



Republic of the Philippines
Department of Health
HEALTH FACILITIES AND SERVICES REGULATORY BUREAU

ANNEX D1
A.O. No. 2021-0037-___

**PLANNING AND DESIGN GUIDELINES
FOR GENERAL CLINICAL LABORATORY**

I. GENERAL CONSIDERATIONS

1. **Location.** The clinical laboratory shall be situated in an area that is accessible both to clients and staff.
2. **Privacy.** The design of the clinical laboratory shall provide appropriate levels of the audible and visual privacy and dignity of the client throughout the diagnosis process, from specimen collection to the releasing of results.
3. **Conformance with Building Laws.** The clinical laboratory shall conform to all applicable local and national regulation for the planning and design, construction, renovation, maintenance and repair of its facilities.
4. **Ventilation.** Adequate ventilation with the acceptable air changes per hour, if applicable, shall be maintained for each specific area of the clinical laboratory.
5. **Spaces Required.** The clinical laboratory shall have adequate space or area provided for its various space/room requirements in order to attain the effective and efficient operation of its activities and functions.
 - 5.1 The spaces/areas of the clinical laboratory shall be zoned into the following areas, if applicable, and planned based on the functionality of the space and the activity workflow of the laboratory:
 - 5.1.1 General Administrative Services and Public Areas;
 - 5.1.2 Clinical Working Area; and
 - 5.1.3 Support Services Area.
 - 5.2 The *General Administrative and Public Areas* shall be comprised of the following spaces:
 - 5.2.1 *Business Area*, provided with:
 - 5.2.1.1 A Reception area, for information and business transactions, receiving of specimen and releasing of results;
 - 5.2.1.2 Sufficient waiting area for clients.
 - 5.2.2 *Collection Area.* There shall be a collection area/s for specimens which is located outside the clinical working area.

5.2.3. *Toilet Facilities*, may be within the premises of the facility but shall not within the clinical working area, or may be adjacent or near to the clinical laboratory.

5.2.3.1 Conveniently accessible toilet for the public.

5.2.3.2 A separate toilet for the staff.

5.3 *The Clinical Working Area*. The clinical working area shall be sufficient to accommodate its activities and allow for smooth and coordinated workflow. Areas and rooms intended for its sections shall be planned to meet the workload described in the functional program.

5.4 The *Support Services Area(s)* shall be composed of the following spaces:

5.4.1 Sufficient storage for records and supplies;

5.4.2 Waste holding area;

5.4.3 Staff Pantry;

5.4.4 Other spaces for staff such as offices, conference room, lockers and changing room (gender-sensitive) and the like, are optional.

5.5 Business area and support services areas may be optional for One Stop Shop (OSS) Facility, provided it is identified and accessible from the clinical laboratory.

5.6 Some spaces in the clinical laboratory may not be located within the clinical laboratory premises, but shall be adjacent or near the main clinical laboratory. These spaces/rooms shall be limited only to any of the following: business office, toilets for staff and/or general public, and spaces for support services areas.

5.7 Specimen collection area may not be within the main clinical laboratory, but shall have an exclusive and direct access to the main clinical laboratory and/or those equipped with pneumatic air tube transport system or equivalent specimen transport system.

5.8 The Microbiology sections for tertiary CL, if not within the clinical laboratory, shall be adjacent or directly linked to the clinical laboratory. Histopathology Section may not be within the main clinical laboratory.

6. *Functional and Planning Considerations*

6.1 The different areas of the clinical laboratory shall be functionally planned related to each other to attain efficient workflow.

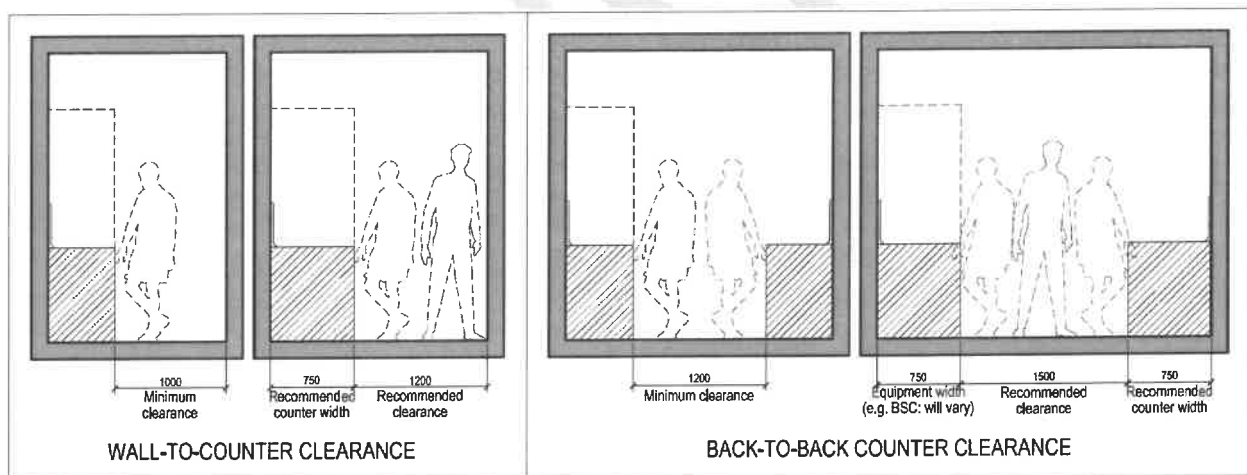
6.2 The clinical laboratory shall have space allocated for the performance of its work, and is designed to ensure the quality, safety and efficiency of the service provided to the user, and the health, safety and comfort of laboratory personnel, patients and visitors. The laboratory shall evaluate and determine the sufficiency and adequacy of the space allocate for the performance of the work to accommodate its activities and allow for smooth and coordinated work flow.

- 6.3 There shall be sufficient and appropriate storage spaces and conditions provided for laboratory specimens, documents, records, manuals, equipment, reagents, supplies, slides and tissue blocks.
- 6.4 The clinical working area shall be sufficient to accommodate its activities and allow for smooth and coordinated workflow. Areas and rooms intended for its sections shall be planned to meet the workload described in the functional program. A dedicated room or area for each sections of the laboratory shall be provided and identified inside the clinical working area.

II. SPECIFIC TECHNICAL REQUIREMENTS

7. Blood extraction area shall provide space, equipment and furniture appropriate for its activity performed. The area shall have work counter/tray, space for patient seating, and hand washing / sanitizing stations.
8. Specimen collection toilet for urine and feces may be located outside the main clinical laboratory but shall be near or adjacent to the clinical laboratory, or a designated cubicle for specimen collection in the laboratory's public toilet, or a dedicated toilet solely for specimen collection, or the same toilet for the public within the laboratory but the specimen collection protocol must be reflected in the laboratory's standard operating procedures.
9. A Pathologist's area shall be provided and shall be located adjacent to or within the clinical working area so that he/she may have easy access to clinical working area of the laboratory. It can be a separate room or a cubicle or area within the clinical working area or clinical laboratory, and its location should permit the pathologist to observe the clinical working area.
10. Entrance to clinical working area must not be directly located to high traffic areas that might cause unwanted air current drafts which may cause potential damage to equipment and possible contamination of specimen. A hand washing area (with designated dressing area is recommended) at the entry point of the clinical working area is required.
11. Each sections of the clinical laboratory should be provided with sinks. The number of sinks in the clinical working area shall not be less than the following: for primary category clinical laboratory, there shall be at least two (2) sinks (1 for the clinical microscopy and 1 for the general clinical working area); for secondary category clinical laboratory, there shall be at least three (3) sinks (1 for the clinical microscopy, 1 for the microbiology, and 1 for the general clinical working area) (; and for tertiary category clinical laboratory, there shall be at least three (3) sinks (1 for the clinical microscopy, 2 for the general clinical working area for shared sections) and additional sink/s for each room type sections/sectional separation e.g. anatomic pathology and microbiology (at least 2 sinks). Sinks in the clinical working area shall be stainless steel sink or of equivalent material with a depth of at least 8" and a gooseneck faucet.
12. Each sections of the laboratory shall be properly identified in the clinical working area. Separate rooms for both Histopathology and Microbiology sections, if provided, shall be provided.

13. Provision of toilets and other amenities for staff (e.g. lockers, lounge, pantry and changing room) shall be located outside the clinical working area to prevent contamination.
14. Biosafety Cabinets and isolation hoods shall be properly placed so that fluctuations in air supply and exhaust or the operations of equipment do not alter the performance standard of the cabinet/hood.
15. **Fire Safety.**-There shall be adequate and appropriate fire exits in the clinical laboratory. In addition, there is no more than 23 meters of travel distance to any exit door from any point of the clinical working area.
16. **Corridors.** The minimum width for corridor for clinical laboratory shall be at least but not limited to 1.20 meters or four (4) feet. Wider corridors shall be provided taking into consideration of passage of large equipment, movement of people and the activity involved.
17. **Clearances.** Adequate clearances intended for working space in the clinical working area shall be provided. Clearance for adequate working space in the clinical working area between a work counter from a wall shall be not less than one (1) meter or 3.28 feet (1.2 meters or 4 feet is recommended) and 1.2 meters or four (4) feet for a work counter to another work counter (1.5 meters or 5 feet is recommended). Other consideration shall also be given for wider clearances, such as size and type of equipment, activity involved, ergonomics, anthropometrics and allowance for passage of staff while others are working.



18. Suitable facilities for quick drenching or flushing of the eyes and body parts shall be provided within the clinical laboratory for immediate emergency use. Such unit must be within 30 meters of work access, hands-free eyewash unit with hand wash unit is preferred.
19. **Lighting.** All areas shall be well-lighted by providing appropriate luminaire with no exposed or dangling electrical wires and unwanted glare shall be avoided. Also, appropriate convenience outlets shall be provided within the facility.
20. **Ceiling Height.** The floor-to-ceiling height of the clinical working area shall be not less than 2.40 meters. The floor-to-ceiling height of rooms containing biosafety cabinet and fume hoods shall be at least 2.60 meters. For rooms containing tall and ceiling-mounted

equipment, the ceiling shall be of sufficient height in order to accommodate the equipment and/or fixtures.

21. **Plumbing.** Continuous and sufficient supply of water shall be made available at all times in both working and hand washing areas. Piping systems shall be kept concealed as possible yet should be located where they will be easily accessible for service and repairs with a minimum of disruption of normal laboratory services.
22. **Ventilation.** Adequate and appropriate artificial ventilation shall be provided in the clinical working area to attain required heating, ventilation and air conditioning (HVAC) requirements (e.g. exhaust fan, fume hood, air conditioning). Adequate exhaust fan/s shall be provided in the clinical working area and its sections as a minimum requirement, with dedicated exhaust fans for rooms in the Microbiology and Histopathology sections.

Exhaust in the clinical working area shall be directed to the outside and air from clinical working area must not be recirculate within the facility. Directional airflow in the laboratory is recommended, wherein air should move from clean to less clean areas **in general, and/or** based on the functional program of the laboratory and its sections. There should be a sufficient air exchanges in the clinical working area, depending on the use and contents of the space.

23. **Space.** Adequate area shall be provided for the people, activity, furniture, equipment and utility.

Table 1. Recommended Area Allocation in the Space Programming of Clinical Laboratories

Space	Area in square meters
GENERAL ADMINISTRATIVE AND PUBLIC AREAS	
Business Area - Waiting Area	0.65 m ² /person
Collection Area – Blood Extraction Area	4.00 m ²
Public Toilet (PWD Accessible)	3.06 m ²
Staff Toilet	1.67 m ²
CLINICAL WORKING AREA	5.02 m²/staff
<i>Recommended Gross Floor Area (GFA) of the Clinical working Area</i>	
Primary Category	15 m ² *
Secondary Category	20 m ² *
Tertiary Category	60 m ² *
<i>*Recommended GFA for non-institution-based clinical laboratories with minimum service capability. Additional area/s shall be added for additional services to be provided beyond the minimum service capability. May allocate bigger depending on the functional program (people, activity, furniture and equipment).</i>	

24. **Material Specification**

- 24.1. **Walls and partition.** All walls of the Clinical Laboratory in general shall be structurally sound, safe, and sturdy with minimum fire resistant rating as prescribed by the Fire Code of the Philippines for this type of occupancy. Wall finish shall be with impervious, smooth, less terminations, and easy to clean. Walls or partitions enclosing the clinical working area and its rooms and sections shall be constructed from floor to ceiling. Cubicle curtains and draperies if used for the clinical laboratory shall be non-combustible or flame-retardant.

- 24.2. *Flooring.* Floors in general shall be made of durable, and shall be readily cleanable and wear-resistant. Floors subject to traffic while wet (i.e. entrance porch, toilet facilities) shall have a non-slip surface. Floors in the clinical working area should be seamless and self-coving to a height of 6 inches (152.4 millimeters) towards the wall.
- 24.3. *Work counters.* Work counters shall be provided with finish that does not support bacterial growth, durable, non-porous, smooth and easy to clean, stain and dirt resistant, preferably seamless finish. Sink or lavatory, preferably stainless steel, with faucet, preferably gooseneck, with adequate supply of water shall be provided. The width of the work counter shall be at least 600mm (750mm or 30 inches is preferred). Backsplash or wainscoting may be provided in the work counter, preferably with the same material with the countertop finish or its equivalent with at least 400mm high.
- 24.4. *Windows.* Windows and openings in the clinical laboratory shall be compliant with the requirements of Rule VIII of the National Building Code of the Philippines. If operable window is utilized in the clinical working area, it should be fitted with arthropod-proof screens.
- 24.5. *Doors.* The minimum clear opening for the main door/s of the clinical laboratory and the clinical working area and exit doors shall be at least 900mm. There shall also be at least one door with a minimum width of 900mm for rooms/sections housing large instruments and equipment. No doors in the clinical working area shall be less than 800mm. The main door of the clinical laboratory and doors to the clinical working area shall have appropriate fire ratings, and preferably be self-closing.
- 24.6. Carpeting, fabrics, wood and other similar finishes shall be avoided.
25. *Additional Requirement/s.* A detailed risk assessment must be carried out first in order to determine the specific risk control measures that need to be implemented and define all other design features needed for the laboratory before the construction, repurposing or renovation of a clinical laboratory. The clinical laboratory shall provide for these additional requirements depending on the type of pathogens handled in the facility and biosafety level required based on the conducted risk assessment, in adherence with the requirements of laboratory biosafety and biosecurity.

III. REFERENCES

Relevant Laws and Standards

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- P.D. No. 856. Code on Sanitation of the Philippines. (December 23, 1975).
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