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PRC HEALTH INDUSTRY STANDARD

WS/T 368—2025

Replaces WS/T 368—2012

Standard for management of air purification in hospitals

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Issued by **National Health Commission of the People's Republic of China**

Foreword

This standard is recommended.

This standard replaces the *Management specification of air cleaning technique in hospitals* (WS/T 368—2012). In comparison with WS/T 368—2012, apart from structural adjustments and editorial changes, the main technical changes are as follows:

- Deletes the terms and definitions including "clean operating department (room)" and "air cleaning and disinfection device" (see Sections 3.2 and 3.5 of the 2012 edition) and adds the terms and definitions including "ventilation", "mechanical ventilation", "cleaning technology", and "air disinfecting machine" (see Sections 3.2, 3.4, 3.6 and 3.7 of this edition);

- Changes "Management and Hygienic Requirements" to "General Requirements" (see Section 4 of this edition);

- Deletes the specific hygienic requirements for air purification (see Section 4.2 of the 2012 edition) and, in the General Requirements section, requires that the hygienic requirements for air in different departments comply with the standard GB 15982 (see Section 4.5 of this edition);

- Changes "Air Purification Methods" to "Management requirements", no longer covering working principles or design-related content, and primarily specifying management requirements during use (see Section 5 of this edition);

- Adds some specific ventilation management requirements (see Sections 5.2, 5.3.2, 5.3.3 and 5.3.4 of this edition);

- Adds specific basic requirements for the central air-conditioning ventilation system and management requirements during the use of air-conditioning systems with different principles (see Sections 5.5.1, 5.5.2, 5.5.3 and 5.5.4 of this edition);

- Integrates the content on air disinfecting machines, changing it to basic requirements, recirculating air disinfecting machines and air disinfecting machines that generate chemical factors (see Sections 5.7.1, 5.7.2 and 5.7.3 of this edition);

- Deletes the specific content of chemical disinfection methods (see Section 5.7 of the 2012 edition) and only specifies compliance with the standard WS/T 367;

- Adds specific management requirements during the use of air cleaning technology and revises the maintenance requirements for air cleaning technology based on newly issued standard (see Sections 5.9.1, 5.9.2 and 5.9.3 of this edition).

This standard was prepared, technically reviewed and technically advised by the Subcommittee on Healthcare-associated Infection Control of the National Health Standards Commission. It was coordinated and format-reviewed by the Medical Service Administration Center of the National Health Commission. Business management was handled by the Department of Medical Administration of the National Health Commission, and overall management was handled by the Department of Legal Affairs of the National Health Commission.

This standard was drafted by: Peking University First Hospital, Xiangya Hospital of Central South University, Chinese Center for Disease Control and Prevention, Xuanwu Hospital of Capital Medical University, Shandong Provincial Hospital Affiliated to Shandong First Medical University, Second Affiliated Hospital of Zhejiang University School of Medicine, Guangdong Provincial People's Hospital, China Institute of Building Standard Design & Research Co., Ltd., and Tongji University.

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This standard was first published in 2012. This is the first revision.

Standard for management of air purification in hospitals

National Health Commission of the People's Republic of China

1 Scope

This standard specifies the general requirements, management requirements, air purification methods for different departments, air purification methods for different situations, and monitoring of air purification effectiveness in hospitals.

This standard applies to hospitals of all levels and types. Other medical institutions may implement it as a reference.

2 Normative References

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this document. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the normative document (including any amendments) referred to applies.

Hygienic standard for disinfection in hospitals (GB 15982)

General principle on disinfection for infectious focus (GB 19193)

General requirements for air disinfectant (GB 27948)

Requirements of environmental control for hospital negative pressure isolation ward (GB/T 35428)

Architectural technical code for hospital clean operating department (GB 50333)

Code for design of general hospital (GB 51039)

Regulation of disinfection technique in healthcare settings (WS/T 367)

Operational management of central air conditioning systems for hospitals (WS 488)

Hygienic Specifications for Operation and Management of Air-conditioning Ventilation Systems in Office Buildings and Public Places during COVID-19 Epidemic (WS 696)

General hygienic requirement for air disinfecting machine (WS/T 648)

Hygienic evaluation specification of central air conditioning ventilation system in public places (WS/T 10004)

Specification of cleaning and disinfecting for central air conditioning ventilation system in public places (WS/T 10005)

Hygienic specification of central air conditioning ventilation system in public places (WS 10013)

3 Terms and definitions

The terms and definitions defined as follows apply to this document.

3.1 Air purifying

A technique or method for reducing microorganisms, particulate matter, harmful gases, etc., in indoor air to render it harmless.

3.2 Ventilation

A method of providing outdoor air to an indoor space and distributing the air within the space to dilute and remove pollutants generated indoors, thereby improving air quality.

3.3 Natural ventilation

Ventilation achieved by the movement of outdoor air through specially constructed openings (such as windows, doors, atriums, wind towers and small vents) driven by wind pressure or thermal pressure caused by the density difference between indoor and outdoor air. Ventilation effectiveness depends on climate, building envelope and human behaviour.

3.4 Mechanical ventilation

Ventilation achieved by the movement of air produced by the operation of ventilation equipment such as fans and exhaust fans. Ventilation equipment may be installed in windows, on walls or in ducts, and used to supply air to or exhaust air from a room.

3.5 Central air-conditioning ventilation system

The assembly of all equipment, ducts and accessories, instruments and meters used for the centralized treatment, delivery and distribution of air in order to achieve set parameters for air tempera-

ture, humidity, cleanliness and airflow velocity in a room or enclosed space.

[Source: WS/T 10005—2023, 3.1]

3.6 Cleaning technology

A technique that captures the vast majority of particles (solid-phase, liquid-phase or solid-liquid two-phase) by means of barrier-type air filters, ensuring that the total amount of microorganisms and particles in the controlled space remains within permissible levels.

3.7 Air disinfecting machine

A device that uses physical or chemical methods to kill or remove microorganisms in indoor air, achieves disinfection requirements, and possesses independent power and independent operation capability.

[Source: WS/T 648—2019, 3.1]

4 General requirements

4.1 Hospitals shall follow the provisions of relevant laws, regulations and standards on air purification, formulate corresponding air purification management systems based on disease transmission routes and infection prevention and control needs in consideration of their actual circumstances, and organise their implementation.

4.2 Hospitals shall formulate work procedures and emergency plans for air purification management during the epidemic period of respiratory infectious diseases and organise drills.

4.3 Hospitals shall provide training on knowledge of relevant laws, regulations and standards for the use and management personnel of air purification equipment, clarify the duties and tasks of each post, and ensure the normal operation of air purification equipment.

4.4 Hospitals shall take appropriate air purification measures based on the results of risk assessment of respiratory infectious disease infections in each department, so that the indoor air quality meets the requirements of the corresponding national standards, and prevent and control the transmission of respiratory infectious diseases.

4.5 Hospitals shall inspect and manage the air quality of relevant departments. The hygienic requirements for air in different departments shall comply with the standard GB 15982.

4.6 Hospitals shall ensure that a professionally trained team is responsible for the installation, maintenance and effectiveness evaluation of air purification systems and facilities.

5 Management Requirements

5.1 Selection principles

Full consideration shall be given to the function and controlled requirements of the room, the hygienic conditions of adjacent rooms, and indoor and outdoor environmental factors in selecting the air purification method and the pressure gradient of adjacent rooms.

5.2 General requirements

When functional and controlled requirements and ventilation conditions are satisfied, natural ventilation shall be fully utilized. Where natural ventilation cannot meet functional requirements, mechanical ventilation, central air-conditioning ventilation system or other effective air purification measures shall be added according to the environmental category.

5.3 Natural ventilation

5.3.1 Ventilation shall be carried out in a timely manner according to the season, outdoor wind force and temperature.

5.3.2 Regarding natural ventilation, factors such as airflow patterns, the main driving force, the location and size of openings, and wind direction shall be considered comprehensively.

5.3.3 When natural ventilation is used in areas such as wards and consultation rooms, it shall be performed no fewer than 2 times per day, each time for not less than 30 minutes. During the epidemic period of airborne diseases, the frequency of ventilation shall be increased.

5.3.4 For medical rooms intended for airborne diseases, natural ventilation shall not affect the pre-set airflow organization in the room.

5.4 Mechanical ventilation

5.4.1 Mechanical air supply is suitable for places with relatively clean indoor air (such as healthcare

worker offices and the clean area of a fever clinic). The mechanical air supply openings should be located away from natural ventilation openings such as doors and windows.

5.4.2 Mechanical exhaust is suitable for places with relatively contaminated indoor air (such as toilets and the contaminated area of a fever clinic). Indoor exhaust openings should be located away from doors and installed on the opposite wall. When mechanically exhausting, windows on the same side shall be closed.

5.4.3 Mechanical air supply and mechanical exhaust are suitable for areas where airflow direction needs to be controlled. The number of air changes shall be set according to ventilation needs, or positive or negative pressure shall be maintained indoors to ensure that air flows from clean areas to contaminated areas.

5.4.4 Mechanical ventilation equipment shall be cleaned regularly. In case of contamination, it shall be cleaned and disinfected promptly.

5.5 Central air-conditioning ventilation system

5.5.1 General requirements

5.5.1.1 The central air-conditioning ventilation system shall comply with the standards GB 51039, WS 10013, WS 488 and WS 696.

5.5.1.2 In areas where temperature and humidity control is required, the system shall remain in operation and shall not be arbitrarily shut down for the purpose of respiratory infectious disease prevention and control.

5.5.1.3 Before an air-conditioning ventilation system is put into use, the characteristics of the system shall be understood, the detailed circumstances of the floors and rooms served by each system shall be clarified, management measures and corresponding emergency plans shall be formulated, response measures for emergencies such as the epidemic period of respiratory infectious diseases shall be clarified, and a designated person shall be assigned for responsibility.

5.5.1.4 The fresh air intake and its surrounding environment shall be kept clean to ensure that the fresh air is not contaminated.

5.5.1.5 Hygienic evaluation and cleaning and disinfection of the central air-conditioning ventilation system shall comply with the standards WS/T 10004 and WS/T 10005. Hygienic evaluation shall be performed at least once per year. The sampling proportion for hygienic inspection shall not be less than 5% of the total number of air duct systems corresponding to the air handling units. For each type of central air-conditioning system, at least one system of each type shall be sampled. For each system, 3 to 5 representative parts shall be selected. For cooling water and condensate, not less than one part each shall be selected. For each air-conditioning system, 3 to 5 air supply outlets shall be selected for microbial-related indicator testing, and one sampling point shall be set up at each air supply outlet.

5.5.1.6 Hospitals shall formulate inspection, cleaning, disinfection and replacement schedules for their own air filters based on the local environmental conditions and frequency of use. The inspection period, evaluation indicators and management requirements for air filters shall preferably be carried out in accordance with Table 1.

5.5.1.7 Air handling units, cooling coils, heating (humidifying) devices, condensate pans, etc., shall be cleaned annually. Open cooling towers and cooling water systems shall be cleaned and disinfected at least once each year.

5.5.1.8 Exhaust outlet and return air outlet filters (screens) shall be regularly cleaned and disinfected according to the contamination level, and shall be cleaned and disinfected promptly in case of contamination.

5.5.1.9 During the outbreak/epidemic period of airborne diseases, where the type of air-conditioning ventilation system, the source of fresh air, or the scope of air supply is unknown, the air-conditioning system shall be

Table 1 Air filter inspection periods, evaluation indicators and management requirements

Filter Type	Inspection Period	Evaluation Indicator	Management Requirement
Fresh air intake filter (screen)	7 days (preferably shorter in sandy areas)	>50% of mesh occluded	Clean and disinfect
Reusable coarse filter	20 days	>50% of mesh occluded	Clean and disinfect
Single-use coarse filter	≤2 months	Resistance exceeds initial rated resistance by 50 Pa	Replace
Medium-efficiency filter	≤4 months	Resistance exceeds initial rated resistance by 60 Pa	Replace

temporarily shut down.

5.5.1.10 Air-conditioning condensate water from isolation wards (rooms) for patients with airborne diseases shall be collected centrally and discharged into the wastewater treatment system. Where the wastewater treatment system is inadequate, condensate water shall be discharged into the sewer after disinfection treatment. Chlorine-containing disinfectants are preferable for condensate water disinfection.

5.5.1.11 After the end of the outbreak/epidemic period of airborne diseases, it is appropriate to conduct a comprehensive cleaning and disinfection of the central air-conditioning ventilation system throughout the hospital.

5.5.2 Management requirements for fan coil air-conditioning system

5.5.2.1 During operation, attention shall be paid to the cooling coils, condensate pans and condensate water to prevent contamination by microorganisms such as *Legionella pneumophila*.

5.5.2.2 If a patient with an airborne disease has been treated, before admitting other patients after the patient leaves, it is appropriate to clean, disinfect or replace the air supply outlets, condensate pans, fan coils and other equipment and components in the diagnosis and treatment room.

5.5.2.3 For fan coil plus fresh air air-conditioning systems: during the outbreak/epidemic period of airborne diseases, the fresh air system shall be started 1 hour before the area is put into use, and the exhaust system shall be ensured to operate normally. The exhaust system shall be started 1 hour before the area is put into use each day or shall continue to operate for 1 hour after shut-down.

5.5.2.4 For fan coil air-conditioning systems without fresh air: during the outbreak/epidemic period of airborne diseases, each independently temperature-controlled space shall be inspected to ensure that its air supply and return air are directly connected by enclosed ducts to the fan coil unit, and that return air is not drawn from connected suspended ceilings. At the same time, doors and windows shall be opened for ventilation for 20 minutes to 30 minutes before the air conditioner is turned on, the air conditioner shall be turned on and adjusted to the maximum airflow and operated for at least 5 minutes before doors and windows are closed. After the air conditioner is turned off, doors and windows shall be opened for ventilation for at least 30 minutes.

5.5.3 Management requirements for all-air air-conditioning system

5.5.3.1 When a patient with an infectious disease or a suspected patient with an infectious disease who may be dispersed through the central air-conditioning ventilation system appears in a certain area of a hospital building, all air supply outlets in that area shall be immediately closed or the terminal equipment of the air-conditioning system in that area shall be immediately shut down.

5.5.3.2 During the outbreak/epidemic period of airborne diseases, the system shall operate at the maximum fresh air flow rate. Depending on the severity of the epidemic and whether the

return air outlets (ducts) or air-conditioning units are equipped with filter devices of medium-high efficiency or above or effective disinfection devices, the return air shall be closed or reduced accordingly, specifically in accordance with the standard WS 696. The fresh air and exhaust systems shall be started 1 hour before the area is put into use each day or shall continue to operate for 1 hour after shut-down.

5.5.3.3 If a patient with an airborne disease has been treated, after the patient leaves, it is appropriate to clean, disinfect or replace the filters, air supply outlets, air handling units, cooling coils, heating (humidifying) devices, condensate pans and other equipment and components of the air-conditioning ventilation system operating in that area.

5.5.4 Management requirements for multi-split air-conditioning system

During the outbreak/epidemic period of airborne diseases, doors and windows or the fresh air system shall be opened for ventilation for 20 minutes to 30 minutes before the air conditioner is turned on, the air conditioner shall be turned on and adjusted to the maximum airflow and operated for at least 5 minutes before doors and windows are closed. After the air conditioner is turned off, doors and windows shall be opened for ventilation for at least 30 minutes.

5.6 UV lamp disinfection

5.6.1 Ultraviolet (UV) lamps shall be suspended or mobile for direct irradiation, with UV irradiance ⩾1.5 W/m^2 and irradiation time ⩾30 minutes, or following the product instructions; alternatively, they may be installed in the air return path to continuously irradiate and disinfect the recirculated air.

5.6.2 In areas of general wards without ventilation conditions, such as treatment preparation rooms, treatment rooms and procedure rooms, UV lamps shall be used for irradiation disinfection daily, once per day, each irradiation for ⩾30 minutes or following the product instructions.

5.6.3 When using UV lamps to disinfect indoor air, a thermometer and hygrometer shall be installed in the room. The room shall be kept clean and dry to reduce dust and water mist. When the temperature is <20℃ or >40℃, or when the relative humidity is <25% or >60%, the irradiation time shall be appropriately extended.

5.6.4 UV lamps shall not be used for irradiation disinfection when people are present in the room.

5.6.5 The surface of UV lamps shall be kept clean. They shall be wiped once per week with 70%~80% (volume ratio) ethanol cotton balls or gauze. When dust or oil contamination is found on the lamp tube surface, it shall be wiped clean promptly.

5.6.6 The cumulative use time of UV lamps shall be recorded. Irradiance testing shall be performed before use after installation and at least once every six months during use. At a voltage of 220 V, relative humidity of 60% and temperature of 20℃, the UV irradiance of 253.7 nm (in-use intensity) shall not be less than 70 μW/cm^2. When the irradiance falls below the required value, the lamp tube shall be replaced promptly.

5.6.7 When UV disinfection devices are installed inside ventilation and air-conditioning systems, the UV lamp tubes shall operate continuously for 24 hours a day to provide continuous UV radiation, maintaining a certain UV irradiance inside the air-conditioning unit.

5.7 Air disinfecting machine

5.7.1 General requirements

5.7.1.1 Air disinfecting machines shall comply with the standard WS/T 648.

5.7.1.2 An appropriate air disinfecting machine shall be selected according to the volume of the area to be disinfected and the applicable volume requirements stated in the product instructions of the air disinfecting machine, and shall be installed and used in accor-

dance with the product instructions.

5.7.1.3 When using an air disinfecting machine to disinfect the air in a designated area, disinfection shall be performed in an enclosed environment, avoiding air exchange with the outdoors.

5.7.1.4 No items shall cover or obstruct the air inlet or outlet of the air disinfecting machine.

5.7.1.5 Maintenance and servicing of air disinfecting machines shall follow the product instructions.

5.7.2 Recirculating air disinfecting machine

5.7.2.1 Suitable for use when people are present, and dynamic air disinfection methods shall be selected as needed.

5.7.2.2 When using UV air disinfection devices to disinfect indoor air, the indoor relative humidity should be ⩽80%.

5.7.2.3 For air disinfecting machines that achieve the disinfection purpose by relying on recirculated air flow, the initial recirculated air flow of the entire unit shall be greater than 8 times the applicable volume.

5.7.2.4 During dynamic air disinfection, the machine shall not be arbitrarily turned off.

5.7.3 Air disinfecting machines that generate chemical factors

5.7.3.1 When using air disinfecting machines that generate chemical factors such as chlorine dioxide or ozone to disinfect indoor air, disinfection shall be performed under indoor unmanned conditions, and attention shall be paid to the protection of indoor items to avoid damage to items by strong oxidising agents. Personnel may enter only after the indoor disinfecting factors have been reduced to levels that have no impact on human health (generally, at least 30 minutes after the machine is shut down). Where conditions permit, windows may be opened for ventilation or neutralizing agents may be used to allow the disinfecting factors to disperse and be neutralized as quickly as possible.

5.7.3.2 When using an ozone air disinfecting machine to disinfect indoor air, the indoor relative humidity should be ⩾70%.

5.8 Chemical disinfection method

For specific chemical disinfection methods and precautions, compliance with the standard WS/T 367 is required.

5.9 Cleaning technology

5.9.1 General requirements

5.9.1.1 Key hospital departments such as clean operating departments, haematopoietic stem cell transplant wards (areas) and negative pressure isolation wards (areas) and other controlled environments may use cleaning technology for air treatment and environmental control, and shall comply with the standards GB 50333, GB/T 35428, and GB 51039.

5.9.1.2 Air cleaning technology shall not be used as the sole air purification method in operating departments.

5.9.2 Operation management

5.9.2.1 Before using an area where cleaning technology is applied, the relevant cleaning equipment shall be started for at least 30 minutes before use.

5.9.2.2 During operation, doors shall be kept closed, and the number of personnel shall be limited according to the room size and fresh air requirements.

5.9.2.3 The area around return air outlets shall not be covered or obstructed by other items.

5.9.2.4 When surgery is performed in a negative pressure area where cleaning technology is applied for a patient with a respiratory infectious disease, the cleaning system may operate normally. After the surgery is completed, it shall continue to operate for 1 hour before being shut down, and the return air outlet filters shall be treated following the product instructions.

5.9.2.5 The doors of the buffer room of a negative pressure isolation ward (area) shall have an

interlocking function with an emergency unlocking function. The door on the contaminated area side of the buffer room shall be closed for 1 minute before the door on the clean area side may be opened.

5.9.2.6 Upon entering a negative pressure isolation ward (area), the differential pressure value shown on the micro-differential pressure gauge shall be observed. If it does not comply with the required pressure difference range, the relevant maintenance department shall be contacted immediately for inspection and repair.

5.9.3 Maintenance and servicing requirements

5.9.3.1 Air handling units and fresh air system units shall be regularly inspected and kept clean.

5.9.3.2 The maintenance of fresh air intake filters (screens), coarse filters, and medium-efficiency filters shall be carried out in accordance with Section 5.5.1.6 of this standard.

5.9.3.3 Terminal sub-high-efficiency or high-efficiency filters should be inspected at least once per year. When the resistance reaches twice the initial operating resistance, they should be replaced. When replacing high-efficiency filters in the exhaust devices of negative pressure isolation wards, disinfection shall be performed first, and protective measures shall be taken.

5.9.3.4 Exhaust outlet and return air outlet filters (screens) shall be regularly cleaned and disinfected according to the contamination level, and shall be cleaned and disinfected promptly in case of contamination.

5.9.3.5 A dedicated maintenance and management person shall be assigned, who shall follow the equipment instructions for servicing and maintenance. An operation manual shall be developed, and inspections and records shall be kept.

5.9.3.6 The micro-differential pressure gauges installed between rooms shall be regularly inspected and calibrated and records shall be kept.

6 Air Purification Methods for Different Departments

6.1 Air purification methods for operating departments

The methods that may be selected include:

(a) Central air-conditioning ventilation system equipped with filtration devices of medium-high efficiency or above or effective disinfection devices;

(b) Cleaning technology;

(c) Air disinfecting machines that comply with the standard WS/T 648;

(d) UV lamp irradiation disinfection (under unmanned conditions);

(e) Other qualified air disinfection products capable of achieving a total bacterial count in the air after disinfection of ≤4 cfu / (15 minutes · 9 cm diameter plate).

6.2 Air purification methods for other Class Ⅱ environments (e.g., ICU, catheterisation rooms, etc.)

The methods that may be selected include:

(a) Ventilation;

(b) Central air-conditioning ventilation system equipped with filtration devices of medium-high efficiency or above or effective disinfection devices;

(c) Cleaning technology;

(d) Air disinfecting machines that comply with the standard WS/T 648;

(e) UV lamp irradiation disinfection (under unmanned conditions);

(f) Other qualified air disinfection products capable of achieving a total bacterial count in the air after disinfection of ≤4 cfu / (15 minutes · 9 cm diameter plate).

6.3 Air purification methods for Class Ⅲ environments (e. g., general wards, treatment preparation rooms, CSSD, etc.)

The methods that may be selected include:

(a) Ventilation;

(b) Central air-conditioning ventilation system;

(c) Air disinfecting machines that comply with

the standard WS/T 648;

(d) UV lamp irradiation disinfection (under unmanned conditions);

(e) Other qualified air disinfection products capable of achieving a total bacterial count in the air after disinfection of ⩽4 cfu / (5 minutes · 9 cm diameter plate).

7 Air Purification Methods for Different Situations

7.1 Air purification methods when people are present

The methods that may be selected include:

(a) Natural ventilation is the first choice in general wards; where natural ventilation is inadequate, mechanical ventilation should be used;

(b) Central air-conditioning ventilation system;

(c) Air disinfecting machines that comply with the standard WS/T 648 and are suitable for use when people are present;

(d) Cleaning technology;

(e) Other qualified air disinfection products that are harmless to human health.

7.2 Air purification methods when no one is present

The methods that may be selected include:

(a) The air purification methods specified in Section 7.1 of this standard;

(b) UV lamp irradiation disinfection;

(c) Chemical disinfection methods;

(d) Air disinfecting machines that comply with the standard WS/T 648.

7.3 Air purification methods for areas where patients with respiratory infectious diseases are located

The methods that may be selected include:

(a) Hospitals with objective constraints may use ventilation, including natural ventilation and mechanical ventilation, and mechanical exhaust is preferred;

(b) Central air-conditioning ventilation system equipped with filtration devices of medium-high efficiency or above or effective disinfection devices;

(c) Air disinfecting machines that comply with the standard WS/T 648 and are suitable for use when people are present;

(d) Cleaning technology that achieves negative pressure requirements.

7.4 Terminal disinfection

Terminal disinfection of the ward after the discharge, transfer to another department, transfer to another hospital or death of a patient with a respiratory infectious disease shall comply with the standards GB 19193 and WS/T 367.

8 Monitoring of Air Purification Effectiveness

8.1 Departments to be monitored

Hospitals shall monitor the air purification quality of high-risk departments such as operating departments, delivery rooms, catheterisation rooms, laminar flow clean wards, haematopoietic stem cell transplant wards (areas), organ transplant wards, ICU, neonatal wards, haemodialysis departments (centres) and burn wards.

8.2 Monitoring requirements

8.2.1 Monitoring frequency

Hospitals shall monitor high-risk departments quarterly. For clean operating departments and other clean areas, monitoring shall be performed upon acceptance inspection of new construction and renovation, and after replacement of high-efficiency filters. In the event of a healthcare-associated infection outbreak suspected to be related to air contamination, monitoring shall be performed immediately, and testing for the relevant pathogenic microorganisms shall be carried out.

8.2.2 Monitoring methods and result determination

8.2.2.1 For clean operating departments and other clean areas, the number of rooms to be monitored each time shall be reasonably arranged according to the total number of clean rooms, ensuring that each clean room is monitored at least once per year. The monitoring methods and result determination shall comply with the standard GB 50333.

8.2.2.2 For departments that do not use cleaning technology for air purification, the monitoring methods and result determination shall comply with the standard GB 15982. The proportion of the number of rooms inspected each time

to the total number of rooms in that department shall be ⩾10%.

8.3 Precautions

When evaluating the effectiveness of chemical disinfection methods, a neutralizer validation test for air disinfectants shall be performed. The specific method shall comply with the standard GB 27948.