Protective gloves against dangerous chemicals and micro-organisms - Part 5: terminology and performance requirements for micro-organism risks (ISO 374-5:2016) (9) **EN 405:2001+A1:2009** Respiratory protective devices - Valued filtering half masks to protect against particles - Requirements, testing, marking (10) **EN 407:2004** Protective gloves against thermal risks (heat and/or fire) (11) **EN 420:2003+A1:2009** Protective gloves - General requirements and test methods (12) **EN 421:2010** Protective gloves against ionizing radiation and radioactive contamination (13) **EN 511:2006** Protective gloves against cold (14) **EN 840-6:2012** Mobile waste and recycling containers - Part 6: safety and health requirements (15) **EN 14387:2004+A1:2008** Respiratory protective devices - Gas filter(s) and combined filter(s) - Requirements, testing, marking (16) **EN ISO 13688:2013** Protective clothing - General requirements (ISO 13688:2013) (17) **EN ISO 19238:2014** Radiological protection - Performance criteria for service laboratories performing biological dosimetry by cytogenetics (18) **EN ISO 20345:2011** Personal protective equipment - Safety footwear (ISO 20345:2011) (19)
	CENELEC ‡	**EN 60825-1:2014** Safety of laser products - Part 1: equipment classification and requirements (IEC 60825-1:2014) (20) **EN 61010-1:2010+A1:2019+AC:2019-04** Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: general requirements (IEC 61010-1:2010+A1:2019) (21) **EN 61508-1:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: general requirements (IEC 61508-1:2010) (22) **EN 61508-2:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: requirements for electrical/electronic/programmable electronic safety related systems (IEC 61508-2:2010) (23) **EN 61508-3:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: software requirements (IEC 61508-3:2010) (24) **EN 62471:2008** Photobiological safety of lamps and lamp systems (IEC 62471:2006, modified) (25)
	IAEA	International basic safety standards for protection against ionizing radiation and for the safety of radiation sources (26)
	ICOH	Creating a safe and healthy workplace: a guide to occupational health and safety for entrepreneurs, owners and managers (27)

	IEC §	**IEC 60825-1:2014** Safety of laser products – Part 1: equipment classification and requirements, 3rd edn (28) **IEC 61010-1:2010** Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (29) **IEC 61010-1:2010/COR1:2011** Corrigendum 1 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (30) **IEC 61010-1:2010/COR2:2013** Corrigendum 2 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (31) **IEC 61010-1:2010/AMD1:2016** Amendment 1 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (32) **IEC 61010-2-081:2019** Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-081: particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes, 3rd edn (33) **IEC 61010-2-101:2018** Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-101: particular requirements for in vitro diagnostic (IVD) medical equipment, 3rd edn (34) **IEC 61508-1:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: general requirements, 2nd edn (35) **IEC 61508-2:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 2: requirements for electrical/electronic/programmable electronic safety related systems, 2nd edn (36) **IEC 61508-3:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 3: software requirements, 2nd edn (37) **IEC 62471:2006** Photobiological safety of lamps and lamp systems (38)
	ILO	Ambient factors in the workplace (39) Safety in the use of chemicals at work (40) The use of lasers in the workplace: a practical guide (41)
	ISO **	**ISO 361:1975** Basic ionizing radiation symbol (42) **ISO 374-1:2016** Protective gloves against dangerous chemicals and micro-organisms — Part 1: terminology and performance requirements for chemical risks (43) **ISO 374-1:2016/Amd.1:2018** Amendment 1 — Protective gloves against dangerous chemicals and micro-organisms — Part 1: terminology and performance requirements for chemical risks (44) **ISO 374-5:2016** Protective gloves against dangerous chemicals and micro-organisms — Part 5: terminology and performance requirements for micro-organisms risks (45) **ISO 3864-1:2011** Graphical symbols — Safety colours and safety signs — Part 1: design principles for safety signs and safety markings, 2nd edn (46) **ISO 4849:1981** Personal eye-protectors — Specifications (47) **ISO 7000:2014** Graphical symbols for use on equipment — Registered symbols, 5th edn (48) **ISO 11014:2009** Safety data sheet for chemical products — Content and order of sections (49) **ISO 13688:2013** Protective clothing — General requirements (50) **ISO 15190:2003** Medical laboratories — Requirements for safety (51) **ISO 19238:2014** Radiological protection — Performance criteria for service laboratories performing biological dosimetry by cytogenetics, 2nd edn (52) **ISO 20345:2011** Personal protective equipment — Safety footwear, 2nd edn (53) **ISO 28218:2010** Radiological protection — Performance criteria for radiobioassay (54) **ISO 23601:2009** Safety identification — Escape and evacuation plan signs (55) **ISO 30061:2007** Emergency lighting (56) **ISO 45001:2018** Occupational health and safety management systems — Requirements with guidance for use (57) **ISO/TS 16973:2016** Respiratory protective devices — Classification for respiratory protective device (RPD), excluding RPD for underwater application (58)
	UNECE	Globally harmonized system of classification and labelling of chemicals (GHS), 8th edn (59)
	WHO ††	International minimum requirements for health protection in the workplace (60) Laboratory biosafety manual, 3rd edn (61) Safe management of wastes from health-care activities, 2nd edn (62) Tuberculosis laboratory biosafety manual (63)

5.1.5 ‡‡	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 17)
	ISO	**ISO 10015:1999** Quality management — Guidelines for training (64)
	ISWA	ISWA guidelines on training strategies for healthcare waste management (65)
	WHO	Laboratory biosafety manual, 3rd edn (61, pp. 16-17)
5.1.5 e)	TI	Business principles for countering bribery, 3rd edn (66)
5.1.5 f)	ISO	**ISO/TS 17975:2015** Health informatics — Principles and data requirements for consent in the collection, use or disclosure of personal health information (67)
5.1.6	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd ed (2, p. 17)
5.1.9	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 17)
	ISO	**ISO 30301:2019** Information and documentation — Management systems for records — Requirements, 2nd edn (68) **ISO 30302:2015** Information and documentation — Management systems for records — Guidelines for implementation, 3rd edn (69)
5.2.1 §§	CEN	**EN ISO 361:2015** Basic ionizing radiation symbol (7) **EN ISO 7010:2012+A7:2017** Graphical symbols - Safety colours and safety signs - Registered safety signs (ISO 7010:2011) (70)
	CENELEC ***	**EN 60079-10-1:2015** Explosive atmospheres - Part 10-1: classification of areas - Explosive gas atmospheres (IEC 60079-10-1:2015 + COR1:2015) (71)
	IEC †††	**IEC 60079-10-1:2015** Explosive atmospheres – Part 10-1: classification of areas – Explosive gas atmospheres, 2nd edn (72) **IEC 60079-10-1:2015/COR1:2015** Corrigendum 1 – Explosive atmospheres – Part 10-1: classification of areas – Explosive gas atmospheres, 2nd edn (73)
	ISO	**ISO 361:1975** Basic ionizing radiation symbol (42) **ISO 7010:2019** Graphical symbols — Safety colours and safety signs — Registered safety signs, 3rd edn (74) **ISO 23601:2009** Safety identification — Escape and evacuation plan signs (55)
5.2.2 a)	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 23)
5.2.2 e)	CEN ‡‡‡	**EN 2:1992+A1:2004** Classification of fires (75) **EN 3-7:2014+A1:2007** Portable fire extinguishers - Part 7: characteristics, performance requirements and test methods (76) **EN 54-1:2011** Fire detection and fire alarm systems - Part 1: introduction (77)
	ISO §§§	**ISO 7165:2017** Fire fighting — Portable fire extinguishers — Performance and construction, 3rd edn (78) **ISO 7240-1:2014** Fire detection and alarm systems — Part 1: general and definitions, 3rd edn (79) **ISO 30061:2007** Emergency lighting (56)
5.2.3	CEN and CENELEC	**EN ISO/IEC 17025:2017** General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2017) (80)
	CENELEC ***	**EN 60079-10-1:2015** Explosive atmospheres - Part 10-1: classification of areas - Explosive gas atmospheres (IEC 60079-10-1:2015 + COR1:2015) (71)
	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, pp. 19-22)
	IAEA	Classification of radioactive waste: safety guide (81)
	IEC †††	**IEC 60079-10-1:2015** Explosive atmospheres – Part 10-1: classification of areas – Explosive gas atmospheres, 2nd edn (72) **IEC 60079-10-1:2015/COR1:2015** Corrigendum 1 – Explosive atmospheres – Part 10-1: classification of areas – Explosive gas atmospheres, 2nd edn (73)
	IEC and ISO	**ISO/IEC 17025:2017** General requirements for the competence of testing and calibration laboratories, 3rd edn (82)
	ISO	**ISO 15190:2003** Medical laboratories — Requirements for safety, 2nd edn (51)
	WHO	Safe management of wastes from health-care activities, 2nd edn (62)

5.2.5	ISO	**ISO 15190:2003** Medical laboratories — Requirements for safety, 2nd edn (51)
5.2.6	CEN ****	**EN ISO 14644-1:2015** Cleanrooms and associated controlled environments — Part 1: classification of air cleanliness by particle concentration (ISO 14644-1:2015) (83)
	CENELEC ††††	**EN 60664-1:2007** Insulation coordination for equipment within low-voltage systems – Part 1: principles, requirements and tests (IEC 60664-1:2007) (84) **EN 60825-1:2014** Safety of laser products - Part 1: equipment classification and requirements (IEC 60825-1:2014) (20) **EN 61010-1:2019** Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: general requirements (IEC 61010-1:2010+A1:2019) (21) **EN 61508-1:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: general requirements (IEC 61508-1:2010) (22) **EN 61508-2:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: requirements for electrical/electronic/programmable electronic safety related systems (IEC 61508-2:2010) (23) **EN 61508-3:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: software requirements (IEC 61508-3:2010) (24)
	CIE and ISO ‡‡‡‡	**ISO/CIE 8995-3:2018** Lighting of work places — Part 3: lighting requirements for safety and security of outdoor work places (85)
	CITAC and Eurachem §§§§	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 23)
	IAEA	International basic safety standards for protection against ionizing radiation and for the safety of radiation sources (26) Radiation protection and safety of radiation sources: international basic safety standards (86)
	IARC	Arsenic, metals, fibres, and dusts (87) Benzene (88) Chemical agents and related occupations (89) Non-ionizing radiation, part 1: static and extremely low-frequency (ELF) electric and magnetic fields (90) Non-ionizing radiation, part 2: radiofrequency electromagnetic fields (91) Radiation (92)
	ICNIRP	Guidelines for limiting exposure to electric fields induced by movement of the human body in a static magnetic field and by time-varying magnetic fields below 1 Hz *Health Phys* (93) Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz to 100 kHz) *Health Phys* (94) Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz) *Health Phys* (95) Guidelines on limits of exposure to static magnetic fields *Health Phys* (96) Guidelines on limits of exposure to ultraviolet radiation of wavelengths between 180 nm and 400 nm (incoherent optical radiation) *Health Phys* (97) ICNIRP guidelines on limits of exposure to incoherent visible and infrared radiation *Health Phys* (98) ICNIRP guidelines on limits of exposure to laser radiation of wavelengths between 180 nm and 1,000 mm *Health Phys* (99) Protecting workers from ultraviolet radiation (100) Revision of guidelines on limits of exposure to laser radiation of wavelengths between 400 nm and 1.4 mm *Health Phys* (101)
	IEC *****	**IEC 60664-1:2007** Insulation coordination for equipment within low-voltage systems – Part 1: principles, requirements and tests, 2nd edn (102) **IEC 60825-1:2014** Safety of laser products – Part 1: equipment classification and requirements, 3rd edn (28) **IEC 61010-1:2010** Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (29) **IEC 61010-1:2010/COR1:2011** Corrigendum 1 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (30) **IEC 61010-1:2010/COR2:2013** Corrigendum 2 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (31) **IEC 61010-1:2010/AMD1:2016** Amendment 1 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements, 3rd edn (32)

		IEC 61508-1:2010 Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: general requirements, 2nd edn (35) **IEC 61508-2:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 2: requirements for electrical/electronic/programmable electronic safety related systems, 2nd edn (36) **IEC 61508-3:2010** Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 3: software requirements, 2nd edn (37)
	IEEE	**IEEE Std C95.1-2019** IEEE approved draft standard for safety levels with respect to human exposure to electric, magnetic and electromagnetic fields, 0 Hz to 300 GHz (103) **IEEE Std C95.1-2019/Cor 1** IEEE approved draft standard for safety levels with respect to human exposure to electric, magnetic and electromagnetic fields, 0 Hz to 300 GHz—Corrigendum 1: correction for C95.1-2019 (104) **IEEE Std C95.1-2005** IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz (105) **IEEE Std C95.1a-2010** IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz—Amendment 1: specifies ceiling limits for induced and contact current, clarifies distinctions between localized exposure and spatial peak power density (106) **IEEE Std C95.6-2002** IEEE standard for safety levels with respect to human exposure to electromagnetic fields, 0–3 kHz (107)
	ILO	Ambient factors in the workplace (39) Occupational exposure to airborne substances harmful to health (108)
	ISO ††††††	**ISO 8995-1:2002** Lighting of work places — Part 1: indoor (109) **ISO 8995-1:2002/Cor.1:2005** Technical corrigendum 1 — Lighting of work places — Part 1: indoor (110) **ISO 14644-1:2015** Cleanrooms and associated controlled environments — Part 1: classification of air cleanliness by particle concentration, 2nd edn (111)
	WHO	Electromagnetic fields (400 Hz to 300 GHz) (112) Extremely low frequency fields (113) Hazard prevention and control in the work environment: airborne dust (114) Lasers and optical radiation (115) Magnetic fields (116) Noise (117) Radiofrequency and microwaves (118) Static fields (119) Ultraviolet radiation, 2nd edn (120)
	WHO/Europe	WHO guidelines for indoor air quality: dampness and mould (121) WHO guidelines for indoor air quality: selected pollutants (122)
5.3.1.2	CEN	**EN 61326-2-6:2012** Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-6: particular requirements – In vitro diagnostic (IVD) medical equipment (123)
	CENELEC ‡‡‡‡‡	**EN 55011:2016/A1:2017** Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurements (CISPR 11:2015 , modified) (124)
	ICSH	ICSH guidelines for the valuation of blood cell analysers including those used for differential leucocyte and reticulocyte counting *Int J Lab Hematol* (125) ICSH guidelines for the verification and performance of automated cell counters for body fluids *Int J Lab Hematol* (126) ICSH recommendations for assessing automated high-performance liquid chromatography and capillary electrophoresis equipment for the quantitation of HbAs *Int J Lab Hematol* (127)
	IEC §§§§§	**CISPR 11:2015** Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurements, 6th edn (128) **CISPR 11:2015/AMD1:2016** Amendment 1 – Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurements, 6th edn (129) **CISPR 11:2015/AMD2:2019** Amendment 2 – Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurements, 6th edn (130) **IEC 61326-2-6:2012** Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-6: particular requirements – In vitro diagnostic (IVD) medical equipment, 2nd edn (131)
5.3.1.3	IATA	Lithium battery shipping guidelines, 6th edn (132)

5.3.1.4	CEN ******	**EN ISO 384:2015** Laboratory glass and plastics ware — Principles of design and construction of volumetric instruments (ISO 384:2015), 2nd edn (133) **EN ISO 4787:2011** Laboratory glassware - Volumetric instruments - Methods for testing of capacity and for use (ISO 4787:2010, corrected version 2010-06-15) (134) **EN ISO 8655-1:2002** Piston-operated volumetric apparatus - Part 1: terminology, general requirements and user recommendations (ISO 8655-1:2002) (135)
	CEN and CENELEC	**EN ISO/IEC 17025:2017** General requirements for the competence of testing and calibration laboratories (80)
	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 26)
	IEC and ISO	**ISO/IEC 17025:2017** General requirements for the competence of testing and calibration laboratories, 3rd edn (82)
	ILAC	ILAC policy on the traceability of measurement results (136)
	ILAC and OIML	Guidelines for the determination of calibration intervals of measuring instruments (137)
	ISO ††††††	**ISO 384:2015** Laboratory glass and plastics ware — Principles of design and construction of volumetric instruments, 2nd edn (138) **ISO 4787:2010** Laboratory glassware — Volumetric instruments — Methods for testing of capacity and for use, 2nd edn (139) **ISO 8655-1:2002** Piston-operated volumetric apparatus — Part 1: terminology, general requirements and user recommendations (140) **ISO 8655-1:2002/Cor.1:2008** Technical corrigendum 1 — Piston-operated volumetric apparatus — Part 1: terminology, general requirements and user recommendations (141)
	IUPAC	Metrological traceability of measurement results in chemistry: concepts and implementation (IUPAC Technical Report) *Pure Appl Chem* (142)
5.3.1.5	CEN ‡‡‡‡‡‡	**EN 1089-3:2004** Transportable gas cylinders - Gas cylinder identification (excluding LPG) - Part 3: colour coding (143) **EN ISO 7225:2007+A1:2012** Gas cylinders - Precautionary labels (ISO 7225:2005) (144)
	CENELEC	**EN 62353:2014** Medical electrical equipment - Recurrent test and test after repair of medical electrical equipment (IEC 62353:2014) (145)
	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, pp. 25-26)
	IEC	**IEC 62353:2014** Medical electrical equipment – Recurrent test and test after repair of medical electrical equipment, 2nd edn (146)
	ISO §§§§§§	**ISO 32:1977** Gas cylinders for medical use — Marking for identification of content (147) **ISO 7225:2005** Gas cylinders — Precautionary labels, 2nd edn (148) **ISO 7225:2005/Amd.1:2012** Amendment 1 — Gas cylinders — Precautionary labels, 2nd edn (149) **ISO 15190:2003** Medical laboratories — Requirements for safety (51)
	WHO	Laboratory biosafety manual, 3rd edn (61, p. 111) Maintenance manual for laboratory equipment (150) Medical equipment maintenance programme overview (151)
5.3.1.6	ISO	**ISO 15190:2003** Medical laboratories — Requirements for safety (51)
5.3.1.7	IEC and ISO	**ISO/IEC 19770-2:2015** Information technology — Software asset management — Part 2: software identification tag, 2nd edn (152)
	ISO	**ISO 30301:2019** Information and document — Management systems for records — Requirements, 2nd edn (68) **ISO 30302:2015** Information and documentation — Management systems for records — Guidelines for implementation (69) **ISO 55000:2014** Asset management — Overview, principles and terminology (153) **ISO 55001:2014** Asset management — Management systems — Requirements (154) **ISO 55002:2018** Asset management — Management systems — Guidelines for the application of ISO 55001, 2nd edn (155)
5.3.2.2	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 27)
	ILO	Safety in the use of chemicals at work (40, pp. 33-36)
	OECD	OECD guiding principles for chemical accident prevention, preparedness and response: guidance for industry (including management and labour), public authorities, communities, and other stakeholders (156)

	WHO	Laboratory biosafety manual, 3rd edn (61, pp. 107-109)
5.3.2.3	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 27)
5.3.2.4	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 27)
	WHO	Introduction to medical equipment inventory management (157)
5.3.2.6	ILO	Safety in the use of chemicals at work (40, pp. 57-58)
	ISO	**ISO 15190:2003** Medical laboratories — Requirements for safety (51)
5.3.2.7	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, p. 27)
5.10.3	CEN	**EN ISO 27799:2016** Health informatics — Information security management in health using ISO/IEC 27002 (ISO 27799:2016) (158)
	CEN and CENELEC	**EN ISO/IEC 27001:2017** Information technology — Security techniques — Information security management systems — Requirements (ISO/IEC 27001:2013 including Cor 1:2014 and Cor 2:2015) (159) **EN ISO/IEC 27002:2017** Information technology — Security techniques — Code of practice for information security controls (ISO/IEC 27002:2013 including Cor 1:2014 and Cor 2:2015) (160) **EN ISO/IEC 27040:2016** Information technology - Security techniques - Storage security (ISO/IEC 27040:2015) (161)
	CITAC and Eurachem	Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2, pp. 42-44)
	HL7	HL7 FHIR, R4 (162)
	IHTSDO	SNOMED CT international edition (163)
	IEC and ISO	**ISO/IEC 27000:2018** Information technology — Security techniques — Information security management systems — Overview and vocabulary (164) **ISO/IEC 27001:2013** Information technology — Security techniques — Information security management systems — Requirements (165) **ISO/IEC 27001:2013/Cor.1:2014** Technical corrigendum 1 — Information technology — Security techniques — Information security management systems — Requirements (166) **ISO/IEC 27002:2013** Information technology — Security techniques — Code of practice for information security controls, 2nd edn (167) **ISO/IEC 27002:2013/Cor.1:2014** Technical corrigendum 1 — Information technology — Security techniques — Code of practice for information security controls, 2nd edn (168) **ISO/IEC 27002:2013/Cor.2:2015** Technical corrigendum 2 — Information technology — Security techniques — Code of practice for information security controls, 2nd edn (169) **ISO/IEC 27003:2017** Information technology — Security techniques — Information security management systems — Guidance, 2nd edn (170) **ISO/IEC 27004:2016** Information technology — Security techniques — Information security system — Monitoring, measurement, analysis and evaluation, 2nd edn (171) **ISO/IEC 27007:2017** Information technology — Security techniques — Guidelines for information security management systems auditing, 2nd edn (172) **ISO/IEC 27017:2015** Information technology — Security techniques — Code of practice for information security based on ISO/IEC 27002 for cloud services (173) **ISO/IEC 27031:2011** Information technology — Security techniques — Guidelines for information and communication technology readiness for business continuity (174) **ISO/IEC 27040:2015** Information technology — Security techniques — Storage security (175)
	ISO	**ISO 27799:2016** Health informatics — Information security management in health using ISO/IEC 27002, 2nd edn (176) **ISO/TS 17975:2015** Health informatics — Principles and data requirements for consent in the Collection, Use or Disclosure of personal health information (67)
	ISSA	ISSA guidelines on information and communication technology (177)

† **EN 149:2001+A1:2009** (5)
Clause 5 (Classification) of EN 149:2001+A1:2009 classifies requirements for filtering half masks for respiratory protective devices according to the filtering efficiency and maximum total inward leakage for the selection of suitable personal protective equipment (5, p. 5). Three classes are specified: 'FFP1', 'FFP2' and 'FFP3'. The use of class FFP2 particle filtering half masks by personnel in tuberculosis testing laboratories is recommended by the World Health Organization (63, pp. 39-40). The term 'respiratory protective device' has been defined by the European Committee for Standardization as 'personal protective equipment designed to protect the wearer's respiratory tracts against inhalation of atmospheres that would normally cause ad-verse health effects' in Subclause 3.102 of EN 132:1998 (178, p. 8).

Note (Marking). Clause 9 (Marking) of EN 149:2001+A1:2009 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's respiratory protection (5, pp. 21-22). See Subclauses 9.2 (Particle filtering half mask) (5, pp. 21-22) and 9.2 (Valved gas filtering half mask with separable particle filters) (5, pp. 25-26) of EN 149:2001+A1:2009.

EN 166:2001 (6)
Clause 4 (Classification) of EN 166:2001 classifies requirements for eye-protectors according to function and type for the selection of suitable personal protective equipment (6, pp. 5-6). See Subclauses 4.1 (Function of eye-protectors) (6, p. 5), 4.2 (Types of eye-protectors) (6, p. 5) and 4.3 (Types of ocular) (6, p. 6) of EN 166:2001. Eye-protectors, such as 'goggles' and 'face shields', are commonly used by medical laboratories to provide protection. The term 'goggle' has been defined by the European Committee for Standardization as a 'protector that fully encloses the orbital area and fits firmly on the face' in Subclause 3.5.1.7 of EN ISO 4007:2018 (179, p. 14) and the term 'face shield' has been defined by the European Committee for Standardization as a 'protector that is worn directly or indirectly on the head and covers the eyes and all, or a substantial part, of the face' in Subclause 3.5.1.6 of EN ISO 4007:2018 (179, p. 13).
Note (Marking). Clause 9 (Marking) of EN 166:2001 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's face and body protection (6, pp. 25-33). See Subclauses 9.2 (Ocular marking) (6, pp. 25-30), 9.3 (Frame marking) (6, pp. 30-32) and 9.4 (Marking of eye-protectors where the frame and ocular form a single unit) (6, p. 33) of EN 166:2001.

EN ISO 374-1:2016+A1 (8)
Subclause 5.4 (Permeation) of EN ISO 374-1:2016+A1 classifies requirements for chemical protective gloves according to permeation performance for the selection of suitable personal protective equipment (8, pp. 4-5). Three types are specified: 'Type A', 'Type B' and 'Type C'.
Note (Marking). Clause 6 (Marking) of EN ISO 374-1:2016+A1 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection against dangerous chemical risks (8, pp. 5-7). The pictogram marking contains two graphical symbols from ISO 7000:2014 (48): Operator's manual (ISO 7000-1641) and Protection against chemicals (ISO 7000-2414).

EN ISO 374-5:2016 (9)
Subclause 5.4 (Requirements for different protection types of gloves) of EN ISO 374-5:2016 classifies requirements for microorganism protective gloves according to detectable transfer performance for the selection of suitable personal protective equipment (9, p. 3). Two types are specified: 'Glove protecting against bacteria and fungi' and 'Glove protecting against virus, bacteria and fungi'.
Note (Marking). Clause 6 (Marking) of EN ISO 374-5:2016 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection against microbiological risks (9, pp. 3-4). See Subclauses 6.1 (Marking of Type A gloves) (9, pp. 5-6), 6.2 (Marking of Type B gloves) (9, p. 6) and 6.3 (Marking of Type C gloves) (9, pp. 6-7) of EN ISO 374-5:2016. The pictogram marking contains two graphical symbols from ISO 7000:2014 (48): Operator's manual (ISO 7000-1641) and Protection against micro-organism hazards (ISO 7000-2491).

EN 405:2001+A1:2009 (10)
EN 405:2001+A1:2009 classifies requirements for respiratory protective devices according to required performance standards. See Subclauses 5.4 (Classes of valved gas filtering half masks) (10, p. 7), 7.7.1 (Particle filter penetration) (10, pp. 9-10) and 5.2.1 (Valved gas filtering half masks) (10, p. 7) of EN 405:2001+A1:2009.
Note (Marking). Clause 9 (Marking) of EN 405:2001+A1:2009 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's respiratory protection (10, pp. 25-26).

EN 407:2004 (11)
Note (Marking). Clause 7 (Marking) of EN 407:2004 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection (11, p. 11). The marking includes the performance levels against: 'burning behaviour', as specified in Subclause 6.3 (Burning behaviour) of EN 407:2004 (11, p. 9); 'contact heat', as specified in Subclause 6.4 (Contact heat) of EN 407:2004 (11, p. 9); 'convective heat', as specified in Subclause 6.5 (Convective heat) of EN 407:2004 (11, p. 10); 'radiant heat', as specified in Subclause 6.6 (Radiant heat) of EN 407:2004 (11, p. 10); 'small splashes of molten metal', as specified in Subclause 6.7 (Small drops of molten metal) of EN 407:2004 (11, p. 10); and 'large quantities of molten metal', as specified in Subclause 6.8 (Large quantities of molten metal) of EN 407:2004 (11, p. 10). The pictogram marking contains one graphical symbol from ISO 7000:2014 (48): Protection against heat and flame (ISO 7000-2417).

EN 421:2010 (13)
The term 'radioactive contamination' has been defined by the European Committee for Standardization as 'presence of radioactive substances in or on a material or in a place where they are undesirable or could be harmful' in Subclause 3.2 of EN 421:2010 (13, p. 5) and the term 'ionizing radiation' has been defined by the European Committee for Standardization as 'radiation constituted by particles directly or indirectly ionizing (photons included) or by a mixture of both' in Subclause 3.2 of EN 421:2010 (13, p. 6).
Note (Marking). Clause 6 (Marking) of EN 421:2010 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection against radioactive contamination (13, p. 15). The pictogram marking contains one graphical symbol from ISO 7000:2014 (48): Protection against particulate radioactive contamination (ISO 7000-2484).
Note (Marking). Clause 6 (Marking) of EN 421:2010 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection against ionising radiation (13, pp. 15-16). The pictogram marking contains one graphical symbol from ISO 7000:2014 (48): Protection against ionising radiation (ISO 7000-2809).

EN 511:2006 (14)
Note (Marking). Clause 7 (Marking) of EN 511:2006 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection (14, p. 9). The marking includes the performance levels of: 'convective cold', as specified in Subclause 4.5 (Convective cold) of EN 511:2006 (14, p. 5); 'contact cold', as specified in Subclause 4.6 (Contact cold) of EN 511:2006 (14, p. 5) and 'water penetration', as specified in Subclause 4.3 (Water penetration) of EN 511:2006 (14, pp. 4-5). The pictogram marking contains one graphical symbol from ISO 7000:2014 (48): Protection against cold (ISO 7000-2412).

EN 14387:2004+A1:2008 (16)
EN 14387:2004+A1:2008 classifies requirements for respiratory protective devices according to the required performance standards. See Subclauses 5.1.1 (Gas filters) (16, p. 7), 5.1.4 (Special filters) (16, pp. 7-8) and 5.2 (Classes of filters) (16, p. 8) of EN 14387:2004+A1:2008.
Note (Marking). Subclause 8.2 (Filters) of EN 14387:2004+A1:2008 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's respiratory protection by using a colour coding system to indicate the type and class of filters as well as additional markings (16, pp. 19-20): 'NR' (if the particle filter part of the combined filter is limited to single shift use only) and 'R' (if the particle filter part of the combined filter is re-usable).

EN ISO 13688:2013 (17)
Note (Marking). Clause 7 (Marking) of EN ISO 13688:2013 specifies the marking requirements for providing information for the selection of suitable protective clothing (17, pp. 6-7). Subclause 7.2 e) of EN ISO 13688:2013 specifies the marking requirements for specific product standard identification by using pictogram marking and levels of performance (17, p. 6). The pictogram marking contains graphical symbols from ISO 3758:2012 (180), ISO 7000:2014 (48) and ISO 30023:2010 (181): Protection against ionising radiation (ISO 7000-2809), Protection against chemicals (ISO 7000-2414), Protection against heat and flame (ISO 7000-2417), Protection against particulate radioactive contamination (ISO 7000-2484) and Protection against microorganism hazards (ISO 7000-2491).

EN ISO 20345:2011 (19)
Safety footwear is required for performing certain tasks, as specified in Subclause 12.5 (Footwear) of ISO 15190:2003 (51, p. 12). The term 'safety footwear' has been defined by the European Committee for Standardization as 'footwear incorporating protective features to protect the wearer from injuries that could arise through accidents' in Subclause 3.1 of EN ISO 20345:2011 (19, p. 1) and the term 'safety toecap' has been defined by the European Committee for Standardization as a 'built-in footwear component designed to protect the toes of the wearer from impacts of an energy level of at least 200 J and compression at a load of at least 15 kN' in Subclause 3.12 of EN ISO 20345:2011 (19, p. 3).
Note (Marking). Clause 7 (Marking) of EN ISO 20345:2011 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's foot protection (19, pp. 24-25).

‡ **EN 60825-1:2014** (20)
Subclause 4.3 (Classification rules) of EN 60825-1:2014 classifies ocular hazards according to degree of hazard (20, pp. 24-28). Eight classes are specified: 'Class 1', 'Class 1C', 'Class 1M', 'Class 2', 'Class 2M', 'Class 3R', 'Class 3B' and 'Class 4'.

EN 62471:2008 (25)
Clause 6 (Lamp classification) of EN 62471:2008 classifies continuous wave lamp photobiological hazards according to degree of risk (25, pp. 23-25). Three groups are specified: 'Risk Group 1' (low risk), 'Risk Group 2' (moderate risk) and 'Risk Group 3' (high risk).

§ **IEC 60825-1:2014** (28)
Subclause 4.3 (Classification rules) of IEC 60825-1:2014 classifies ocular hazards according to degree of hazard (28, pp. 24-28). Eight classes are specified: 'Class 1', 'Class 1C', 'Class 1M', 'Class 2', 'Class 2M', 'Class 3R', 'Class 3B' and 'Class 4'.

IEC 62471:2006 (38)
Clause 6 (Lamp classification) of IEC 62471:2006 classifies continuous wave lamp photobiological hazards according to degree of risk (38, pp. 23-25). Three groups are specified: 'Risk Group 1' (low risk), 'Risk Group 2' (moderate risk) and 'Risk Group 3' (high risk).

** **ISO 374-1:2016** (43) and **ISO 374-1:2016/Amd.1:2018** (44)
Subclause 5.4 (Permeation) of ISO 374-1:2016 classifies requirements for chemical protective gloves according to permeation performance for selection of suitable personal protective equipment (43, pp. 4-5). Three types are specified: 'Type A', 'Type B' and 'Type C'.
Note (Marking). Clause 6 (Marking) of ISO 374-1:2016/Amd.1:2018 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection (44, p. 1). The pictogram marking contains two graphical symbols from ISO 7000:2014 (48): Operator's manual (ISO 7000-1641) and Protection against chemicals (ISO 7000-2414).

ISO 374-5:2016 (45)
Subclause 5.4 (Requirements for different protection types of gloves) of ISO 374-5:2016 classifies requirements for microorganism protective gloves according to detectable transfer performance for the selection of suitable personal protective equipment (45, p. 3). Two types are specified: 'Glove protecting against bacteria and fungi' and 'Glove protecting against virus, bacteria and fungi'.
Note (Marking). Clause 6 (Marking) of ISO 374-5:2016 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's hand protection (45, pp. 3-4). The pictogram marking

contains two graphical symbols from ISO 7000:2014 (48): Operator's manual (ISO 7000-1641) and Protection against microorganism hazards (ISO 7000-2491).

ISO 4849:1981 (47)
Clause 7 (Requirements) of ISO 4849:1981 classifies requirements for eye-protectors according to function and type for the selection of suitable personal protective equipment (47, pp. 3-6). Protectors, such as 'goggles' and 'face shields', are commonly used by medical laboratories to provide protection. The term 'goggle' has been defined by the International Organization for Standardization as a 'protector that fully encloses the orbital area and fits firmly on the face' in Subclause 3.5.1.7 of ISO 4007:2018 (182, p. 14) and the term 'face shield' has been defined by the International Organization for Standardization as a 'protector that is worn directly or indirectly on the head and covers the eyes and all, or a substantial part, of the face' in Subclause 3.5.1.6 of ISO 4007:2018 (182, p. 13).
Note (Marking). Clause 9 (Identification) of ISO 4849:1981 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's face and body (47, p. 6).

ISO 13688:2013 (50)
Note (Marking). Clause 7 (Marking) of ISO 13688:2013 specifies the marking requirements for providing information for the selection of suitable protective clothing (50, pp. 6-7). Subclause 7.2 e) of ISO 13688:2013 specifies the marking requirements for specific product standard identification by using pictogram markings and levels of performance (50, p. 6). The pictogram marking contains graphical symbols from ISO 3758:2012 (180), ISO 7000:2014 (48) and ISO 30023:2010 (181): Protection against ionising radiation (ISO 7000-2809), Protection against chemicals (ISO 7000-2414), Protection against heat and flame (ISO 7000-2417), Protection against particulate radioactive contamination (ISO 7000-2484) and Protection against microorganism hazards (ISO 7000-2491).

ISO 20345:2011 (53)
Safety footwear is required for performing certain tasks, as specified in Subclause 12.5 (Footwear) of ISO 15190:2003 (51, p. 12). The term 'safety footwear' has been defined by the International Organization for Standardization as 'footwear incorporating protective features to protect the wearer from injuries that could arise through accidents' in Subclause 3.1 of ISO 20345:2011 (53, p. 1) and the term 'safety toecap' has been defined by the International Organization for Standardization as a 'built-in footwear component designed to protect the toes of the wearer from impacts of an energy level of at least 200 J and compression at a load of at least 15 kN' in Subclause 3.12 of ISO 20345:2011 (53, p. 3).
Note (Marking). Clause 7 (Marking) of ISO 20345:2011 specifies the marking requirements for providing information for the selection of suitable personal protective equipment relating to personnel's footwear (53, pp. 24-25).

ISO/TS 16973:2016 (58)
ISO/TS 16973:2016 classifies the requirements for respiratory protective devices according to required performance standards for the selection of suitable personal protective equipment. See Clauses 5 (Protection classes) (58, p. 2), 6 (Work rate) (58, p. 2), 7 (Respiratory interface class) (58, p. 3), 8 (Supplied breathable gas RPD capacity class) (58, p. 3) and 9 (Filter class) (58, pp. 3-5) of ISO/TS 16973:2016.
Note (Marking). Clause 12 (Sequence of marking information) of ISO/TS 16973:2016 specifies the marking requirements for providing information for the selection of suitable personal protective equipment for personnel's respiratory protection (58, pp. 8-9).

†† **Laboratory biosafety manual, 3rd edn** (61)
Laboratory biosafety manual, 3rd edn, classifies the relative hazards of infective microorganisms (61, p. 1). Four groups are specified: 'Risk Group 1' (no or low individual and community risk), 'Risk Group 2' (moderate individual risk, low community risk), 'Risk Group 3' (high individual risk, low community risk) and 'Risk Group 4' (high individual and community risk).

Laboratory biosafety manual, 3rd edn, classifies the medical laboratory facility biosafety level according to a composite of design features, construction, containment facilities, equipment, practices and operational procedures required for handling microbiological risks (61, pp. 1-3). Four levels are specified: 'Biosafety level 1' (basic), 'Biosafety level 2' (basic), 'Biosafety level 3' (containment) and 'Biosafety level 4' (maximum containment).

Laboratory biosafety manual, 3rd edn, classifies the type of protection provision into biological safety cabinet classes (61, pp. 51-57). Three classes are specified: 'Class I', 'Class II' and 'Class III' as well as further classifying Class II biological safety cabinet into four types (61, p. 53): 'A1', 'A2', 'B1' and 'B2'.

Safe management of wastes from health care activities, 2nd edn (62)
Safe management of wastes from health-care activities, 2nd edn, specifies a waste-segregation system using three colours and supplemented with relevant symbols (62, pp. 78-79).

‡‡ **ISO 15189:2012** (183)
The training content of health and safety requirements in Subclause 5.1.5 d) of ISO 15189:2012 (183, p. 20) should be in alignment with the content of Subclause 5.1.4 (Personnel introduction to the organizational environment) of ISO 15189:2012 (183, p. 20); therefore, the relevant references are not repeatedly listed.

§§ **ISO 15189:2012** (183)
Subclause 5.2.1 (General) of ISO 15189:2012 (183, p. 21) implementation should be in alignment with the strategic implementation considerations in Subclause 4.1.1.4 e) of ISO 15189:2012 (183, p. 7).

*** **EN 60079-10-1:2015** (71)
Subclause 7.1 (General) of EN 60079-10-1:2015 classifies the type of hazardous area zone according to the likelihood of the presence of an explosive gas atmosphere (71, p. 26). Three zones are specified: 'Zone 0', 'Zone 1' and 'Zone 2'.

††† **IEC 60079-10-1:2015** (72)
Subclause 7.1 (General) of IEC 60079-10-1:2015 classifies the type of hazardous area zone according to the likelihood of the presence of an explosive gas atmosphere (72, p. 26). Three zones are specified: 'Zone 0', 'Zone 1' and 'Zone 2'.

‡‡‡ **EN 2:1992+A1:2004** (75)
Clause 2 (Definition and designation of classes of fires) of EN 2:1992+A1:2004 classifies fire according to nature (75, p. 3). Five classes are specified: 'Class A' (solid materials), 'Class B' (liquids or liquefiable solids), 'Class C' (gases), 'Class D' (metals) and 'Class F' (cooking media in cooking appliances).

EN 3-7:2014+A1:2007 (76)
Note (Marking). Subclause 16.2 (Marking) of EN 3-7:2014+A1:2007 specifies the marking requirements for providing information for the selection of suitable firefighting equipment for fire protection for personnel (76, pp. 20-24). The marking is divided into five parts: parts 1, 2, 3 and 5 must be contained on the same label, part 4 may be placed anywhere on the extinguisher; and part 2 contains a code letter, 'A', 'B', 'C', 'D' or 'F', representing the class of fire that the extinguisher can be used to suppress.

§§§ **ISO 7165:2017** (78)
Subclause 8.1 (Rating suitability for the various classes of fire) of ISO 7165:2017 classifies fire according to nature (78, pp. 18-20). Five classes are specified: 'Class A' (solid materials), 'Class B' (liquids or liquefiable solids), 'Class C' (gases), 'Class D' (metals) and 'Class F' (cooking media in cooking appliances).
Note (Marking). Subclause 10.2 (Marking) of ISO 7165:2017 specifies the marking requirements for providing information for the selection of suitable firefighting equipment for protecting personnel from fire (78, pp. 50-53). The marking is divided into five parts: parts 1, 2, 3 and 5 must be contained on the same label, and part 4 may be placed anywhere on the extinguisher.

**** **EN ISO 14644-1:2015** (83)
Subclause 4.3 (ISO Class number) of EN ISO 14644-1:2015 classifies requirements for air cleanliness by particle concentration (83, pp. 4-5). Nine classes are specified: 'ISO Class 1' to 'ISO Class 9'.

†††† **EN 60664-1:2007** (84)
Subclause 4.6.2 (Degrees of pollution in the micro-environment) of EN 60664-1:2007 classifies the effect of micro-environment pollution on insulation (84, p. 20). Four degrees are specified: 'Pollution degree 1' (the pollution has no influence), 'Pollution degree 2' (non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is to be expected), 'Pollution degree 3' (conductive pollution or dry non-conductive pollution occurs) and 'Pollution degree 4' (continuous conductivity occurs due to conductive dust, rain or other wet conditions).

‡‡‡‡ **ISO/CIE 8995-3:2018** (85)
ISO/CIE 8995-3:2018 implementation must be considered if operations of the medical laboratory's processes are associated with mobile facilities.

§§§§ **Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn** (2)
Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn, classifies the environmental factors that can influence the quality of results in the examination process (2, p. 23). Five factors are specified: temperature, humidity, vibration, airborne and dustborne microbiological contamination, as well as lighting.

***** **IEC 60664-1:2007** (102)
Subclause 4.6.2 (Degrees of pollution in the micro-environment) of IEC 60664-1:2007 classifies the effect of micro-environment pollution on the insulation (102, p. 20). Four degrees are specified: 'Pollution degree 1' (the pollution has no influence), 'Pollution degree 2' (non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is to be expected), 'Pollution degree 3' (conductive pollution or dry non-conductive pollution occurs) and 'Pollution degree 4' (continuous conductivity occurs due to conductive dust, rain or other wet conditions).

††††† **ISO 8995-1:2002** (109)
Clause 5 (Schedule of lighting requirements) of ISO 8995-1:2002 specifies the lighting requirements for various tasks (109, pp. 9-17). Three requirements are specified: maintained illuminance, glare limitation in limiting unified glare rating (UGR_L) and colour quality in colour rendering index (R_a).

ISO 14644-1:2015 (111)
Subclause 4.3 (ISO Class number) of ISO 14644-1:2015 classifies requirements for air cleanliness by particle concentration (111, pp. 4-5). Nine classes are specified: 'ISO Class 1' to 'ISO Class 9'.

‡‡‡‡‡ **EN 55011:2016+A1:2017** (124)
Clause 5 (Classification of equipment) of EN 55011:2016+A1:2017 classifies requirements for equipment into groups and classes according to electromagnetic compatibility (124, p. 16). Subclause 5.1 (Separation into groups) of EN 55011:2016+A1:2017 specifies two groups of equipment (124, p. 16): 'Group 1 equipment' and 'Group 2 equipment', and Subclause 5.2 (Division into classes) of EN 55011:2016+A1:2017 specifies two classes of equipment (124, p. 16): 'Class A equipment' and 'Class B equipment'.

§§§§§ **CISPR 11:2015** (128)

Clause 5 (Classification of equipment) of CISPR 11:2015 classifies requirements for equipment into groups and classes according to electromagnetic compatibility (128, p. 16). Subclause 5.1 (Separation into groups) of CISPR 11:2015 specifies two groups of equipment (128, p. 16): 'Group 1 equipment' and 'Group 2 equipment', and Subclause 5.2 (Division into classes) of CISPR 11:2015 specifies two classes of equipment (128, p. 16): 'Class A equipment' and 'Class B equipment'.

****** **EN ISO 384:2015** (133)

Subclause 5.1 of EN ISO 384:2015 specifies the classification requirements for volumetric accuracy according to the metrological tolerances (133, pp. 1-2). Two classes are specified: 'class A' or 'class AS' (higher grade) and 'class B' (lower grade).

Note (Marking). Clause 12 (Marking) of EN ISO 384:2015 specifies the marking requirements for providing information for the selection of suitable volumetric instrument (133, pp. 10-11).

†††††† **ISO 384:2015** (138)

Subclause 5.1 of ISO 384:2015 specifies the classification requirements for volumetric accuracy according to the metrological tolerances (138, pp. 1-2). Two classes are specified: 'class A' or 'class AS' (higher grade) and 'class B' (lower grade).

Note (Marking). Clause 12 (Marking) of ISO 384:2015 specifies the marking requirements for providing information for the selection of suitable volumetric instrument (138, pp. 10-11).

‡‡‡‡‡‡ **EN 1089-34:2011** (143)

Note (Marking). Clause 6 (Colour coding system) of EN 1089-34:2011 specifies the marking requirements for providing information for the selection of suitable gases (143, pp. 6-8): a colour coding system is specified to give information about the contents of gas cylinders.

§§§§§§ **ISO 32:1977** (147)

Note (Marking). Clause 2 (Marking) of ISO 32:1977 specifies the marking requirements for providing information for the selection of suitable gases (147, p. 1): the cylinder must be marked with the name of the gas it contains and Clause 3 (Colour marking) of ISO 32:1977 specifies a colour coding system to give information about the contents of gas cylinders (147, p. 1).

Table S3. Suggested environmental factors in Subclause 5.2.6 (Facility maintenance and environmental conditions) of ISO 15189:2012 that may adversely influence the health of personnel.

Factors (*n* = 18)	**Organisations** (*n* = 62)	**References** (*n* = 75)
Light *******	CIE and ISO	85
	ISO	109, 110
Sterility	CEN	83
	CENELEC	84
	CITAC and Eurachem	2, p. 23
	IEC	102
	ISO	111
	WHO/Europe	121, 122
Dust †††††††	IARC	87
	ICOH	27, pp 30-37
	ILO	108
	WHO	114
Noxious or hazardous fumes	IARC	88, 89
	ILO	39, pp. 21-26
Electromagnetic interference	ICNIRP	96
	ILO	39, pp. 33-36
	WHO	112, 113, 116, 119
Radiation (extreme ultraviolet to γ)	IAEA	26, 86
	IARC	92, pp. 103-283
	ILO	39, pp. 27-32

Radiation (extremely low frequency)	IARC	90
	ICNIRP	93
	WHO	113
Radiation (extremely low frequency to low frequency) (f: 1 Hz to 100 kHz)	IARC	90
	ICNIRP	94
	IEEE	103-107
	ILO	39, pp. 33-36
	WHO	113
Radiation (low frequency to extremely high frequency) (f: 100 kHz to 300 GHz)	IARC	91
	IEEE	103-107
	ICNIRP	95
	ILO	39, pp. 33-36
	WHO	118
Radiation (ultraviolet) (λ: 100 nm to 400 nm)	IARC	92, pp. 35-101
	ICNIRP	97, 100
	ILO	39, pp. 37-41
	WHO	120
Radiation (laser) (λ: 180 nm to 1 mm)	CENELEC	20
	IEC	28
	ILO	41
	WHO	115
Radiation (λ: 200 nm to 1400 nm) ‡‡‡‡‡‡‡	CENELEC	25
	IEC	38
Radiation (infrared) (λ: 780 nm to 1 mm)	ICNIRP	98, 99, 101
	ILO	39, pp. 37-41
	WHO	115
Humidity	CITAC and Eurachem	2, p. 23
Electrical supply §§§§§§§	IARC	90
	ICNIRP	94
	ILO	39, pp. 33-36
	WHO	113
Temperature	CITAC and Eurachem	2, p. 23
	ILO	39, pp. 42-48
Sound level	ILO	39, pp. 49-53
	WHO	117
Vibration level	CITAC and Eurachem	2, p. 23
	ILO	39, pp. 54-57

******* An appropriate illuminance level in the medical laboratory must be maintained for personnel to perform assigned tasks. The illuminance level must provide a reasonable environment for personnel to maintain the health of their visual system.

For more information:
ISO/CIE 8995-3:2018 (85) See ††††.
ISO 8995-1:2002 (109) and **ISO 8995-1:2002/Cor.1:2005** (110) See †††††.

††††††† Good housekeeping practices must be implemented by the medical laboratory to maintain a reasonably clean condition. These practices must provide effective protection to personnel against exposure to dusts.

For more information:
Arsenic, metals, fibres, and dusts (87)
Arsenic, metals, fibres, and dusts specifies the carcinogenicity of leather dust, silica dust and wood dust to humans (87, pp. 317‑465).
Hazard prevention and control in the work environment: airborne dust (114)
Hazard prevention and control in the work environment: airborne dust specifies hazard classification into five groups (114, p. 52): 'Hazard Group A' (skin and eye irritants), 'Hazard Group B' (harmful), 'Hazard Group C' (toxic), 'Hazard Group D' (very toxic) and 'Hazard Group E' (more severe effects).

‡‡‡‡‡‡‡ Appropriate protective practices must be implemented by the medical laboratory where visual display terminals are used by the medical laboratory personnel. The protective practices must be able to provide blue light (L_B) protection to personnel to maintain the health of the visual system, which could be impaired by conditions, such as photoretinitis.

For more information:
EN 62471:2008 (25)
Clause 5 (Measurement of lamps and lamp systems) of EN 62471:2008 specifies the hazard exposure limits of L_B for the retina (25, p. 15). Exposure to L_B from visual display terminals in the medical laboratory may impair the health of the visual system of personnel.
IEC 62471:2008 (38)
Clause 5 (Measurement of lamps and lamp systems) of IEC 62471:2008 specifies the hazard exposure limits of L_B for the retina (38, p. 15). Exposure to L_B from visual display terminals in the medical laboratory may impair the health of the visual system of personnel.

§§§§§§§ Appropriate countermeasures to magnetic fields produced by electric current must be implemented by the medical laboratory for personnel. The countermeasures must provide effective protection to personnel against magnetic fields, especially magnetic fields generated by laboratory equipment.

Table S4. Suggested environmental factors in Subclause 5.2.6 (Facility maintenance and environmental conditions) of ISO 15189:2012 that may adversely influence the quality of results in the examination process.

Factors (n = 11)	**Organisations** (n = 31)	**References** (n = 47)
Light ********	CITAC and Eurachem	2, p. 23
	ISO	109, 110
Sterility ††††††††	CEN	83
	CENELEC	84
	CITAC and Eurachem	2, p. 23
	IEC	102
	ISO	111
Dust ††††††††	CITAC and Eurachem	2, p. 23
	WHO	114
Noxious or hazardous fumes ‡‡‡‡‡‡‡‡	CENELEC	21, 71
	IEC	29‑32, 72, 73
Electromagnetic interference	WHO	112, 113, 116, 119
Radiation §§§§§§§§	CENELEC	21
	IEC	29‑32
Humidity ††††††††	CEN	21
	CITAC and Eurachem	2, p. 23
	IEC	29‑32
Electrical supply *********	CENELEC	21
	IEC	29‑32
	WHO	113
Temperature ††††††††	CENELEC	21
	CITAC and Eurachem	2, p. 23
	IEC	29‑32

Sound level ††††††††	WHO	117
Vibration level ‡‡‡‡‡‡‡‡	CITAC and Eurachem	2, p. 23

******** An appropriate illuminance level in the areas of operations must be maintained by the medical laboratory for the personnel to perform assigned tasks. In the case of excessive illuminance levels, such as concentrated light intensity, including sunlight, directly onto the laboratory equipment, there is a possibility of measurement distortions in the examination process. The illuminance level must provide a reasonable environment for operational processes within environmental specifications.

For more information:
Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2) See §§§§.
ISO 8995-1:2002 (109) and **ISO 8995-1:2002/Cor.1:2005** (110) See †††††.

†††††††† An appropriate operating environment must be maintained by the medical laboratory where laboratory equipment is operated. The environmental factors, such as sterility, dust, humidity and temperature, must not cause measurement distortions in the examination process. Laboratory equipment must be operated in a medical laboratory that has an acceptable operating environment as specified by the manufacturers. In most cases, laboratory equipment should be operated in an environment that has an applicable pollution degree, such as 'Pollution degree 2'. The term 'Pollution degree 2' has been defined by the International Electrotechnical Commission as 'only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is expected' in Subclause 3.6.8 of IEC 61010-1:2010 (29, p. 25).

For more general information:
EN 61010-1:2010/A1:2019/AC:2019-04 (21)
Instruments should be operated in a 'Pollution degree 2' classified environment, as specified in Subclause 1.4.1 h) of EN 61010-1:2010/A1:2019/AC:2019-04 (21, p. 18).
IEC 61010-1:2010 (29)
Instruments should be operated in a 'Pollution degree 2' classified environment, as specified in Subclause 1.4.1 h) of IEC 61010-1:2010 (29, p. 18).

For more information relating to sterility:
EN ISO 14644-1:2015 (83) See ****.
EN 60664-1:2007 (84) See ††††.
Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2) See §§§§.
IEC 60664-1:2007 (102) See *****.
ISO 14644-1:2015 (111) See †††††.

For more information relating to dust:
Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2) See §§§§.

For more information relating to humidity and temperature:
EN 61010-1:2010/A1:2019/AC:2019-04 (21)
Subclause 1.4.1 (Normal environmental conditions) of EN 61010-1:2010/A1:2019/AC:2019-04 specifies reasonably safe operating environmental conditions that can be applied to laboratory equipment (21, p. 18). More specifically, the following conditions should be maintained where it is operationally feasible to do so: 'maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C', as specified in Subclause 1.4.1 d) of EN 61010-1:2010/A1:2019/AC:2019-04 (21, p. 18). These conditions contribute to an environment that could reduce the risk of electrical shock and fire hazards resulting from the effects of condensation and excessive temperature fluctuations on laboratory equipment.
Note (Environmental conditions). See Subclause 1.4.1 (Normal environmental conditions) (21, p. 18), Clauses 6 (Protection against electric shock) (21, pp. 39-70) and 10 (Equipment temperature limits and resistance to heat) (21, pp. 88-92) of EN 61010-1:2010/A1:2019/AC:2019-04.

IEC 61010-1:2010 (29)
Subclause 1.4.1 (Normal environmental conditions) of IEC 61010-1:2010 specifies reasonably safe operating environmental conditions for laboratory equipment (29, p. 18). More specifically, the following conditions should be maintained where it is operationally feasible to do so: 'maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % relative humidity at 40 °C', as specified in Subclause 1.4.1 d) of IEC 61010-1:2010 (29, p. 18). These conditions contribute to an environment that could reduce the risk of electrical shock and fire hazards resulting from the effects of condensation and excessive temperature fluctuations on laboratory equipment.
Note (Environmental conditions). See Subclause 1.4.1 (Normal environmental conditions) (29, p. 18), Clauses 6 (Protection against electric shock) (29, pp. 39-70) and 10 (Equipment temperature limits and resistance to heat) (29, pp. 88-92) of IEC 61010-1:2010.

‡‡‡‡‡‡‡ Hazardous fumes, especially flammable gases, in the atmosphere of the medical laboratory must be properly controlledand monitored at all times. The medical laboratory must ensure that chemicals that pose flammability hazard are identified for special handling. Flammable limits of common chemicals range between 20 °C for bromosilane and 688 °C for acetone cyanohydrin (184). Flammable limits of chemicals must be strictly observed by the medical laboratory, especially their ignition temperature.

For more information:
EN 61010-1:2010/A1:2019/AC:2019-04 (21)
Subclause 1.4.1 (Normal environmental conditions) of EN 61010-1:2010/A1:2019/AC:2019-04 specifies reasonably safe operating environmental conditions for laboratory equipment (21, p. 18) (see also ††††††††).
Note (Environmental conditions). See Clause 13 (Protection against liberated gases and substances, explosion and implosion) of EN 61010-1:2010/A1:2019/AC:2019-04 (21, pp. 98-99).

IEC 61010-1:2010 (29)
Subclause 1.4.1 (Normal environmental conditions) of IEC 61010-1:2010 specifies reasonably safe operating environmental conditions for laboratory equipment (29, p. 18) (see also ††††††††).
Note (Environmental conditions). See Clause 13 (Protection against liberated gases and substances, explosion and implosion) of IEC 61010-1:2010 (29, pp. 98-99).

§§§§§§§§ The laboratory equipment in the medical laboratory must be sited away from strong electromagnetic radiation sources to minimise electromagnetic interference during examination processes and retained in a serviceable condition (see also §§§§§).

Note (Environmental conditions). See Clause 12 (Protection against radiation, including laser sources, and against sonic and ultrasonic pressure) of EN 61010-1:2010/A1:2019/AC:2019-04 (21, pp. 95-98).
Note (Environmental conditions). See Clause 12 (Protection against radiation, including laser sources, and against sonic and ultrasonic pressure) of IEC 61010-1:2010 (29, pp. 95-98).

********* The electrical supply voltage to laboratory equipment must be within an acceptable range to ensure voltage fluctuations and flickers are within manufacturers' specifications to minimise the risk of electrical damage to laboratory equipment.

The use of suitable uninterruptible power supply units to laboratory equipment can ensure the continuity of the relevant pre-examination, examination and post-examination processes.

For more information:
EN 61010-1:2010/A1:2019/AC:2019-04 (21)
The mains supply voltage fluctuations should not exceed ± 10 % of the nominal voltage, as specified in Subclause 1.4.1 e) of EN 61010-1:2010/A1:2019/AC:2019-04 (21, p. 18).
IEC 61010-1:2010 (29)
The mains supply voltage fluctuations should not exceed ± 10 % of the nominal voltage, as specified in Subclause 1.4.1 e) of IEC 61010-1:2010 (29, p. 18).

†††††††††† Noise, as undesirable sound, generated from the pre-examination and examination processes must be kept by the medical laboratory to an acceptable level for personnel to operate. Noise generally ranges between 20 Hz to 20000 Hz (185, 186) and can mask auditory alarm signals of laboratory equipment from personnel. Attention should be paid to the background noise level, so that it should cause minimal distraction to personnel's ability to react to auditory alarm signals which range between 45 dB and 85 dB (187, p. 54). The noise level must be controlled at source so that noise exposure to personnel is kept to a reasonable level in the medical laboratory.

‡‡‡‡‡‡‡‡‡ Laboratory equipment, including hardware and software of instruments, measuring systems, and laboratory information systems, must be maintained to retain its availability and serviceability. Instruments with mechanical moving parts may generate excessive vibrations causing unnecessary maintenance downtime. Vibrations can be periodic, stationary random, nonstationary random, or transient; and most rotary instruments vibrate at frequencies between 1 Hz and 20000 Hz (188, p. 1537). Critical laboratory equipment must be maintained effectively to ensure it is in a committable and operable state.

For more information:
Guide to quality in analytical chemistry: an aid to accreditation, 3rd edn (2) See §§§§.

Table S5. Additional resources associated with the process control, design and planning stage of ISO 15189:2012.

Subclauses (*n* = 25)	References (*n* = 223)
4.6	A short guide to procurement risk (189) Could your supplier become too powerful? *McKinsey Q* (190) Essentials of supply chain management, 4th edn (191) How much is too much? *Qual Progr* (192) IT outsourcing in the face of global and technology challenges, in: Encyclopedia of information science and technology, 3rd edn (193) Principles of supply chain management: a balanced approach, 5th edn (194) Procurement and supply chain management, 9th edn (195) Procurement principles and management, 11th edn (196) Purchasing and supply chain management, 3rd edn (197) Purchasing and supply chain management, 7th edn (198) Supplier development, in: Managing quality: an essential guide and resource gateway, 6th edn (199) Supplier relationship management: how to maximize vendor value and opportunity (200) The art of successful information systems outsourcing (201) *The ASQ Supply Chain Management Primer* (202) *The Certified Quality Engineer Handbook*, 4th edn (203) The definitive guide to supply management and procurement: principles and strategies for establishing efficient, effective, and sustainable supply management operations (204) The procurement and supply manager's desk reference, 2nd edn (205) *The Supplier Management Handbook*, 6th edn (206) Understanding and managing IT outsourcing: a partnership approach (207)
5.1.2	Qualifications, in: Encyclopedia of human resource management (208)
5.1.3	Job analysis for knowledge, skills, abilities, and other characteristics, predictor measures, and performance outcomes, in: The Oxford handbook of personnel assessment and selection (209) Job description, in: Encyclopedia of human resource management (210) Person specification, in: Encyclopedia of human resource management (211) The job description handbook, 3rd edn (212)
5.1.4	Employee assistance programs, in: The SAGE encyclopedia of industrial and organizational psychology, 2nd edn (213) Employee wellness programs, in: The SAGE encyclopedia of industrial and organizational psychology, 2nd edn (214) Fire safety and security, in: Physical security and safety: a field guide for the practitioner (215) Handbook of fire and explosion protection engineering principles: for oil, gas, chemical, and related facilities, 2nd edn (216) Induction, in: Encyclopedia of human resource management (217) New employee orientation, in: The SAGE encyclopedia of industrial and organizational psychology, 2nd edn (218)
5.1.5	50 tips for more effective safety training (219) A "one-safe" approach: continuous safety training initiatives, in: Biological safety: principles and practices, 4th edn (220) Can training for safe practices reduce the risk of organizational liability? in: Handbook of human factors in litigation (221) Changing sexual harassment within organizations via training interventions: suggestions and empirical data, in: The fulfilling workplace: the organization's role in achieving individual and organizational health (222) Enhancing business ethics: prescriptions for building better ethics training, in: Ethics training in action: an examination of issues, techniques, and development (223) Ethics training programs, in: The SAGE encyclopedia of business ethics and society, 2nd edn (224) Ethics training, in: The SAGE encyclopedia of industrial and organizational psychology, 2nd edn (225) Evaluating technical training, in: ASTD handbook of measuring and evaluating training (226) Indicators of quality assessment, in: Handbook of workplace assessment: evidence-based practices for selecting and developing organizational talent (227) Knowledge, skills and abilities, in: Encyclopedia of human resource management (228) Managing an information security and privacy awareness and training program, 2nd edn (229) Planning your evaluation project, in: ASTD handbook of measuring and evaluating training (230) Strategy and training: making skills a competitive advantage (231) Teaching and training in ethics, in: Applied ethics: strengthening ethical practices (232) Team training for patient safety, in: Handbook of human factors and ergonomics in health care and patient safety, 2nd edn (233) Training design, in: Human factors in practice: concepts and applications (234) Training evaluation, in: Encyclopedia of human resource management (235) Training evaluation, in: The Wiley Blackwell handbook of the psychology of training, development, and performance improvement (236) Training management, in: Dos and don'ts in human resources management: a practical guide (237) Why teamwork matters: enabling health care team effectiveness for the delivery of high-quality patient care, in: Developing and enhancing teamwork in organizations: evidence-based best practices and guidelines (238) Workplace learning: organizations, ethics, and issues, in: The SAGE handbook of workplace learning (239)

5.1.6	Competence and training management, in: A handbook of business transformation management methodology (240) Competence development and management, in: The SAGE encyclopedia of quality and the service economy (241) Competence, in: Encyclopedia of human resource management (242) Competence: bases for employee effectiveness, in: Handbook of human resource development (243) Competencies at work: providing a common language for talent management (244) Performance appraisals and competency assessment, in: Clinical laboratory management, 2nd edn (245)
5.1.7	2600 phrases for setting effective performance goals: ready-to-use phrases that really get results (246) A short guide to people management (247) Capability procedures, in: Encyclopedia of human resource management (248) Performance appraisal, in: The SAGE encyclopedia of industrial and organizational psychology, 2nd edn (249) Performance appraisals and competency assessment, in: Clinical laboratory management, 2nd edn (245) Performance feedback, in: The SAGE encyclopedia of industrial and organizational psychology, 2nd edn (250)
5.1.8	Continuing professional development, in: Encyclopedia of human resource management (251)
5.2.1	Biosafety for microorganisms transmitted by the airborne route, in: Biological safety: principles and practices, 4th edn (252) Safety considerations in the biosafety level 4 maximum-containment laboratory, in: Biological safety: principles and practices, 4th edn (253)
5.2.2	Access control, security, and trust: a logical approach (254) Automation and design of the clinical microbiology laboratory, in: Manual of clinical microbiology, 12th edn (255) Biohazard containment, in: Clinical microbiology procedures handbook, 4th edn (256) Biological safety and biohazard prevention, in: Clinical microbiology procedures handbook, 4th edn (257) Biotechnology laboratories: promoting health and productivity with ergonomics, in: Ergonomic workplace design for health, wellness, and productivity (258) Design of biomedical laboratory and specialized biocontainment facilities, in: Biological safety: principles and practices, 4th edn (259) Establishing a molecular diagnostics laboratory, in: Henry's clinical diagnosis and management by laboratory methods, 23rd edn (260) Facilities design, 4th edn (261) Fire safety management handbook, 3rd edn (262) Guide to environment safety & health management: developing, implementing, & maintaining a continuous improvement program (263) Handbook of environmental health, 4th edn. Vol. 1 (264) Handbook of environmental health, 4th edn. Vol. 2 (265) The facility management handbook, 3rd edn (266) Human safety and risk management: a psychological perspective, 3rd edn (267) Infection control in the laboratory, in: Clinical microbiology procedures handbook, 4th edn (268) Laboratory design, in: Clinical virology manual, 5th edn (269) Laboratory practice, in: Postgraduate haematology, 5th edn (270) Laboratory safety, in: Clinical virology manual, 5th edn (271) Laboratory safety, in: Handbook of modern hospital safety, 2nd edn (272) Laboratory safety: a self-assessment workbook, 2nd edn (273) Levels of laboratory safety, in: Clinical microbiology procedures handbook, 4th edn (274) Locks and access control, in: Physical security and safety: a field guide for the practitioner (275) Office workplaces, in: Ergonomic workplace design for health, wellness, and productivity (276) Overall physical protection program, in: Physical security and safety: a field guide for the practitioner (277) Principles of basic techniques and laboratory safety, in: Tietz fundamentals of clinical chemistry and molecular diagnostics, 8th edn (278) Quality lighting for high performance buildings (279) Regulating workplace risks: a comparative study of inspection regimes in times of change (280) Room access interlocks and access controls, in: Laser safety: tools and training, 2nd edn (281) Safety in the hematology laboratory, in: Rodak's hematology: clinical principles and applications, 5th edn (282) Safety leadership: extending workplace safety climate best practices across health care workforces, in: Leading in health care organizations: improving safety, satisfaction and financial performance (283) Security management: a critical thinking approach (284) Special pathogens and employee safety, in: Clinical microbiology procedures handbook, 4th edn (285) The physical environment in health care, in: Handbook of human factors and ergonomics in health care and patient safety, 2nd edn (286) Ventilation, indoor air quality, health, and productivity, in: Ergonomic workplace design for health, wellness, and productivity (287) Warnings and hazard communications, in: Handbook of human factors and ergonomics, 4th edn (288) Workplace design, in: Handbook of human factors and ergonomics, 4th edn (289) Workplace design, in: Human factors in practice: concepts and applications (290) Workstation redesign, workplace improvement, and productivity, in: Human work productivity: a global perspective (291)

5.2.3	Abbreviations used in the assessment and presentation of laboratory hazards, in: CRC handbook of chemistry and physics, 99th edn (292) Disinfection, sterilization, and control of hospital waste, in: Mandell, Douglas, and Bennett's principles and practice of infectious diseases, 8th edn (293) Flammability hazards of common solvents, in: CRC handbook of chemistry and physics, 99th edn (294) Handbook of chemicals and safety (295) Handbook of environmental health, 4th edn. Vol. 1 (264) Handbook of environmental health, 4th edn. Vol. 2 (265) Harmful chemical agents in the work environment, in: Handbook of occupational safety and health (296) Hazardous chemicals: safety management and global regulations (297) Incompatible chemicals, in: CRC handbook of chemistry and physics, 100th edn (298) Management of infectious water, in: Clinical microbiology procedures handbook, 4th edn (299) Medical waste, in: Handbook of modern hospital safety, 2nd edn (300) Procedures for the storage of microorganisms, in: Manual of clinical microbiology, 12th edn (301) Safe management of wastes from health-care activities, 2nd edn (62) Waste management, in: Clay's handbook of environmental health, 21st edn (302)
5.2.5	Human factors and ergonomics in health care and patient safety, in: Handbook of human factors and ergonomics in health care and patient safety, 2nd edn (303)
5.2.6	*2019 ASHRAE Handbook: HVAC Applications* (304) An introduction to radiation protection, 7th edn (305) Disinfection and sterilization, in: Manual of clinical microbiology, 12th edn (306) Dusts, in: Handbook of occupational safety and health (307) Electric current, in: Handbook of occupational safety and health (308) Electric lighting for indoor workplaces and workstations, in: Handbook of occupational safety and health (309) Electromagnetic hazards in the workplace, in: Handbook of occupational safety and health (310) Facilities change management in context, in: Facilities change management (311) Guidelines for laboratory design: health, safety, and environmental considerations, 4th edn (312) Handbook of environmental health, 4th edn. Vol. 1 (264) Handbook of environmental health, 4th edn. Vol. 2 (265) Harmful chemical agents in the work environment, in: Handbook of occupational safety and health (296) Hospital airborne infection control (313) Ionising radiation, in: Handbook of occupational safety and health (314) Laser radiation, in: Handbook of occupational safety and health (315) Principles of basic techniques and laboratory safety, in: Tietz fundamentals of clinical chemistry and molecular diagnostics, 8th edn (278) Static electricity, in: Handbook of occupational safety and health (316) The facility management handbook, 4th edn (317) Vibration and motion, in: Handbook of human factors and ergonomics, 4th edn (318) Workplace vibration effects on health and productivity, in: Ergonomic workplace design for health, wellness, and productivity (319)
5.3.1.1	Laboratory instrumentation and equipment, in: Clinical microbiology procedures handbook, 4th edn (320) Medical equipment management (321)
5.3.1.2	Evaluation of hematology analyzers, in: Laboratory hematology practice (322) Guidelines for evaluation of coagulation analyzers and coagulation testing, in: Laboratory hematology practice (323) Human factors analysis of workflow in health information technology implementation, in: Handbook of human factors and ergonomics in health care and patient safety, 2nd edn (324) Selection and implementation of new equipment and procedures, in: Clinical laboratory management, 2nd edn (325) Technological and organizational changes: challenges for HRM, in: Technological challenges and management: matching human and business needs (326)
5.3.1.4	How to ensure correct calibration *Biomed Sci* (327) Metrological traceability - a concept for standardization in laboratory medicine *Clin Chem Lab Med* (328) Metrology principles and organization, in: Springer handbook of metrology and testing, 2nd edn (329) Practical instrumental analysis: methods, quality assurance and laboratory management (330) *The Metrology Handbook*, 2nd edn (331) The quality calibration handbook: developing and managing a calibration program (332) Traceable temperatures: an introduction to temperature measurement and calibration, 2nd edn (333)
5.3.1.5	Basic principles for protective equipment application, in: Handbook of occupational safety and health (334) Building an effective PPE program *Med Lab Obs* (335) Complete guide to preventive and predictive maintenance, 2nd edn (336) Decontamination in the microbiology laboratory, in: Biological safety: principles and practices, 5th edn (337) Decontamination, disinfection, and sterilization, in: Manual of clinical microbiology, 11th edn (338) Hygiene in medical technology, in: Springer handbook of medical technology (339) Maintenance, replacement, and reliability: theory and applications, 2nd edn (340) Managing medical equipment risks, in: The biomedical engineering handbook, 4th edn (341) Personal protective equipment, in Handbook of occupational safety and health, Human factors and ergonomics (342) Personal protective equipment, in: Working in biosafety level 3 and 4 laboratories: a practical introduction (343) Personal respiratory protection, in: Biological safety: principles and practices, 4th edn (344) Primary barriers: biological safety cabinets, fume hoods, and glove boxes, in: Biological safety: principles and practices, 4th edn (345)

	Selection of laboratory gloves, in: CRC handbook of chemistry and physics, 99th edn (346) Selection of protective laboratory garments, in: CRC handbook of chemistry and physics, 99th edn (347) Selection of respirator cartridges and filters, in: CRC handbook of chemistry and physics, 99th edn (348) Technical safety of electrical medical technology equipment and systems, in: Springer handbook of medical technology (349) Use of personal protective equipment in the workplace, in: Handbook of human factors and ergonomics, 4th edn (350)
5.3.1.6	Accident and incident investigation, in: Handbook of human factors and ergonomics, 4th edn (351) Accident investigation, in: Laser safety: tools and training, 2nd edn (352) Accidents at work, in: Handbook of occupational safety and health (353) Management of laboratory accidents, in: Clinical microbiology procedures handbook, 4th edn (354)
5.3.2	Inventory and production management in supply chains, 4th edn (355) Medical supply logistics, in: Handbook of healthcare system scheduling (356) Reagents, stains, and media: bacteriology, in: Manual of clinical microbiology, 12th edn (357) Reagents, stains, and media: parasitology, in: Manual of clinical microbiology, 12th edn (358) Reagents, stains, media and cell cultures: mycology, in: Manual of clinical microbiology, 12th edn (359) Reagents, stains, media, and cell cultures: virology, in: Manual of clinical microbiology, 12th edn (360)
5.3.2.2	Incompatible chemicals, in: CRC handbook of chemistry and physics, 100th edn (298)
5.3.2.4	Inventory management in supply chains, in: Encyclopedia of optimization, 2nd edn (361)
5.3.2.6	*2015 ASHRAE® Handbook: Heating, Ventilating, and Air-Conditioning Applications* (304) An introduction to radiation protection, 6th edn (362) Dusts, in: Handbook of occupational safety and health (307) Electric current, in: Handbook of occupational safety and health (308) Electric lighting for indoor workplaces and workstations, in: Handbook of occupational safety and health (309) Electromagnetic hazards in the workplace, in: Handbook of occupational safety and health (310) Facilities change management in context, in: Facilities change management (311) Handbook of environmental health, 4th edn. Vol. 1 (264) Handbook of environmental health, 4th edn. Vol. 2 (265) Harmful chemical agents in the work environment, in: Handbook of occupational safety and health (296) Hospital airborne infection control (313) Ionising radiation, in: Handbook of occupational safety and health (314) Laser radiation, in: Handbook of occupational safety and health (315) Static electricity, in: Handbook of occupational safety and health (316) The facility management handbook, 4th edn (317) Vibration and motion, in: Handbook of human factors and ergonomics, 4th edn (318) Workplace vibration effects on health and productivity, in: Ergonomic workplace design for health, wellness, and productivity (319)
5.10.1	Laboratory information management systems: an introduction *Biomed Sci* (363) Using MIS, 10th edn (364)
5.10.2	Human factors and ergonomics of health information technology implementation, in: Handbook of human factors and ergonomics in health care and patient safety, 2nd edn (365) Managing business opportunities and information risks, in: Managing business risk: a practical guide to protecting your business, 10th edn (366) Security without obscurity: a guide to confidentiality, authentication, and integrity (367)
5.10.3	A manager's guide to ISO 22301: a practical guide to developing and implementing a business continuity management system (368) Electronically stored information: the complete guide to management, understanding, acquisition, storage, search, and retrieval, 2nd edn (369) Human factors and information security, in: Handbook of human factors and ergonomics, 4th edn (370) Implementation methodology of effective governance to ensure the quality of IT service, in: Action-based quality management: strategy and tools for continuous improvement (371) Implementing information security in healthcare: building a security program (372) Information communications technology, in: Clinical engineering: a handbook for clinical and biomedical engineers (373) Information security management principles, 2nd edn (374) Information security policies, procedures, and standards: a practitioner's reference (375) Information security policy development for compliance: ISO/IEC 27001, NIST SP 800-53, HIPAA standard, PCI DSS V2.0, and AUP V5.0 (376) Integrated business continuity planning, in: Information security management handbook, 6th edn. Vol. 4 (377) Interoperability in laboratory management information systems, in: Standards and standardization: concepts, methodologies, tools, and applications (378) Managing the insider threat: no dark corners (379) Organizational password policy, in: Global business: concepts, methodologies, tools and applications (380) Protecting us from us: human firewall vulnerability assessments, in: Information security management handbook, 6th edn. Vol. 7 (381) Security in the cloud, in: Information security management handbook, 6th edn. Vol. 7 (382) Security of the electronic medical record, in: Handbook of medical and healthcare technologies (383)

	Testing business continuity and disaster recovery plans, in: Information security management handbook, 6th edn. Vol. 1 (384) The security risk assessment handbook: a complete guide for performing security risk assessments, 2nd edn (385) Unauthorized access: the crisis in online privacy and security (386)

REFERENCES

1. Union of International Associations (Editors). *Yearbook of International Organizations 2019 - 2020: Guide to Global Civil Society Networks*. 56th edn. Vol. 1, Organization descriptions and cross-references. Koninklijke Brill, Leiden, 2019: 2894 pp.
2. V Barwick (Editor). *Guide to Quality in Analytical Chemistry: an Aid to Accreditation*, 3rd edn. Eurachem/CITAC guide. Eurachem, Olomouc, 2016: 66 pp.
3. International Organization for Standardization. Guidance on outsourcing. ISO 37500:2014. International Organization for Standardization, Geneva, 2014.
4. International Organization for Standardization. Societal security — Business continuity management systems — Guidelines for supply chain continuity. ISO/TS 22318:2015. International Organization for Standardization, Geneva, 2015.
5. European Committee for Electrotechnical Standardization. Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking. EN 149:2001+A1:2009. European Committee for Electrotechnical Standardization, Brussels, 2009.
6. European Committee for Standardization. Personal eye protection - Specifications. EN 166:2001. European Committee for Standardization, Brussels, 2001.
7. European Committee for Electrotechnical Standardization. Basic ionizing radiation symbol. EN ISO 361:2015. European Committee for Electrotechnical Standardization, Brussels, 2015.
8. European Committee for Standardization. Protective gloves against dangerous chemicals and micro-organisms - Part 1: terminology and performance requirements for chemical risks. EN ISO 374-1:2016+A1. European Committee for Standardization, Brussels, 2016.
9. European Committee for Standardization. Protective gloves against dangerous chemicals and micro-organisms - Part 5: terminology and performance requirements for micro-organisms risks (ISO 374-5:2016). EN ISO 374-5:2016. European Committee for Standardization, Brussel, 2016.
10. European Committee for Electrotechnical Standardization. Respiratory protective devices - Valued filtering half masks to protect against gases or gases and particles - Requirements, testing, marking. EN 405:2001+A1:2009. European Committee for Electrotechnical Standardization, Brussels, 2009.
11. European Committee for Standardization. Protective gloves against thermal risks (heat and/or fire). EN 407:2004. European Committee for Standardization, Brussels, 2004.
12. European Committee for Standardization. Protective gloves — General requirements and test methods. EN 420:2003+A1:2009. European Committee for Standardization, Brussels, 2009.
13. European Committee for Standardization. Protective gloves against ionizing radiation and radioactive contamination. EN 421:2010. European Committee for Standardization, Brussels, 2010.
14. European Committee for Standardization. Protective gloves against cold. EN 511:2006. European Committee for Standardization, Brussels, 2006.
15. European Committee for Standardization. Mobile waste and recycling containers — Part 6: safety and health requirements. EN 840-6:2012. European Committee for Standardization, Brussels, 2012.
16. European Committee for Standardization. Respiratory protective devices - Gas filter(s) and combined filter(s) -Requirements, testing, marking. EN 14387:2004+A1:2008. European Committee for Standardization, Brussels, 2008.
17. European Committee for Standardization. Protective clothing - General requirements (ISO 13688:2013). EN ISO 13688:2013. European Committee for Standardization, Brussels, 2013.
18. European Committee for Standardization. Radiological protection — Performance criteria for service laboratories performing biological dosimetry by cytogenetics. EN ISO 19238:2017. European Committee for Standardization, Geneva, 2017.
19. European Committee for Standardization. Personal protective equipment - Safety footwear (ISO 20345:2011). EN ISO 20345:2011. European Committee for Standardization, Brussels, 2011.
20. European Committee for Electrotechnical Standardization. Safety of laser products - Part 1: equipment classification and requirements (IEC 60825-1:2014). EN 60825-1:2014. European Committee for Electrotechnical Standardization, Brussels, 2014.
21. European Committee for Electrotechnical Standardization. Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: general requirements (IEC 61010-1:2010). EN 61010-1:2010/A1:2019/AC:2019-04. European Committee for Electrotechnical Standardization, Brussels, 2019.
22. European Committee for Electrotechnical Standardization. Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 1: general requirements (IEC 61508-1:2010). EN 61508-1:2010. European Committee for Electrotechnical Standardization, Brussels, 2010.
23. European Committee for Electrotechnical Standardization. Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 2: requirements for electrical/electronic/programmable electronic safety related systems (IEC 61508-2:2010). EN 61508-2:2010. European Committee for Electrotechnical Standardization, Brussels, 2010.
24. European Committee for Electrotechnical Standardization. Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: software requirements (IEC 61508-3:2010). 2nd edn. EN 61508-3:2010. European Committee for Electrotechnical Standardization, Brussels, 2010.
25. European Committee for Electrotechnical Standardization. Photobiological safety of lamps and lamp systems (IEC 62471:2006, modified). EN 62471:2008. European Committee for Electrotechnical Standardization, Brussels, 2008.
26. International Atomic Energy Agency. International basic safety standards for protection against ionizing radiation and for the safety of radiation sources. No. 115. Safety. International Atomic Energy Agency, Vienna, 1996.

27. Alford BK, Lynch S, Rosenblum I, Kullmann C. Creating a safe and healthy workplace: a guide to occupational health and safety for entrepreneurs, owners and managers. International Commission on Occupational Health, Rome, 2014.
28. International Electrotechnical Commission. Safety of laser products – Part 1: equipment classification and requirements. 3rd edn. IEC 60825-1:2014. International Electrotechnical Commission, Geneva, 2014.
29. International Electrotechnical Commission. Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements. 3rd edn. IEC 61010-1:2010. International Electrotechnical Commission, Geneva, 2010.
30. International Electrotechnical Commission. Corrigendum 1 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements. 3rd edn. IEC 61010-1:2010/COR1:2011. International Electrotechnical Commission, Geneva, 2011.
31. International Electrotechnical Commission. Corrigendum 2 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements. 3rd edn. IEC 61010-1:2010/COR2:2013. International Electrotechnical Commission, Geneva, 2013.
32. International Electrotechnical Commission. Amendment 1 – Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: general requirements. 3rd edn. IEC 61010-1:2010/AMD1:2016. International Electrotechnical Commission, Geneva, 2016.
33. International Electrotechnical Commission. Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes. 3rd edn. IEC 61010-2-081:2019. International Electrotechnical Commission, Geneva, 2019.
34. International Electrotechnical Commission. Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 2-101: Particular requirements for in vitro diagnostic (IVD) medical equipment. 3rd edn. IEC 61010-2-101:2018. International Electrotechnical Commission, Geneva, 2018.
35. International Electrotechnical Commission. Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: general requirements. 2nd edn. IEC 61508-1:2010. International Electrotechnical Commission, Geneva, 2010.
36. International Electrotechnical Commission. Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 2: requirements for electrical/electronic/programmable electronic safety related systems. 2nd edn. IEC 61508-2:2010. International Electrotechnical Commission, Geneva, 2010.
37. International Electrotechnical Commission. Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 3: software requirements. 2nd edn. IEC 61508-3:2010. International Electrotechnical Commission, Geneva, 2010.
38. International Electrotechnical Commission. Photobiological safety of lamps and lamp systems. IEC 62471:2006. International Electrotechnical Commission, Geneva, 2006.
39. International Labour Organisation. Ambient factors in the workplace. An ILO code of practice. International Labour Office, Geneva, 2001.
40. International Labour Organization. Safety in the use of chemicals at work. An ILO Code of Practice. International Labour Office, Geneva, 1993.
41. International Labour Organisation. The use of lasers in the workplace: a practical guide. No. 68, Occupational safety and health. International Labour Office, Geneva, 1993.
42. International Organization for Standardization. Basic ionizing radiation symbol. ISO 361:1975. International Organization for Standardization, Geneva, 1975.
43. International Organization for Standardization. Protective gloves against dangerous chemicals and micro-organisms — Part 1: terminology and performance requirements for chemical risks. ISO 374-1:2016. International Organization for Standardization, Geneva, 2016.
44. International Organization for Standardization. Amendment 1 — Protective gloves against dangerous chemicals and micro-organisms — Part 1: terminology and performance requirements for chemical risks. ISO 374-1:2016/Amd.1:2018. International Organization for Standardization, Geneva, 2018.
45. International Organization for Standardization. Protective gloves against dangerous chemicals and micro-organisms — Part 5: terminology and performance requirements for micro-organisms risks. ISO 374-5:2016. International Organization for Standardization, Geneva, 2016.
46. International Organization for Standardization. Graphical symbols — Safety colours and safety signs — Part 1: design principles for safety signs and safety markings. 2nd edn. ISO 3864-1:2011. International Organization for Standardization, Geneva, 2011.
47. International Organization for Standardization. Personal eye-protectors — Specifications. ISO 4849:1981. International Organization for Standardization, Geneva, 1981.
48. International Organization for Standardization. Graphical symbols for use on equipment — Registered symbols. 5th edn. ISO 7000:2014. International Organization for Standardization, Geneva, 2014.
49. International Organization for Standardization. Safety data sheet for chemcial products — Content and order of sections. ISO 11014:2009. International Organization for Standardization, Geneva, 2009.
50. International Organization for Standardization. Protective clothing — General requirements. 2nd edn. ISO 13688:2013. International Organization for Standardization, Geneva, 2013.
51. International Organization for Standardization. Medical laboratories — Requirements for safety. ISO 15190:2003. International Organization for Standardization, Geneva, 2003.
52. International Organization for Standardization. Radiological protection — Performance criteria for service laboratories performing biological dosimetry by cytogenetics. 2nd edn. ISO 19238:2014. International Organization for Standardization, Geneva, 2014.
53. International Organization for Standardization. Personal protective equipment — Safety footwear. 2nd edn. ISO 20345:2011. International Organization for Standardization, Geneva, 2011.
54. International Organization for Standardization. Radiological protection — Performance criteria for radiobioassay. ISO 28218:2010. International Organization for Standardization, Geneva, 2010.

55. International Organization for Standardization. Safety identification — Escape and evacuation plan signs. ISO 23601:2009. International Organization for Standardization, Geneva, 2009.
56. International Organization for Standardization. Emergency lighting. ISO 30061:2007. International Organization for Standardization, Geneva, 2007.
57. International Organization for Standardization. Occupational health and safety management systems — Requirements with guidance for use. ISO 45001:2018. International Organization for Standardization, Geneva, 2018.
58. International Organization for Standardization. Respiratory protective devices — Classification for respiratory protective device (RPD), excluding RPD for underwater application. ISO/TS 16973:2016. International Organization for Standardization, Geneva, 2016.
59. United Nations Economic Commission for Europe. Globally harmonized system of classification and labelling of chemicals (GHS). 8th edn. United Nations, New York, 2019.
60. Papkalla U, Collison J. International minimum requirements for health protection in the workplace. World Health Organization, Geneva, 2017.
61. World Health Organization. Laboratory biosafety manual. 3rd edn. World Health Organization, Geneva, 2004.
62. Y Chartier, J Emmanuel, U Pieper, A Prüss, P Rushbrook, R Stringer, et al (Editors). *Safe Management of Wastes from Health-care Activities*. 2nd edn. WHO Press, Geneva, 2014: 318 pp.
63. World Health Organization. Tuberculosis laboratory biosafety manual. WHO Press, Geneva, 2012.
64. International Organization for Standardization. Quality management — Guidelines for training. ISO 10015:1999. International Organization for Standardization, Geneva, 1999.
65. Kühling J-G. ISWA guidelines on training strategies for healthcare waste management. International Solid Waste Association, Vienna, 2014.
66. Transparency International. Business principles for countering bribery. 3rd edn. Transparency International, Berlin, 2013.
67. International Organization for Standardization. Health informatics — Principles and data requirements for consent in the Collection, Use or Disclosure of personal health information. ISO/TS 17975:2015. International Organization for Standardization, Geneva, 2015.
68. International Organization for Standardization. Information and documentation — Management systems for records Requirements. 2nd edn. ISO 30301:2019. International Organization for Standardization, Geneva, 2019.
69. International Organization for Standardization. Information and documentation — Management systems for records Guidelines for implementation. ISO 30302:2015. International Organization for Standardization, Geneva, 2015.
70. European Committee for Standardization. Graphical symbols - Safety colours and safety signs - Registered safety signs (ISO 7010:2011). EN ISO 7010:2012+A7:2017. European Committee for Standardization, Brussels, 2017.
71. European Committee for Electrotechnical Standardization. Explosive atmospheres - Part 10-1: classification of areas - Explosive gas atmospheres (IEC 60079-10-1:2015 + COR1:2015). EN 60079-10-1:2015. European Committee for Electrotechnical Standardization, Brussels, 2015.
72. International Electrotechnical Commission. Explosive atmospheres – Part 10-1: classification of areas – Explosive gas atmospheres. 2nd edn. IEC 60079-10-1:2015. International Electrotechnical Commission, Geneva, 2015.
73. International Electrotechnical Commission. Corrigendum 1 – Explosive atmospheres – Part 10-1: classification of areas – Explosive gas atmospheres. 2nd edn. IEC 60079-10-1:2015/COR1:2015. International Electrotechnical Commission, Geneva, 2015.
74. International Organization for Standardization. Graphical symbols — Safety colours and safety signs — Registered safety signs. 3rd edn. ISO 7010:2019. International Organization for Standardization, Geneva, 2019.
75. European Committee for Standardization. Classification of fires. EN 2:1992+A1:2004. European Committee for Standardization, Brussels, 2004.
76. European Committee for Standardization. Portable fire extinguishers - Part 7: characteristics, performance requirements and test methods. EN 3-7:2014+A1:2007. European Committee for Standardization, Brussels, 2007.
77. European Committee for Standardization. Fire detection and fire alarm systems - Part 1: introduction. EN 54-1:2011. European Committee for Standardization, Brussels, 2011.
78. International Organization for Standardization. Fire fighting — Portable fire extinguishers — Performance and construction. 3rd edn. ISO 7165:2017. International Organization for Standardization, Geneva, 2017.
79. International Organization for Standardization. Fire detection and alarm systems — Part 1: general and definitions. 3rd edn. ISO 7240-1:2014. International Organization for Standardization, Geneva, 2014.
80. European Committee for Standardization, European Committee for Electrotechnical Standardization. General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2017). 3rd edn. EN ISO/IEC 17025:2017. European Committee for Standardization, 2017.
81. International Atomic Energy Agency. Classification of radioactive waste: safety guide. No. GSG-1, IAEA safety standards. International Atomic Energy Agency, Vienna, 2009.
82. International Organization for Standardization, International Electrotechnical Commission. General requirements for the competence of testing and calibration laboratories. 3rd edn. ISO/IEC 17025:2017. International Organization for Standardization, Geneva, 2018.
83. European Committee for Standardization. Cleanrooms and associated controlled environments - Part 1: classification of air cleanliness by particle concentration (ISO 14644-1:2015). EN ISO 14644-1:2015. European Committee for Standardization, Brussels, 2015.
84. European Committee for Electrotechnical Standardization. Insulation coordination for equipment within low-voltage systems – Part 1: principles, requirements and tests (IEC 60664-1:2007). EN 60664-1:2007. European Committee for Electrotechnical Standardization, Brussels, 2007.
85. International Organization for Standardization, International Commission on Illumination. Lighting of work places — Part 3: lighting requirements for safety and security of outdoor work places. ISO/CIE 8995-3:2018. International Organization for Standardization, Geneva, 2018.
86. International Atomic Energy Agency. Radiation protection and safety of radiation sources: international basic safety standards. No. GSR Part 3, IAEA safety standards. International Atomic Energy Agency, Vienna, 2014.

87. International Agency for Research on Cancer. Arsenic, metals, fibres, and dusts. Vol. 100 C, A review of human carcinogens. IARC monographs on the evaluation of carcinogenic risks to humans. International Agency for Research on Cancer, Lyon, 2012.
88. International Agency for Research on Cancer. Benzene. Vol. 120, A review of human carcinogens. IARC monographs on the evaluation of carcinogenic risks to humans. International Agency for Research on Cancer, Lyon, 2018.
89. International Agency for Research on Cancer. Chemical agents and related occupations. Vol. 100 F, A review of human carcinogens. IARC monographs on the evaluation of carcinogenic risks to humans. International Agency for Research on Cancer, Lyon, 2012.
90. International Agency for Research on Cancer. Non-ionizing radiation, Part 1: static and extremely low-frequency (ELF) electric and magnetic fields. Vol. 80, A review of human carcinogens. IARC monographs on the evaluation of carcinogenic risks to humans. IARC Press, Lyon, 2002.
91. International Agency for Research on Cancer. Non-ionizing radiation, Part 2: radiofrequency electromagnetic fields. Vol. 102, IARC monographs on the evaluation of carcinogenic risks to humans. IARC Press, Lyon, 2013.
92. International Agency for Research on Cancer. Radiation. Vol. 100 D, A review of human carcinogens. IARC monographs on the evaluation of carcinogenic risks to humans. International Agency for Research on Cancer, 2012.
93. International Commission on Non-Ionizing Radiation Protection. Guidelines for limiting exposure to electric fields induced by movement of the human body in a static magnetic field and by time-varying magnetic fields below 1 Hz. *Health Phys* 2014; 106: 418-425.
94. International Commission on Non-Ionizing Radiation Protection. Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz to 100 kHz). *Health Phys* 2010; 99: 818-836.
95. International Commission on Non-Ionizing Radiation Protection. Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz). *Health Phys* 1998; 74: 494-522.
96. International Commission on Non-Ionizing Radiation Protection. Guidelines on limits of exposure to static magnetic fields. *Health Phys* 2009; 96: 504-514.
97. International Commission on Non-Ionizing Radiation Protection. Guidelines on limits of exposure to ultraviolet radiation of wavelengths between 180 nm and 400 nm (incoherent optical radiation). *Health Phys* 2004; 87: 171-186.
98. International Commission on Non-Ionizing Radiation Protection. ICNIRP guidelines on limits of exposure to incoherent visible and infrared radiation. *Health Phys* 2013; 105: 74-96.
99. International Commission on Non-Ionizing Radiation Protection. ICNIRP guidelines on limits of exposure to laser radiation of wavelengths between 180 nm and 1,000 mm. *Health Phys* 2013; 105: 271-295.
100. Vecchia P, Hietanen M, Stuck BE, van Deventer E, Niu S (Editors). *Protecting Workers from Ultraviolet Radiation*. International Commission on Non-Ionizing Radiation Protection, Oberschleißheim, 2007: 110 pp.
101. International Commission on Non-Ionizing Radiation Protection. Revision of guidelines on limits of exposure to laser radiation of wavelengths between 400 nm and 1.4 m. *Health Phys* 2000; 79: 431-440.
102. International Electrotechnical Commission. Insulation coordination for equipment within low-voltage systems – Part 1: principles, requirements and tests. 2nd edn. IEC 60664-1:2007. International Electrotechnical Commission, Geneva, 2007.
103. Institute of Electrical and Electronics Engineers. IEEE approved draft standard for safety levels with respect to human exposure to electric, magnetic and electromagnetic fields, 0 Hz to 300 GHz. IEEE Std C95.1-2019. Institute of Electrical and Electronics Engineers, New York, 2019.
104. Institute of Electrical and Electronics Engineers. IEEE approved draft standard for safety levels with respect to human exposure to electric, magnetic and electromagnetic fields, 0 Hz to 300 GHz—Corrigendum 1: correction for C95.1-2019. IEEE Std C95.1-2019/Cor 1. Institute of Electrical and Electronics Engineers, New York, 2019.
105. Institute of Electrical and Electronics Engineers. IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz. IEEE Std C95.1-2005. Institute of Electrical and Electronics Engineers, New York, 2005.
106. Institute of Electrical and Electronics Engineers. IEEE standard for safety levels with respect to human exposure to radio frequency electromagnetic fields, 3 kHz to 300 GHz—Amendment 1: specifies ceiling limits for induced and contact current, clarifies distinctions between localized exposure and spatial peak power density. IEEE Std C95.1a-2010. Institute of Electrical and Electronics Engineers, New York, 2010.
107. Institute of Electrical and Electronics Engineers. IEEE standard for safety levels with respect to human exposure to electromagnetic fields, 0–3 kHz. IEEE Std C95.6-2002. Institute of Electrical and Electronics Engineers, New York, 2002.
108. International Labour Organisation. Occupational exposure to airborne substances harmful to health. International Labour Office, Geneva, 1980.
109. International Organization for Standardization. Lighting of work places — Part 1: indoor. ISO 8995-1:2002. International Organization for Standardization, Geneva, 2002.
110. International Organization for Standardization. Technical corrigendum 1 — Lighting of work places — Part 1: indoor. ISO 8995-1:2002/Cor.1:2005. International Organization for Standardization, Geneva, 2005.
111. International Organization for Standardization. Cleanrooms and associated controlled environments — Part 1: classification of air cleanliness by particle concentration. 2nd edn. ISO 14644-1:2015. International Organization for Standardization, Geneva, 2015.
112. World Health Organization. Electromagnetic fields (400 Hz to 300 GHz). No. 137, Environmental health criteria. World Health Organization, Geneva, 1993.
113. World Health Organization. Extremely low frequency fields. No. 238, Environmental health criteria. WHO Press, Geneva, 2007.
114. World Health Organization. Hazard prevention and control in the work environment: airborne dust. Protection of the human environment occupational and environmental health. Geneva, 1999.
115. World Health Organization. Lasers and optical radiation. No. 23, Environmental health criteria. World Health Organization, Geneva, 1982.
116. World Health Organization. Magnetic fields. No. 69, Environmental health criteria. World Health Organization, Geneva, 1987.

117. World Health Organization. Noise. No. 12, Environmental health criteria. World Health Organization, Geneva, 1980.
118. World Health Organization. Radiofrequency and microwaves. No. 16, Environmental health criteria. World Health Organization, Geneva, 1981.
119. World Health Organization. Static fields. No. 232, Environmental health criteria. World Health Organization, Geneva, 2006.
120. World Health Organization. Ultraviolet radiation. 2nd edn. No. 160, Environmental health criteria. World Health Organization, Geneva, 1994.
121. WHO Regional Office for Europe. WHO guidelines for indoor air quality: dampness and mould. WHO Regional Office for Europe, Copenhagen, 2009.
122. WHO Regional Office for Europe. WHO guidelines for indoor air quality: selected pollutants. WHO Regional Office for Europe, Copenhagen, 2010.
123. European Committee for Electrotechnical Standardization. Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-6: particular requirements - In vitro diagnostic (IVD) medical equipment. EN 61326-2-6:2012. European Committee for Electrotechnical Standardization, Brussels, 2012.
124. European Committee for Electrotechnical Standardization. Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement (CISPR 11:2015 , modified). EN 55011:2016/A1:2017. European Committee for Electrotechnical Standardization, Brussels, 2017.
125. Briggs C, Culp N, Davis B, D'Onofrio G, Zini G, Machin SJ. ICSH guidelines for the evaluation of blood cell analysers including those used for differential leucocyte and reticulocyte counting. *Int J Lab Hematol* 2014; 36: 613-627.
126. Bourner G, De La Salle B, George T, Tabe Y, Baum H, Culp N, et al. ICSH guidelines for the verification and performance of automated cell counters for body fluids. *Int J Lab Hematol* 2014; 36: 598-612.
127. Stephens AD, Colah R, Fucharoen S, Hoyer J, Keren D, McFarlane A, et al. ICSH recommendations for assessing automated high-performance liquid chromatography and capillary electrophoresis equipment for the quantitation of HbA2. *Int J Lab Hematol* 2015; 37: 577-582.
128. International Electrotechnical Commission. Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement. 6th edn. CISPR 11:2015. International Electrotechnical Commission, Geneva, 2015.
129. International Electrotechnical Commission. Amendment 1 – Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement. 6th edn. CISPR 11:2015/AMD1:2016. International Electrotechnical Commission, Geneva, 2016.
130. International Electrotechnical Commission. Amendment 2 – Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement. 6th edn. CISPR 11:2015/AMD2:2019. International Electrotechnical Commission, Geneva, 2019.
131. International Electrotechnical Commission. Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 2-6: particular requirements – In vitro diagnostic (IVD) medical equipment. 2nd edn. IEC 61326-2-6:2012. International Electrotechnical Commission, Geneva, 2012.
132. International Air Transport Association. Lithium battery shipping guidelines. 6th edn. International Air Transport Association, Montreal, 2019.
133. European Committee for Standardization. Laboratory glass and plastics ware - Principles of design and construction of volumetric instruments (ISO 384:2015). 2nd edn. EN ISO 384:2015. European Committee for Standardization, Brussels, 2015.
134. European Committee for Standardization. Laboratory glassware - Volumetric instruments - Methods for testing of capacity and for use (ISO 4787:2010, corrected version 2010-06-15). EN ISO 4787:2011. European Committee for Standardization, Brussels, 2011.
135. European Committee for Standardization. Piston-operated volumetric apparatus — Part 1: terminology, general requirements and user recommendations (ISO 8655-1:2002). EN ISO 8655-1:2002. European Committee for Standardization, Brussels, 2002.
136. International Laboratory Accreditation Cooperation. ILAC policy on the traceability of measurement results. ILAC-P10:01/2013. International Laboratory Accreditation Cooperation, Rhodes, 2013.
137. International Laboratory Accreditation Cooperation, International Organization of Legal Metrology. Guidelines for the determination of calibration intervals of measuring instruments. ILAC-G24:2007/OIML D 10:2007. International Laboratory Accreditation Cooperation, Rhodes, 2007.
138. International Organization for Standardization. Laboratory glass and plastics ware — Principles of design and construction of volumetric instruments. 2nd edn. ISO 384:2015. International Organization for Standardization, Geneva, 2015.
139. International Organization for Standardization. Laboratory glassware — Volumetric instruments — Methods for testing of capacity and for use. 2nd edn. ISO 4787:2010. International Organization for Standardization, Geneva, 2010.
140. International Organization for Standardization. Piston-operated volumetric apparatus — Part 1: terminology, general requirements and user recommendations. ISO 8655-1:2002. International Organization for Standardization, Geneva, 2002.
141. International Organization for Standardization. Technical corrigendum 1 — Piston-operated volumetric apparatus — Part 1: terminology, general requirements and user recommendations. ISO 8655-1:2002/Cor.1:2008. International Organization for Standardization, Geneva, 2008.
142. De Bièvre P, Dybkaer R, Fajgelj A, Hibbert DB. Metrological traceability of measurement results in chemistry: concepts and implementation (IUPAC Technical Report). *Pure Appl Chem* 2011; 83: 1871-1933.
143. European Committee for Standardization. Transportable gas cylinders — Gas cylinder identification (excluding LPG) Part 3: colour coding. 2nd edn. EN 1089-3:2004. European Committee for Standardization, Brussels, 2004.
144. European Committee for Standardization. Gas cylinders - Precautionary labels (ISO 7225:2005). EN ISO 7225:2007+A1:2012. European Committee for Standardization, Brussels, 2012.
145. European Committee for Electrotechnical Standardization. Medical electrical equipment - Recurrent test and test after repair of medical electrical equipment (IEC 62353:2014). EN 62353:2014. European Committee for Electrotechnical Standardization, Brussels, 2014.

146. International Electrotechnical Commission. Medical electrical equipment – Recurrent test and test after repair of medical electrical equipment. 2nd edn. IEC 62353:2014. International Electrotechnical Commission, Geneva, 2014.
147. International Organization for Standardization. Gas cylinders for medical use — Marking for identification of content. ISO 32:1977. International Organization for Standardization, Geneva, 1977.
148. International Organization for Standardization. Gas cylinders — Precautionary labels. 2nd edn. ISO 7225:2005. International Organization for Standardization, Geneva, 2005.
149. International Organization for Standardization. Amendment 1 — Gas cylinders — Precautionary labels. 2nd edn. ISO 7225:2005/Amd.1:2012. International Organization for Standardization, Geneva, 2012.
150. World Health Organization. Maintenance manual for laboratory equipment. Philips C, translator. 2nd edn. WHO Press, Geneva, 2008.
151. World Health Organization. Medical equipment maintenance programme overview. WHO medical device technical series. WHO Press, Geneva, 2011.
152. International Organization for Standardization, International Electrotechnical Commission. Information technology — Software asset management — Part 2: software identification tag. 2nd edn. ISO/IEC 19770-2:2015. International Organization for Standardization, Geneva, 2015.
153. International Organization for Standardization. Asset management — Overview, principles and terminology. ISO 55000:2014. International Organization for Standardization, Geneva, 2014.
154. International Organization for Standardization. Asset management — Management systems — Requirements. ISO 55001:2014. International Organization for Standardization, Geneva, 2014.
155. International Organization for Standardization. Asset management — Management systems — Guidelines for the application of ISO 55001. 2nd edn. ISO 55002:2018. International Organization for Standardization, Geneva, 2018.
156. Organisation of Economic Co-operation and Development. OECD guiding principles for chemical accident prevention, preparedness and response: guidance for industry (including management and labour), public authorities, communities, and other stakeholders. 2nd edn. Series on chemical accidents. OECD Publications, Paris, 2003.
157. World Health Organization. Introduction to medical equipment inventory management. WHO medical device technical series. WHO Press, Geneva, 2011.
158. European Committee for Standardization. Health informatics — Information security management in health using ISO/IEC 27002 (ISO 27799:2016). EN ISO 27799:2016. European Committee for Standardization, Brussels, 2016.
159. European Committee for Standardization, European Committee for Electrotechnical Standardization. Information technology - Security techniques - Information security management systems - Requirements (ISO/IEC 27001:2013 including Cor 1:2014 and Cor 2:2015). EN ISO/IEC 27001:2017. European Committee for Standardization, Brussels, 2017.
160. European Committee for Standardization, European Committee for Electrotechnical Standardization. Information technology - Security techniques - Code of practice for information security controls (ISO/IEC 27002:2013 including Cor 1:2014 and Cor 2:2015). EN ISO/IEC 27002:2017. European Committee for Standardization, Brussels, 2017.
161. European Committee for Standardization, European Committee for Electrotechnical Standardization. Information technology - Security techniques - Storage security (ISO/IEC 27040:2015). EN ISO/IEC 27040:2016. European Committee for Standardization, Brussels, 2016.
162. Health Level Seven International. HL7 FHIR, R4. Health Level Seven International, Ann Arbor, 2018.
163. SNOMED International. SNOMED CT international edition. International Health Terminology Standards Development Organisation, London, 2019.
164. European Committee for Standardization, European Committee for Electrotechnical Standardization. Information technology - Security techniques - Information security management systems - Overview and vocabulary. 5th edn. EN ISO/IEC 27000:2018. European Committee for Standardization, Brussels, 2018.
165. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Information security management systems — Requirements. 2nd edn. ISO/IEC 27001:2013. International Organization for Standardization, Geneva, 2013.
166. International Organization for Standardization, International Electrotechnical Commission. Technical corrigendum 1 — Information technology — Security techniques — Information security management systems — Requirements. ISO/IEC 27001:2013/Cor.1:2014. International Organization for Standardization, Geneva, 2014.
167. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Code of practice for information security controls. 2nd edn. ISO/IEC 27002:2013. International Organization for Standardization, Geneva, 2013.
168. International Organization for Standardization, International Electrotechnical Commission. Technical corrigendum 1 — Information technology — Security techniques — Code of practice for information security controls. 2nd edn. ISO/IEC 27002:2013/Cor.1:2014. International Organization for Standardization, Geneva, 2014.
169. International Organization for Standardization, International Electrotechnical Commission. Technical corrigendum 2 Information technology — Security techniques — Code of practice for information security controls. 2nd edn. ISO/IEC 27002:2013/Cor.2:2015. International Organization for Standardization, Geneva, 2015.
170. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Information security management systems — Guidance. 2nd edn. ISO/IEC 27003:2017. International Organization for Standardization, Geneva, 2017.
171. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Information security management — Monitoring, measurement, analysis and evaluation. 2nd edn. ISO/IEC 27004:2016. International Organization for Standardization, Geneva, 2016.
172. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Guidelines for information security management systems auditing. 2nd edn. ISO/IEC 27007:2017. International Organization for Standardization, Geneva, 2017.
173. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Code of practice for information security controls based on ISO/IEC 27002 for cloud services. ISO/IEC 27017:2015. International Organization for Standardization, Geneva, 2015.

174. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Guidelines for information and communication technology readiness for business continuity. ISO/IEC 27031:2011. International Organization for Standardization, Geneva, 2011.
175. International Organization for Standardization, International Electrotechnical Commission. Information technology — Security techniques — Storage security. ISO/IEC 27040:2015. International Organization for Standardization, Geneva, 2015.
176. International Organization for Standardization. Health informatics — Information security management in health using ISO/IEC 27002. 2nd edn. ISO 27799:2016. International Organization for Standardization, Geneva, 2016.
177. International Social Security Association. ISSA guidelines on information and communication technology. International Social Security Association, Geneva, 2017.
178. European Committee for Standardization. Respiratory protective devices - Definitions of terms and pictograms. EN 132:1998. European Committee for Standardization, Brussels, 1998.
179. European Committee for Standardization. Personal protective equipment — Eye and face protection — Vocabulary. 3rd edn. EN ISO 4007:2018. European Committee for Standardization, Brussels, 2018.
180. International Organization for Standardization. Textiles - Care labelling code using symbols. 3rd edn. ISO 3758:2012. International Organization for Standardization, Geneva, 2012.
181. International Organization for Standardization. Textiles — Qualification symbols for labellling workwear to be industrially laundered. ISO 30023:2012. International Organization for Standardization, Geneva, 2010.
182. International Organization for Standardization. Personal protective equipment — Eye and face protection — Vocabulary. 3rd edn. ISO 4007:2018. International Organization for Standardization, Geneva, 2018.
183. International Organization for Standardization. Medical laboratories — Requirements for quality and competence. 3rd edn. ISO 15189:2012. International Organization for Standardization, Geneva, 2014.
184. Bruno TJ, Svoronos PD. Flammability of chemical substances. In: Rumble JR Jr, ed. CRC handbook of chemistry and physics. 100th edn. Taylor & Francis Group, Boca Raton, 2019: 16‑18‑16‑34.
185. Roberts HC, Lipták BG. Noise sensors and nondestructive testing. In: Lipták BG, ed. Instrument and automation engineers' handbook. 5th edn. Vol. I. Measurement and safety. Taylor & Francis Group, Boca Raton, 2017: 1419‑1428.
186. School PJ. Noise at work. In: Karwowski W, ed. International encyclopedia of ergonomics and human factors. 2nd edn. Vol. 1. Taylor & Francis Group, Boca Raton, 2006: 1821‑1825.
187. International Electrotechnical Commission. Medical electrical equipment – Part 1‑8: general requirements for basic safety and essential performance – collateral standard: general requirements, tests and guidance for alarm systems in medical electrical equipment and medical electrical systems. 2nd edn. IEC 60601‑1‑8:2006. International Electrotechnical Commission, Geneva, 2006.
188. Brodgesell A, Eren H, Lipták BG. Vibration, shock, and acceleration. In: Lipták BG, ed. Instrument and automation engineers' handbook. 5th edn. Vol. I. Measurement and safety. Taylor & Francis Group, Boca Raton, 2017: 1537‑1555.
189. Russill R. A short guide to procurement risk. Short guides to business risk. Ashgate Publishing, Farnham, 2010.
190. Buia C, Heyning C, Lander F. Could your supplier become too powerful? *McKinsey Q* 2018; 27‑29.
191. Hugos MH. Essentials of supply chain management. 4th edn. Essentials. John Wiley & Sons, Hoboken, 2018.
192. Kirsch G. How much is too much? *Qual Progr* 2018; 51: 64.
193. Shittu AJ, Adedokum‑Shittu NA. IT outsourcing in the face of global and technology challenges. In: Khosrow‑Pour M, ed. Encyclopedia of information science and technology. 3rd edn. Vol. II. IGI Global, Hershey, 2015: 843‑852.
194. Wisner JD, Tan K-C, Leong GK. Principles of supply chain management: a balanced approach. 5th edn. Cengage Learning, Boston, 2018.
195. Lysons K, Farrington B. Procurement and supply chain management. 9th edn. Pearson Education, Harlow, 2016.
196. Baily P, Farmer D, Crocker B, Jessop D, Jones D. Procurement principles and management. 11th edn. Pearson Education, Harlow, 2015.
197. Benton WC Jr. Purchasing and supply chain management. 3rd edn. The McGraw‑Hill/Irwin series in operations and decision sciences. McGraw‑Hill Education, New York, 2013.
198. van Weele AJ. Purchasing and supply chain management. 7th edn. Cengage Learning, Boston, 2018.
199. Dale BG, Burnes B, Reid I, Bamford D. Supplier development. In: Dale BG, Bamford D, van der Wiele T, eds. Managing quality: an essential guide and resource gateway. 6th edn. John Wiley & Sons, Chichester, 2016: 141‑157.
200. Schuh C, Strohmer MF, Easton S, Hales M, Triplat A. Supplier relationship management: how to maximize vendor value and opportunity. Apress Media, New York, 2014.
201. Gefen D. The art of successful information systems outsourcing. Information systems collection. Business Expert Press, New York, 2011.
202. JP Russell (Editor). *The ASQ Supply Chain Management Primer*. Quality Press, Milwaukee, 2014: 129 pp.
203. SE Burke, RT Silvestrini (Editors). *The Certified Quality Engineer Handbook*. 4th edn. Quality Press, Milwaukee, 2017: 684 pp.
204. Tate W. The definitive guide to supply management and procurement: principles and strategies for establishing efficient, effective, and sustainable supply management operations. Pearson Education, Upper Saddle River, 2013.
205. Sollish F, Semanik J. The procurement and supply manager's desk reference. 2nd edn. John Wiley & Sons, Hoboken, 2012.
206. JL Bossert, JO Brown (Editors). *The Supplier Management Handbook*. 6th edn. Quality Press, Milwaukee, 2004: 286 pp.
207. Datta S. Understanding and managing IT outsourcing: a partnership approach. Palgrave Macmillian, Basingstoke, New York, 2015.
208. Smith A. Qualifications. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 359.
209. Brannick MT, Cadel A, Levine EL. Job analysis for knowledge, skills, abilities, and other characteristics, predictor measures, and performance outcomes. In: Schmitt N, ed. The Oxford handbook of personnel assessment and selection. Oxford library psychology. Oxford University Press, New York, 2012: 119‑146.
210. Rowley C, Ramasamy N. Job description. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 229.

211. Ressia S. Person specification. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 330.
212. Mader-Clark M. The job description handbook. 3rd edn. Nolo, Berkeley, 2013.
213. Pitts VE. Employee assistance programs. In: Rogelberg SG, ed. The SAGE encyclopedia of industrial and organizational psychology. 2nd edn. Vol. 1. SAGE Publications, Thousand Oaks, 2017: 367-368.
214. Hall KE, Johnson RC. Employee wellness programs. In: Rogelberg SG, ed. The SAGE encyclopedia of industrial and organizational psychology. 2nd edn. Vol. 1. SAGE Publications, Thousand Oaks, 2017: 388-390.
215. Pharr JL. Fire safety and security. In: Ricks TA, Ricks BE, Dingle J, eds. Physical security and safety: a field guide for the practitioner. Occupational safety and health guide. Taylor & Francis Group, Boca Raton, 2014: 63-76.
216. Nolan DP. Handbook of fire and explosion protection engineering principles: for oil, gas, chemical, and related facilities. 2nd edn. Elsevier, Oxford, 2011.
217. Robson F. Induction. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 205.
218. Wanous JP. New employee orientation. In: Rogelberg SG, ed. The SAGE encyclopedia of industrial and organizational psychology. 2nd edn. Vol. 3. SAGE Publications, Thousand Oaks, 2017: 1016-1018.
219. Business & Legal Resources. 50 tips for more effective safety training. Vol. 1. Business & Legal Resources, Nashville, 2014.
220. Kaufman SG. A “one-safe” approach: continuous safety training initiatives. In: Wooley DP, Byers KB, eds. Biological safety: principles and practices. 4th edn. ASM Press, Washington, 2017: 537-549.
221. Wilson KA, Priest HA, Salas E, Burke CS. Can training for safe practices reduce the risk of organizational liability? In: Noy YI, Karwowski W, eds. Handbook of human factors in litigation. Taylor & Francis Group, Boca Raton, 2004: 6-1-6-32.
222. Magley VJ, Fitzgerald LF, Salisbury J, Drasgow F, Zickar MJ. Changing sexual harassment within organizations via training interventions: suggestions and empirical data. In: Burke RJ, Cooper CL, eds. The fulfilling workplace: the organization’s role in achieving individual and organizational health. Psychological and behavioural aspects of risk. Ashgate Publishing, Farnham, 2012: 225-246.
223. Benishek LE, Salas E. Enhancing business ethics: prescriptions for building better ethics training. In: Sekerka LE, ed. Ethics training in action: an examination of issues, techniques, and development. Ethics in practice. Information Age Publishing, Charlotte, 2014: 3-29.
224. Weber J. Ethics training programs. In: Kolb RW, ed. The SAGE encyclopedia of business ethics and society. 2nd edn. SAGE Publications, Thousand Oaks, 2018: 1266-1268.
225. Nelson JK. Ethics training. In: Rogelberg SG, ed. The SAGE encyclopedia of industrial and organizational psychology. 2nd edn. Vol. 1. SAGE Publications, Thousand Oaks, 2017: 442.
226. DeTuncq TH. Evaluating technical training. In: Phillips PP, ed. ASTD handbook of measuring and evaluating training. ASTD Press, Alexandria, 2010: 355-372.
227. Drasgow F, Nye CD, Tay L. Indicators of quality assessment. In: Scott JC, Reynolds DH, eds. Handbook of workplace assessment: evidence-based practices for selecting and developing organizational talent. The professional practice. John Wiley & Sons, San Francisco, 2010: 27-59.
228. Southcombe A. Knowledge, skills and abilities. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 244.
229. Herold R. Managing an information security and privacy awareness and training program. 2nd edn. Taylor & Francis Group, Boca Raton, 2010.
230. Ford DJ. Planning your evaluation project. In: Phillips PP, ed. ASTD handbook of measuring and evaluating training. ASTD Press, Alexandria, 2010: 29-51.
231. Korda P. Strategy and training: making skills a competitive advantage. The strategic management collection. Business Expert Press, New York, 2012.
232. Bowden P, Smythe V. Teaching and training in ethics. In: Bowden P, ed. Applied ethics: strengthening ethical practices. Tilde University Press, Ashwood, 2012: 94-103.
233. Salas E, Weaver SJ, Rosen MA, Gregory ME. Team training for patient safety. In: Carayon P, ed. Handbook of human factors and ergonomics in health care and patient safety. 2nd edn. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2017: 627-647.
234. Keebler JR, Lazzara EH, DiazGranados D. Training design. In: Cuevas HM, Velázquez J, Dattel AR, eds. Human factors in practice: concepts and applications. Taylor & Francis Group, Boca Raton, 2017: 123-136.
235. Moura K. Training evaluation. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 449.
236. Passmore J, Velez MJ. Training evaluation. In: Kraiger K, Passmore J, Rebelo dos Santos N, Malvezzi S, eds. The Wiley Blackwell handbook of the psychology of training, development, and performance improvement. Wiley Blackwell handbooks in organizational psychology. John Wiley & Sons, Chichester, 2015: 136-153.
237. Hughey K. Training management. In: Zeuch M, ed. Dos and don’ts in human resources management: a practical guide. Springer Science+Business Media, Berlin, 2014: 43-44.
238. Lyubovnikova J, West MA. Why teamwork matters: enabling health care team effectiveness for the delivery of high-quality patient care. In: Salas E, Tannenbaum SI, Cohen DJ, Latham GP, eds. Developing and enhancing teamwork in organizations: evidence-based best practices and guidelines. The professional practice. John Wiley & Sons, San Francisco, 2013: 331-372.
239. Johnson CE. Workplace learning: organizations, ethics, and issues. In: Malloch M, Cairns L, Evans K, O’Connor BN, eds. The SAGE handbook of workplace learning. SAGE Publications, London, 2011: 456-465.
240. Pimmer C, Haefliger J, Blumer F. Competence and training management. In: Uhl A, Gollenia LA, eds. A handbook of business transformation management methodology. Taylor & Francis Group, Farnham, 2012: 200-215.
241. Emmerling RJ. Competence development and management. In: Dahlgaard-Park SM, ed. The SAGE encyclopedia of quality and the service economy. Vol. 1. SAGE Publications, Thousand Oaks, 2015: 65-68.

242. Burton-Jones A. Competence. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 58-59.
243. Berdrow I, Evers FT. Competence: bases for employee effectiveness. In: Chalofsky NE, Rocco TS, Morris ML, eds. Handbook of human resource development. John Wiley & Sons, Hoboken, 2014: 201-214.
244. Griffiths B, Washington E. Competencies at work: providing a common language for talent management. Human resource management and organizational behavior collection. Business Expert Press, New York, 2015.
245. Jones K, Halstead DC, Oblack DL. Performance appraisals and competency assessment. In: Garcia LS, ed. Clinical laboratory management. 2nd edn. ASM Press, Washington, 2014: 309-361.
246. Falcone P. 2600 phrases for setting effective performance goals: ready-to-use phrases that really get results. AMACOM, New York, 2012.
247. Panagiotakopoulos A. A short guide to people management: for HR and line managers. Routledge focus on business and management. Taylor & Francis Group, Abingdon, 2016.
248. Cornelious N. Capability procedures. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 39.
249. Greguras GJ. Performance appraisal. In: Rogelberg SG, ed. The SAGE encyclopedia of industrial and organizational psychology. 2nd edn. Vol. 3. SAGE Publications, Thousand Oaks, 2017: 1174.
250. Levy PE, Roberts A, Rosen CC, O'Malley AL. Performance feedback. In: Rogelberg SG, ed. The SAGE encyclopedia of industrial and organizational psychology. 2nd edn. Vol. 3. SAGE Publications, Thousand Oaks, 2017: 1182-1185.
251. Nyfoudi M. Continuing professional development. In: Wilkinson A, Johnstone S, eds. Encyclopedia of human resource management. Edward Elgar Publishing, Cheltenham, 2016: 73-74.
252. Pentella MA. Biosafety for microoganisms transmitted by the airborne route. In: Wooley DP, Byers KB, eds. Biological safety: principles and practices. 4th edn. ASM Press, Washington, 2017: 285-297.
253. Bressler DS, Hawley RJ. Safety considerations in the biosafety level 4 maximum-containment laboratory. In: Wooley DP, Byers KB, eds. Biological safety: principles and practices. 4th edn. ASM Press, Washington, 2017: 695-717.
254. Chin S-K, Older SB. Access control, security, and trust: a logical approach. Chapman & Hall/CRC cryptography and network security. Taylor & Francis Group, Boca Raton, 2010.
255. Doern CD, Holfelder M. Automation and design of the clinical microbiology laboratory. In: Carroll KC, Pfaller MA, eds. Manual of clinical microbiology. 12th edn. Vol. 1. ASM Press, Washington, 2019: 72-85.
256. Leber AL. Biohazard containment. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 15.3.1.1-15.3.4.2.
257. Leber AL. Biological safety and biohazard prevention. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 15.2.1.1-15.2.4.3.
258. Burt CM. Biotechnology laboratories: promoting health and productivity with ergonomics. In: Hedge A, ed. Ergonomic workplace design for health, wellness, and productivity. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2016: 251-274.
259. Crane JT, Richmond JY. Design of biomedical laboratory and specialized biocontainment facilities. In: Wooley DP, Byers KB, eds. Biological safety: principles and practices. 4th edn. ASM Press, Washington, 2017: 343-366.
260. Weindel M, Bluth MH. Establishing a molecular diagnostics laboratory. In: McPherson RA, Pincus MR, eds. Henry's clinical diagnosis and management by laboratory methods. 23rd edn. Elsevier, Saint Louis, 2016: 1360-1376.
261. Heragu SS. Facilities design. 4th edn. Taylor & Francis Group, Boca Raton, 2016.
262. Della-Giustina DE. Fire safety management handbook. 3rd edn. Taylor & Francis Group, Boca Raton, 2013.
263. Alston F, Millikin EJ. Guide to environment safety & health management: developing, implementing, & maintaining a continuous improvement program. Industrial innovation. Taylor & Francis Group, Boca Raton, 2015.
264. Koren H, Bisesi M. Handbook of environmental health. 4th edn. Vol. 1, Biological, chemical, and physical agents of environmentally related disease. Taylor & Francis Group, Boca Raton, 2002.
265. Koren H, Bisesi M. Handbook of environmental health. 4th edn. Vol. 2, Pollutant interactions in air, water, and soil. Taylor & Francis Group, Boca Raton, 2002.
266. Cotts DG, Roper KO, Payant RP. The facility management handbook. 3rd edn. AMACOM, New York, 2010.
267. Glendon I, Clarke S. Human safety and risk management: a psychological perspective. 3rd edn. Taylor & Francis Group, Boca Raton, 2015.
268. Leber AL. Infection control in the laboratory. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 13.7.1.1-13.7.5.5.
269. Binnicker MJ. Laboratory design. In: Loeffelholz MJ, ed. Clinical virology manual. 5th edn. ASM Press, Washington, 2016: 51-55.
270. Lewis SM. Laboratory practice. In: Hoffbrand AV, Catovsky D, Tuddeham EG, eds. Postgraduate haematology. 5th edn. John Wiley & Sons, Hoboken, 2005: 1007-1021.
271. Kehl KS. Laboratory safety. In: Loeffelholz MJ, ed. Clinical virology manual. 5th edn. ASM Press, Washington, 2016: 41-49.
272. Wood W. Laboratory safety. In: Charney W, ed. Handbook of modern hospital safety. 2nd edn. Taylor & Francis Group, Boca Raton, 2009: 27-1-27-16.
273. Davis DL. Laboratory safety: a self-assessment workbook. 2nd edn. ASCP Press, Chicago, 2016.
274. Leber AL. Levels of laboratory safety. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 16.2.1-16.2.6.
275. Dingle J. Locks and access control. In: Ricks TA, Ricks BE, Dingle J, eds. Physical security and safety: a field guide for the practitioner. Occupational safety and health guide. Taylor & Francis Group, Boca Raton, 2014: 95-100.
276. Vink P, Bakker I, Groenesteijn L. Office workplaces. In: Hedge A, ed. Ergonomic workplace design for health, wellness, and productivity. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2016: 153-168.
277. Dingle J, Ricks BE. Overall physical protection program. In: Ricks TA, Ricks BE, Dingle J, eds. Physical security and safety: a field guide for the practitioner. Occupational safety and health guide. Taylor & Francis Group, Boca Raton, 2014: 87-93.
278. Lo SF. Principles of basic techniques and laboratory safety. In: Rifai N, Horvath AR, Wittwer CT, eds. Tietz fundamentals of clinical chemistry and molecular diagnostics. 8th edn. Elsevier, Saint Louis, 2018: 108-125.

279. Stiller M. Quality lighting for high performance buildings. The Fairmont Press, Lilburn, 2012.
280. Walters D, Johnstone R, Frick K, Quinlan M, Baril‐Gingras G, Thébaud‐Mony A. Regulating workplace risks: a comparative study of inspection regimes in times of change. Edward Elgar Publishing, Cheltenham, 2011.
281. Hansknecht J. Room access interlocks and access controls. In: Barat K, ed. Laser safety: tools and training. 2nd edn. Optical science and engineering. Taylor & Francis Group, Boca Raton, 2014: 223‐242.
282. Finch SA. Safety in the hematology laboratory. In: Keohane EM, Smith LJ, Walenga JM, eds. Rodak's hematology: clinical principles and applications. 5th edn. Elsevier, Saint Louis, 2015: 8‐18.
283. McCaughey D, Halbesleben JR, Savage GT, Simons T, McGhan GE. Safety leadership: extending workplace safety climate best practices across health care workforces. In: Simons T, Leroy H, Savage GT, eds. Leading in health care organizations: improving safety, satisfaction and financial performance. Vol. 14. Advances in health care management. Emerald Group Publishing, Bingley, 2013: 189‐217.
284. Land M, Ricks T, Ricks B. Security management: a critical thinking approach. Occupational safety and health guide. Taylor & Francis Group, Boca Raton, 2013.
285. Leber AL. Special pathogens and employee safety. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 15.5.1.1‐15.5.6.1.
286. Alvarado CJ. The physical environment in health care. In: Carayon P, ed. Handbook of human factors and ergonomics in health care and patient safety. 2nd edn. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2017: 215‐234.
287. Wargocki P. Ventilation, indoor air quality, health, and productivity. In: Hedge A, ed. Ergonomic workplace design for health, wellness, and productivity. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2016: 39‐72.
288. Wogalter MS, Laughery KR Sr, Mayhorn CB. Warnings and hazard communications. In: Salvendy G, ed. Handbook of human factors and ergonomics. 4th edn. John Wiley & Sons, Hoboken, 2012: 868‐894.
289. Marmaras N, Nathanael D. Workplace design. In: Salvendy G, ed. Handbook of human factors and ergonomics. 4th edn. John Wiley & Sons, Hoboken, 2012: 599‐615.
290. Joseph C. Workplace design. In: Cuevas HM, Velázquez J, Dattel AR, eds. Human factors in practice: concepts and applications. Taylor & Francis Group, Boca Raton, 2017: 107‐122.
291. Al Kadeem R. Workstation redesign, workplace improvement, and productivity. In: Kumar S, Mital A, Pennathur A, eds. Human work productivity: a global perspective. Taylor & Francis Group, Boca Raton, 2013: 25‐37.
292. Bruno TJ, Svoronos PD. Abbreviations used in the assessment and presentation of laboratory hazards. In: Haynes WM, ed. CRC handbook of chemistry and physics. 99th edn. Taylor & Francis Group, Boca Raton, 2018: 16‐11.
293. Rutala WA, Weber DJ. Disinfection, sterilization, and control of hospital waste. In: Mandell GL, Bennett JE, Dolin R, eds. Mandell, Douglas, and Bennett's principles and practice of infectious diseases. 8th edn. Vol. 2. Elsevier, Philadelphia, 2014: 3294‐3309.
294. Bruno TJ, Svoronos PD. Flammability hazards of common solvents. In: Rumble JR, ed. CRC handbook of chemistry and physics. 99th edn. Taylor & Francis Group, Boca Raton, 2018: 16‐7‐16‐8.
295. Dikshith TS. Handbook of chemicals and safety. Taylor & Francis Group, Boca Raton, 2010.
296. Pośniak M, Skowroń J. Harmful chemical agents in the work environment. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 103‐137.
297. Dikshith TS. Hazardous chemicals: safety management and global regulations. Taylor & Francis Group, Boca Raton, 2013.
298. Rumble JR Jr. Incompatible chemicals. In: Rumble JR Jr, ed. CRC handbook of chemistry and physics. 100th edn. Taylor & Francis Group, Boca Raton, 2019: 16‐3‐16‐4.
299. Leber AL. Management of infectious water. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 15.8.1‐15.8.7.
300. Garvin ML, Kuhn HB, Peters E. Medical waste. In: Charney W, ed. Handbook of modern hospital safety. 2nd edn. Taylor & Francis Group, Boca Raton, 2009: 24‐1‐24‐22.
301. She RC, Butler‐Wu SM. Procedures for the storage of microorganisms. In: Carroll KC, Pfaller MA, eds. Manual of clinical microbiology. 12th edn. Vol. 1. ASM Press, Washington, 2019: 197‐205.
302. Cooper J. Waste management. In: Battersby S, ed. Clay's handbook of environmental health. 21st edn. Taylor & Francis Group, Abingdon, 2017: 790‐834.
303. Carayon P. Human factors and ergonomics in health care and patient safety. In: Carayon P, ed. Handbook of human factors and ergonomics in health care and patient safety. 2nd edn. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2017: 3‐15.
304. HE Kennedy (Editor). *2019 ASHRAE Handbook—HVAC Applications*. American Society of Heating, Refrigerating and Air‐Conditioning Engineers, Atlanta, 2019: 1800 pp.
305. Martin A, Harbison S, Beach K, Cole P. An introduction to radiation protection. 7th edn. Taylor & Francis Group, Boca Raton, 2018.
306. Arduino MJ, McDonnell G. Disinfection and sterilization. In: Carroll KC, Pfaller MA, eds. Manual of clinical microbiology. 12th edn. Vol. 1. ASM Press, Washington, 2019: 224‐242.
307. Jankowska E. Dusts. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 139‐152.
308. Dźwiarek M. Electric current. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 233‐246.
309. Wolska A. Electric lighting for indoor workplaces and workstations. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 247‐265.
310. Karpowicz J, Gryz K. Electromagnetic hazards in the workplace. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 199‐218.
311. Finch E. Facilities change management in context. In: Finch E, ed. Facilities change management. John Wiley & Sons, Chichester, 2011: 1‐16.
312. DiBerardinis LJ, Baum JS, First MW, Gatwood GT, Seth AK. Guidelines for laboratory design: health, safety, and environmental considerations, 4th edn. John Wiley & Sons, Hoboken, 2013.

313. Kowalski W. Hospital airborne infection control. Taylor & Francis Group, Boca Raton, 2011.
314. Pachocki KA. Ionising radiation. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 297-325.
315. Wolska A, Owczarek G. Laser radiation. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 289-296.
316. Grabarczyk ZJ. Static electricity. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 219-232.
317. Payant R, Roper KO. The facility management handbook. 4th edn. AMACOM, New York, 2014.
318. Griffin MJ. Vibration and motion. In: Salvendy G, ed. Handbook of human factors and ergonomics. 4th edn. John Wiley & Sons, Hoboken, 2012: 616-637.
319. Burgess-Limerick R. Workplace vibration effects on health and productivity. In: Hedge A, ed. Ergonomic workplace design for health, wellness, and productivity. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2016: 103-114.
320. Leber AL. Laboratory instrumentation and equipment. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 15.4.1.1-15.4.7.1.
321. Willson K, Ison K, Tabakov S. Medical equipment management. Series in medical physics and biomedical engineering. Taylor & Francis Group, Boca Raton, 2013.
322. Briggs C. Evaluation of hematology analyzers. In: Kittke-Marchant K, Davis BH, eds. Laboratory hematology practice. John Wiley & Sons, Chichester, 2012: 96-102.
323. Gardiner C. Guidelines for evaluation of coagulation analyzers and coagulation testing. In: Kittke-Marchant K, Davis BH, eds. Laboratory hematology practice. John Wiley & Sons, Chichester, 2012: 543-552.
324. Carayon P, Cartmill R, Hoonakker P, Hundt AS, Karsh B-T, Krueger D, et al. Human factors analysis of workflow in health information technology implementation. In: Carayon P, ed. Handbook of human factors and ergonomics in health care and patient safety. 2nd edn. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2017: 507-521.
325. Revell P, Chandramohan L. Selection and implementation of new equipment and procedures. In: Garcia LS, ed. Clinical laboratory management. 2nd edn. ASM Press, Washington, 2014: 506-514.
326. Rebelo dos Santos JM, Marques MA. Technological and organizational changes: challenges for HRM. In: Machado C, Davim JP, eds. Technological challenges and management: matching human and business needs. Manufacturing design and technology. Taylor & Francis Group, Boca Raton, 2016: 15-34.
327. Kelly D. How to ensure correct calibration. *Biomed Sci* 2018; October: 38-39.
328. Siekmann L. Metrological traceability - a concept for standardization in laboratory medicine. *Clin Chem Lab Med* 2013; 51: 953-957.
329. Wallard A. Metrology principles and organization. In: Czichos H, Saito T, Smith L, eds. Springer handbook of metrology and testing. 2nd edn. Springer Science+Business Media, Berlin, 2011: 23-37.
330. Petrozzi S. Practical instrumental analysis: methods, quality assurance and laboratory management. Wiley-VCH, Weinheim, 2012.
331. JL Bucher (Editor). *The Metrology Handbook*. 2nd edn. Quality Press, Milwaukee, 2012: 560 pp.
332. Bucher JL. The quality calibration handbook: developing and managing a calibration program. Quality Press, Milwaukee, 2006.
333. Nicholas JV, White DR. Traceable temperatures: an introduction to temperature measurement and calibration. 2nd edn. Wiley series in measurement science and technology. John Wiley & Sons, Chichester, 2001.
334. Dźwiarek M. Basic principles for protective equipment application. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 579-591.
335. Ross J. Building an effective PPE program. *Med Lab Obs* 2017; 49: 24-26.
336. Levitt J. Complete guide to preventive and predictive maintenance. 2nd edn. Industrial Press, New York, 2011.
337. Arduino MJ. Decontamination in the microbiology laboratory. In: Wooley DP, Byers KB, eds. Biological safety: principles and practices. 5th edn. ASM Press, Washington, 2017: 463-473.
338. Wendt C, Frei R, Widmer AF. Decontamination, disinfection, and sterilization. In: Jorgensen JH, Pfaller MA, eds. Manual of clinical microbiology. 11th edn. Vol. 1. ASM Press, Washington, 2015: 183-216.
339. Just H-M, Roggenkamp E, Reinhardt A. Hygiene in medical technology. In: Kramme R, Hoffman K-P, Pozos R, eds. Springer handbook of medical technology. Springer handbooks. Springer Science+Business Media, Berlin, 2011: 11-34.
340. Jardine AK, Tsang AH. Maintenance, replacement, and reliability: theory and applications. 2nd edn. Taylor & Francis Group, Boca Raton, 2013.
341. Fennigkoh L. Managing medical equipment risks. In: Bronzino JD, Peterson DR, eds. The biomedical engineering handbook. 4th edn. Vol. II. Medical devices and human engineering. Taylor & Francis Group, Boca Raton, 2014: 52-1-52-7.
342. Majchrzycka K, Bartkowiak G, Stefko A, Kamińska W, Grzegorz O, Pietrowski P, et al. Personal protective equipment. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 515-549.
343. Silman N. Personal protective equipment. In: Weidmann M, Silman N, Butaye P, Elschner M, eds. Working in biosafety level 3 and 4 laboratories: a practical introduction. John Wiley & Sons, Weinheim, 2014: 41-45.
344. McCullough NV. Personal respiratory protection. In: Wooley DP, Byers KB, eds. Biological safety: principles and practices. 4th edn. ASM Press, Washington, 2017: 425-441.
345. Eagleson DC, Held KF, Gaudette L, Quint CW Jr, Stuart DG. Primary barriers: biological safety cabinets, fume hoods, and glove boxes. In: Wooley DP, Byers KB, eds. Biological safety: principles and practices. 4th edn. ASM Press, Washington, 2017: 375-398.
346. Bruno TJ, Svoronos PD. Selection of laboratory gloves. In: Rumble JR, ed. CRC handbook of chemistry and physics. 99th edn. Taylor & Francis Group, Boca Raton, 2018: 16.19.
347. Bruno TJ, Svoronos PD. Selection of protective laboratory garments. In: Rumble JR, ed. CRC handbook of chemistry and physics. 99th edn. Taylor & Francis Group, Boca Raton, 2018: 16-19.

348. Bruno TJ, Svoronos PD. Selection of respirator cartridges and filters. In: Rumble JR, ed. CRC handbook of chemistry and physics. 99th edn. Taylor & Francis Group, Boca Raton, 2018: 16-10.
349. Kramme R, Uhlig H-P. Technical safety of electrical medical technology equipment and systems. In: Kramme R, Hoffmann K-P, Pozos R, eds. Springer handbook of medical technology. Springer handbooks. Springer Science+Business Media, Berlin, 2011: 35-47.
350. Bartkowiak G, Baszczyński K, Bodgan A, Brochocka A, Hrynyk R, Irzamańska E, et al. Use of personal protective equipment in the workplace. In: Salvendy G, ed. Handbook of human factors and ergonomics. 4th edn. John Wiley & Sons, Hoboken, 2012: 895-909.
351. Dempsey PG. Accident and incident investigation. In: Salvendy G, ed. Handbook of human factors and ergonomics. 4th edn. John Wiley & Sons, Hoboken, 2012: 1085-1091.
352. Wells B, Barat K. Accident investigation. In: Barat K, ed. Laser safety: tools and training. 2nd edn. Optical science and engineering. Taylor & Francis Group, Boca Raton, 2014: 193-201.
353. Studenski R, Dudka G, Bojanowski R. Accidents at work. In: Koradecka D, ed. Handbook of occupational safety and health. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2010: 417-447.
354. Leber AL. Management of laboratory accidents. In: Leber AL, ed. Clinical microbiology procedures handbook. 4th edn. Vol. 3. ASM Press, Washington, 2016: 15.7.1-15.7.7.
355. Silver EA, Pyke DF, Thomas DJ. Inventory and production management in supply chains. 4th edn. Taylor & Francis Group, Boca Raton, 2016.
356. Rossetti MD, Buyurgan N, Pohl E. Medical supply logistics. In: Hall R, ed. Handbook of healthcare system scheduling. International series in operations research & management science. Springer Science+Business Media, New York, 2012: 245-280.
357. Atlas R, Snyder J. Reagents, stains, and media: bacteriology. In: Carroll KC, Pfaller MA, eds. Manual of clinical microbiology. 12th edn. Vol. 1. ASM Press, Washington, 2019: 331-361.
358. Linscott AJ, Sharp SE. Reagents, stains, and media: parasitology. In: Carroll KC, Pfaller MA, eds. Manual of clinical microbiology. 12th edn. Vol. 2. ASM Press, Washington, 2019: 2406-2413.
359. Lindsley MD. Reagents, stains, media, and cell cultures: mycology. In: Carroll KC, Pfaller MA, eds. Manual of clinical microbiology. 12th edn. Vol. 2. ASM Press, Washington, 2019: 2025-2034.
360. Capraro GA, Ginocchio CC. Reagents, stains, media, and cell cultures: virology. In: Carroll KC, Pfaller MA, eds. Manual of clinical microbiology. 12th edn. Vol. 2. ASM Press, Washington, 2019: 1462-1471.
361. Eksioglu SD. Inventory management in supply chains. In: Floudas CA, Pardalos PM, eds. Encyclopedia of optimization. 2nd edn. Springer Science+Business Media, New York, 2009: 1766-1770.
362. Martin A, Harbison S, Beach K, Cole P. An introduction to radiation protection. 7th edn. Taylor & Francis Group, Boca Raton, 2018.
363. West J. Laboratory information management systems: an introduction. *Biomed Sci* 2017; April: 22-23.
364. Kroenke DM, Boyle RJ. Using MIS. 10th edn. Pearson Education, Harlow, 2017.
365. Karsh B-T, Holden RJ, Or CK. Human factors and ergonomics of health information technology implementation. In: Carayon P, ed. Handbook of human factors and ergonomics in health care and patient safety. 2nd edn. Human factors and ergonomics. Taylor & Francis Group, Boca Raton, 2017: 249-264.
366. Reuvid J, Sutherland M. Managing business opportunities and information risks. In: Reuvid J, ed. Managing business risk: a practical guide to protecting your business. 10th edn. Kogan Page, London, 2012: 55-66.
367. Stapleton JJ. Security without obscurity: a guide to confidentiality, authentication, and integrity. Taylor & Francis Group, Boca Raton, 2014.
368. Drewitt T. A manager's guide to ISO 22301: a practical guide to developing and implementing a business continuity management system. IT Governance, Ely, 2013.
369. Matthews DR. Electronically stored information: the complete guide to management, understanding, acquisition, storage, search, and retrieval. 2nd edn. Taylor & Francis Group, Boca Raton, 2016.
370. Schultz EE. Human factors and information security. In: Salvendy G, ed. Handbook of human factors and ergonomics. 4th edn. John Wiley & Sons, Hoboken, 2012: 1250-1266.
371. Gil-Pechuán I, Pullicino P, García MP. Implementation methodology of effective governance to ensure the quality of IT service. In: Peris-Ortiz M, Álvarez-García J, eds. Action-based quality management: strategy and tools for continuous improvement. Springer International Publishing, Cham, 2014: 175-192.
372. Herzig T, Walsh T. Implementing information security in healthcare: building a security program. HIMSS book. HIMSS Publishing, Chicago, 2013.
373. Ganney PS. Information communications technology. In: Taktak A, Ganney PS, Long D, White P, eds. Clinical engineering: a handbook for clinical and biomedical engineers. Elsevier, Oxford, 2014: 107-131.
374. Taylor A, Alexander D, Finch A, Sutton D. Information security management principles. 2nd edn. BCS Learning and Development, Swindon, 2013.
375. Landoll DJ. Information security policies, procedures, and standards: a practitioner's reference. Taylor & Francis Group, Boca Raton, 2016.
376. Williams BL. Information security policy development for compliance: ISO/IEC 27001, NIST SP 800-53, HIPAA standard, PCI DSS V2.0, and AUP V5.0. Taylor & Francis Group, Boca Raton, 2013.
377. Murphy JC. Integrated business continuity planning. In: Tipton HF, Nozaki MK, eds. Information security management handbook. 6th edn. Vol. 4. Taylor & Francis Group, Boca Raton, 2010: 357-395.
378. Gürsel G. Interoperability in laboratory management information systems. In: Khosrow-Pour M, Clarke S, Jennex ME, Becker A, Annttiroiko A-V, eds. Standards and standardization: concepts, methodologies, tools, and applications. Vol. I. IGI Global, Hershey, 2015: 409-425.

379. Catrantzos N. Managing the insider threat: no dark corners. Taylor & Francis Group, Boca Raton, 2012.
380. Obuh AO, Babatope I. Organizational password policy. In: Information Resources Management Association, ed. Global business: concepts, methodologies, tools and applications. Vol. IV. Contemporary research in information science and technology. IGI Global, Hershey, 2011: 2420‑2432.
381. Shaurette KM, Schleppenbach T. Protecting us from us: human firewall vulnerability assessments. In: O'Hanley R, Tiller JS, eds. Information security management handbook. 6th edn. Vol. 7. Taylor & Francis Group, Boca Raton, 2013: 151‑158.
382. Bacik S. Security in the cloud. In: O'Hanley R, Tiller JS, eds. Information security management handbook. 6th edn. Vol. 7. Taylor & Francis Group, Boca Raton, 2013: 35‑42.
383. Katsikas SK. Security of the electronic medical record. In: Furht B, Agarwal A, eds. Handbook of medical and healthcare technologies. Springer Science+Business Media, New York, 2013: 401‑416.
384. Mitts JS. Testing business continuity and disaster recovery plans. In: Tipton HF, Krause M, eds. Information security management handbook. 6th edn. Vol. 1. Taylor & Francis Group, Boca Raton, 2007: 1629‑1643.
385. Landoll DJ. The security risk assessment handbook: a complete guide for performing security risk assessments. 2nd edn. Taylor & Francis Group, Boca Raton, 2011.
386. Sloan RH, Warner R. Unauthorized access: the crisis in online privacy and security. Taylor & Francis Group, Boca Raton, 2013.