

Imam Abdulrahman Bin Faisal University  
College of Applied Medical Sciences in Jubail  
Respiratory Care Department



جامعة الإمام عبد الرحمن بن فيصل  
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY  
كلية العلوم الطبية التطبيقية بالجبيل  
College of Applied Medical Sciences in Jubail

# Respiratory Care Laboratories Policies and Guidelines Manual

This document describes the policies and guidelines conducted to run Respiratory Care laboratories.

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## Introduction

### Purpose

The core laboratories of respiratory care program were established in 2017 as Respiratory care program was officially offered by collage of applied medical sciences in Jubail under the umbrella of Imam Abdulrahman bin Faisal University.

The respiratory care laboratories including skills lab and simulation lab are mostly classified as dry laboratories (few sessions require handling placebo inhaled medications and aerosolized fluids). Both labs are well equipped with the best recent equipment and facilities in which they currently dedicated to serve learning purposes only.

This manual is developed to provide general guidelines and description of current policies followed to sustain an optimal environment for the students to achieve their learning milestones in alignment with the program's mission, vision and goals.

### Objectives

- Specify the scope of responsibilities and tasks for managing and operating respiratory care laboratories.
- Provide a safe and convenient practical workspace to achieve the best teaching and learning experiences.
- Assure general safe work practices of respiratory care laboratories users.
- Provide general guidelines for maintaining the integrity and functionality of respiratory care laboratories' equipment and medical gases system.
- State briefly the method followed to evaluate the practical session performance of both instructors and students.

## Description of Job Responsibilities

### Chairperson of Specialized Laboratories Committee

The chairperson of specialized laboratories provides oversight and management to all specialized laboratories in the college including respiratory care labs. The following list of responsibilities are assigned to the chairperson of specialized laboratories.

- Monitor safe operation and conduction of procedures and secure a safe laboratories environment for students and staff.
- Provide continuous supervision to ensure that all safety measures and precautions are being implemented by faculty members, lab instructors and students while utilizing RC laboratory facilities.
- Revise operation and usage instruction manuals for each device regularly and update them as necessary.
- Organize machine in-service training and demonstration sessions for the faculty members and lab instructors for newly purchased devices or as needed.
- Follow-up with the purchasing department at the university for any requests and regular maintenance in coordination with lab coordinator.
- Collect and approve the annual laboratories' equipment and consumable items inventory report prepared by the lab coordinator.
- Follow-up with the lab coordinator to ensure the availability of the required equipment for the next academic term.
- Ensure that all hazardous and sharp wastes are collected and disposed safely via specialized company.
- Take-part in the development plans for respiratory laboratories facilities as needed.
- Supervise the maintenance of medical gases system and ensure its functionality.
- Report any abnormal observations or non-adherent acts to the department chairperson.

## **Respiratory Care Labs Coordinator**

Respiratory laboratories coordinator performs a direct and close monitoring of the RC labs by fulfilling the following responsibilities.

- Establishing files for the laboratory's equipment and tools containing all relevant information, such as operating instructions, records of routine maintenance, and contact information for the maintenance providers.
- Establishing classification and coding system for devices and equipment and update it as necessary.
- Maintain operating devices in correct manner.
- Assure secure storage for all equipment and tools.
- Conduct an equipment inventory at the end of each academic term using the inventory form provided by the lab director.
- Raise a list of any equipment and consumable items needed to the lab director and track the status of the purchasing orders.
- Organize maintenance visits with the responsible company, when maintenance is required.
- Maintain close supervision of the maintenance and cleanliness of the laboratory and safety of its content.
- Ensure the safety and security rules are being implemented while conducting laboratory teaching sessions.

## Performance and attendance Policy

### Students Attendance and Performance

Attendance policy is implemented to track the student attendance to the laboratory teaching sessions as part of the total course attendance.

- The lab instructor is responsible to obtain the class roster generated from student information system (SIS) from the course coordinator.
- Students' attendance is recorded prior to the beginning of the lab session and should be reported to the course coordinator daily.
- The course coordinator is responsible to enter the attendance report electronically in the SIS on a daily basis.
- The course coordinator is responsible for sending warning emails for students who have reached 15% of absenteeism.
- Students who have reached 25% of total course absenteeism must be prohibited from entering the laboratory sessions and reported to the vice dean of academic affairs.
- Students' progress and performance is evaluated by either continuous assessment check lists or objective structured practical examination (OSPE) rubrics following the course specification assessment tools.

### Lab Instructor and Demonstrator Evaluation

Lab staff performance is evaluated as follows:

- Lab instructors and demonstrators' performance is evaluated annually by the department chairperson following IAU policy.
- The semestral performance evaluation of lab sessions and faculty members is done electronically by students via Estibana system on IAU website page.

## RC Laboratory Safety and Precautions

### Lab Safety Precautions policy

- White laboratory coat should be worn with closed buttons at all the times in the laboratory.
- Long hair must be tied such that it will not interfere with the equipment or reagents.
- Sandals and open style shoes do not afford proper protection and are not accepted.
- Students shouldn't wear contact lenses in the laboratory (absorb certain solvents and maybe a hazard from splashes and spills), or wear safety glasses when working with caustic or infective materials.
- Eating, drinking, storing food or beverages in the laboratory or in its refrigerator is prohibited.
- Personal protective equipment (gloves, mask, goggle, and yellow gown) should be worn inside the lab. Mask with plastic shield should be worn when handling chemicals to reduce splashing). when leaving the laboratory, it should be discarded in appropriate containers.
- Cosmetics, artificial nails/ wraps or acrylic overlays are prohibited in the laboratory.
- Practical jokes are always against rules" The laboratory is a quite area".
- All laboratory staff must ensure that the conditions of their work do not create any hazard for those working nearby.
- All students should be instructed on the location and operation of all safety equipment and facilities, such as fire blankets, fire extinguishers, first aid box, and eye wash which must be readily accessible to all staff.
- Cuts, scratches, and other lesions on the hand and exposed parts of the body should be covered with adhesive plasters.

### Hazardous Chemical Spill Incidents

Spill kit is an essential tool to assist with the clean-up, decontamination, and disposal of waste in the event of a hazardous chemical spill. It is available in each RC lab; it is checked for the expiry date regularly. Also, it is reachable to the instructor who is attending the lab. All instructors are educated on how to effectively use the chemical spill kit if any hazardous chemicals spilled.

## **Hazardous Waste Disposal**

All medical wastes are carefully handled in yellow bin bags and collected every morning to be placed in the integrated lab. Medical Hygiene Services Co. Ltd picks up the medical waste every Wednesday for professional disposal. Additionally, when sharp wastes reached the maximum line in the containers, the company collects the sharp containers and replace it with empty and sanitized ones.

## **Fire Incidents**

- RC Labs follows CAMS-J evacuation plan once code red is announced.
- All staff and students are regularly oriented to fire containment steps and the evacuation assembly points in the campus.
- In case of fire incident in the lab, the present individual at the site must follow the fire containment steps which consists of the RACE and PASS procedures.



## RC Laboratories Using Policies

### Lab Using Instructions

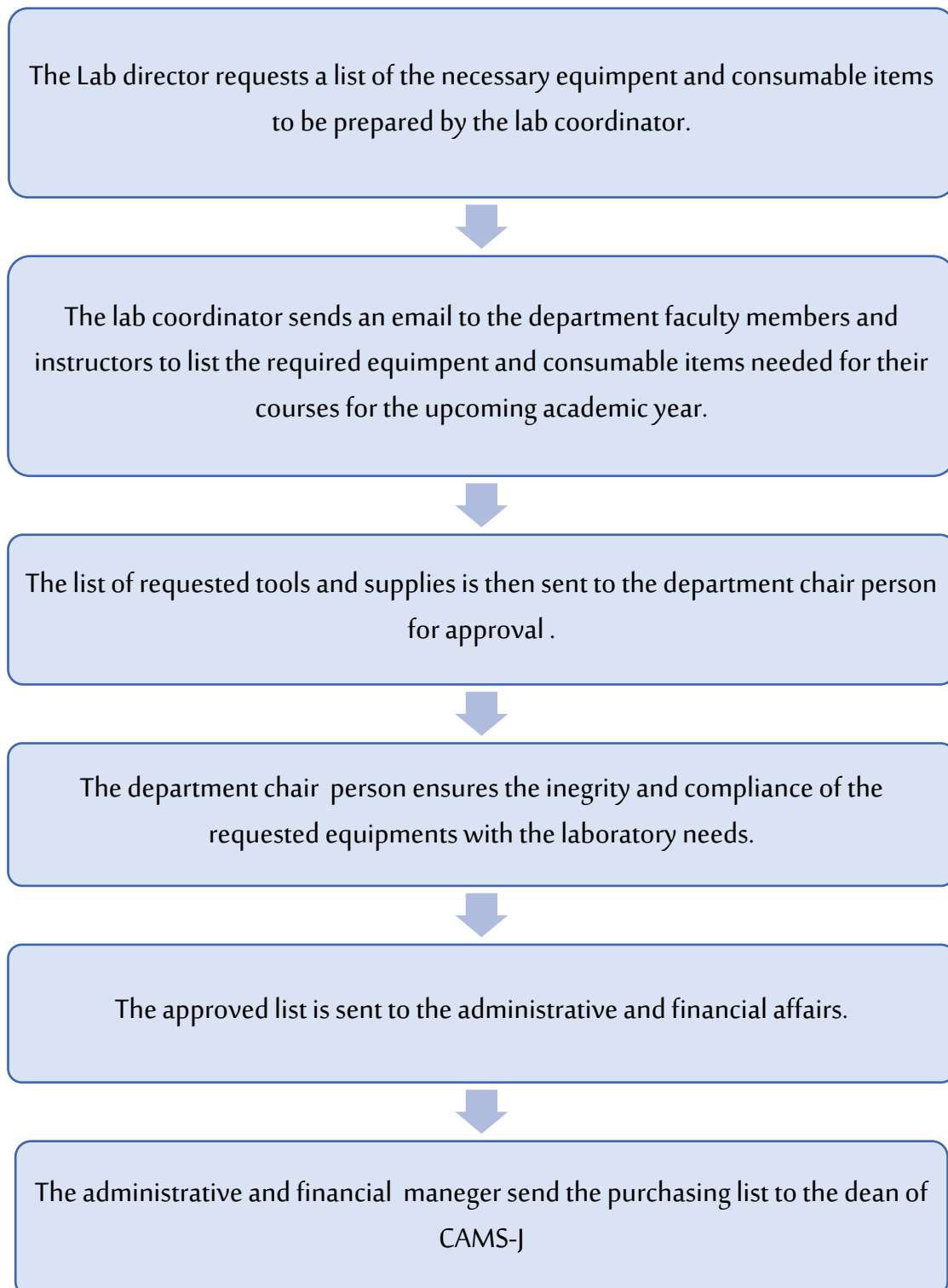
- The laboratory must be kept clean, neat, and free of materials that are not pertinent to the work.
- Work surfaces are decontaminated at least once a day and after each spill of viable materials.
- All laboratory material must be assumed to be infectious for a pathogen.
- All laboratory staff must change gloves and wash hands when finished processing simulated patient procedure.
- Laboratory staff should wash their hands after completing activities and handling infectious materials and should remove protective and clothing before leaving the area and dispose in an appropriate container.
- Laboratory bench work must be clean properly using special disinfectant before and after any procedure to prevent contamination.
- Laboratory work surfaces should be decontaminated with an appropriate germicide after spill of any biohazard materials.
- Wear protective clothing (PPE); disposable yellow gown, gloves, mask, and eye protection.
- All laboratory equipment must be handles correctly and returned back to its place after use.

## Borrowing Policy

CAMS-J faculty members, staff must use borrowing materials form and submit it to the lab coordinator in order to borrow supplies from one lab to another inside the institution or from outside the campus. Borrowing equipment can be for community service or educational purposes. This form helps the lab coordinator to keep track of all the borrowed equipment. Moreover, the items will be inspected to determine their condition once returned.

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<b>استعارة مواد – Borrowing Materials</b>						
Applicant data أولاً: بيانات مقدمة المطلب						
الاسم Name		التوقيع Signature		رقم الجوال Mobile Number		
Date التاريخ		Date التاريخ		Date التاريخ		
ثانياً: تفاصيل التصريح						
<input type="checkbox"/> حفل ceremony <input type="checkbox"/> عرض show <input type="checkbox"/> مناقشة debate <input type="checkbox"/> صيانة maintenance <input type="checkbox"/> محاضرة lecture <input type="checkbox"/> معرض exhibition <input type="checkbox"/> توريد supply <input type="checkbox"/> أخرى others		Reasons الأسباب		<input type="checkbox"/> إدخال Enter <input type="checkbox"/> إخراج Taking out Type of permit نوع التصريح		
<input type="checkbox"/> قبل 05:00 مساءً <input type="checkbox"/> بعد 05:00 مساءً Before 05:00 pm After 05:00 pm		Time الوقت		Date التاريخ		
<input type="checkbox"/> في حال إخراج الصنف التاريخ المتوقع لإرجاعه Expected date of returning the item		<input type="checkbox"/> هل يوجد جهات خارجية تقوم بنقل الأصناف أو المستلزمات؟ Is there any external carrier to transfer the items		<input type="checkbox"/> إذا كانت الإجابة بنعم، حدد: If yes, specify or select		
<input type="checkbox"/> نعم Yes <input type="checkbox"/> لا No		<input type="checkbox"/> نعم Yes <input type="checkbox"/> لا No		اسم العبة الناقلة (خارج الكلية) Name of Carrier		
ملاحظات Notes	Item Condition حالة الصنف		الكمية Quantity	الوحدة Unit	رقم الصنف Item Code	اسم الصنف ووصفه Item Name and description
	الإعادة Retuning	الاستعارة Borrowing				
	متضرور Damaged	سليم Good	جديد New			
من						
Borrower اسم المستلم			Lender اسم المُتَّيم			
Signature التوقيع			Signature التوقيع			
Date التاريخ			Date التاريخ			
Lender اسم المُستلم			Borrower اسم المُتَّيم			
Signature التوقيع			Signature التوقيع			
Date التاريخ			Date التاريخ			
تم معاينة الأصناف المذكورة أعلاه والتأكد من سلامتها وتحديد الصنف لكل منها بحضور كل من:						
Date التاريخ	Signature التوقيع	Name الاسم	الإعادة Returning	Date التاريخ	Signature التوقيع	الإسم Name
			موظفة أمن Security			
*ملاحظة: استخدام النموذج موظفي الكلية وأعضاء هيئة التدريس فقط						
*Only Staff and Faculty are authorized to use this form						
CAMSJ-AFA-001						
Damman 31441 P.O.Box 1982 ص. ب. info@iau.edu.sa			الرقم: / /			
Fax. +966 13 333 0333 Tel. +966 13 333 0000 www.iau.edu.sa			التاريخ: / /			
			المستحقات:			

## Purchasing Request Procedure



## Maintenance and Quality Control Policies

### Pre-use Quality Check

Prior to lab sessions, the lab instructor is responsible for warning-up the devices to be used and performing the pre-use check procedures as needed.

#### **Mechanical Ventilators:**

Before using any ventilator, a short self-test (SST) is conducted to ensure that all components are operating properly.

#### **Pulmonary Function Testing System:**

Before operating the Pulmonary Function Testing system, three calibration tests are performed: body box, volume, and gas calibration.

#### **ABL 90 (Blood Gas Machine):**

A built-in quality control measurements is scheduled to be done every 8 hours automatically. The QC cartridge has a 30-day expiry period after installation. Removal and installation of QC internal cartridge is done by the biomedical engineer assigned for the device maintenance.

## Planned Preventive and Malfunctions Maintenance

All respiratory care laboratories' equipment are regularly checked for functionality and integrity through planned preventive maintenance (PPM) and quality check procedures. These are done by the responsible supplier companies with compliance to manufacturer's policies provided. If any device malfunctions occur, the lab coordinator should contact the supplier company for urgent repair. Both PPM and corrective maintenance must be documented using the following attached forms.

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**Equipment Corrective Action**

**Lab Name**

**Lab Number**

<b>Equipment Name</b>		<b>Serial / Label Number</b>	
<b>Manufacturer</b>		<b>Date of purchase</b>	
<b>Manufacturer's Contact Number</b>		<b>In charge of the Lab.</b>	

Date	Description of device failure	Action	Corrective Action	Name /Signature

CAMSJ-AFA -LAB 001

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**Equipment Maintenance Log**

**Lab Name**

**Lab Number**

<b>Equipment Name</b>		<b>Serial / Label Number</b>	
<b>Manufacturer</b>		<b>Date of purchase</b>	
<b>Manufacturer's Contact Number</b>		<b>In charge of the Lab.</b>	

Date	Maintenance required from the manufactured	Pass	failed	Action	Name /Signature	Next visit date

CAMSJ-AFA -LAB 002

## Maintenance Companies Contact Information

The contact information for maintenance personnel are listed in the table below.

NO.	Name of Device	Frequency of PPM	Supplier Companies	Contact numbers
1	Servo - U ventilator	Annually	Gulf Medical	0551224844
2	PB 980 ventilator	Annually	Medtronic	0543551056
3	VN 500 ventilator	Annually	salehiya medical	0559415107
4	Evita XL ventilator	Annually	IAU Maintenance	0507325329
5	Oxylog 3000 plus transport ventilator	Annually	salehiya medical	0559415107
6	V60 NIV V	Annually	Alam Altaawin	0540711358
7	Globe Trotter TI500	Annually	salehiya medical	0559415107
8	Incubator	Annually	salehiya medical	0559415107
9	Advanced PFT system	Every 6 months	Medi Serv	0503854936
10	Natus SleepWorks	Annually	Alam Altaawin	0540711358
11	ABL90 FLEX	Annually	Alsahiya	0550804546

## Medical Gas System Policies

Following these guidelines will help to ensure everyone's safety in the lab while using medical gases.

- Appropriate personal protective and manual handling equipment must be used as the procedure require.
- Any observation of damage must be reported immediately to the lab coordinator.
- Every gas cylinder needs to be fastened securely in appropriate size trolley to prevent falling and stored away from direct sunlight.
- The gas cylinder must be closed after each use.
- The cylinder cap must be in place, when transporting or storing H cylinders.
- During transporting, cylinders must be transported securely in specialized trollies.
- All cylinder gas content must be used within the three-year fill/refill timescale specified by the gas supplier.
- Local gases system pressure alarms are designed to indicate when system pressure(s) is/are outside the normal operating range. Excessively high or low pressures may cause medical equipment to malfunction. Therefore, must be monitored regularly by the lab coordinator and reported to the director of laboratories.
- The lab coordinator is responsible to check the cylinders pressure readings and the local monitor for the gas supply system regularly.
- When gas refill is required, the lab coordinator submits a request to the director of laboratories to order gases refill from the assigned company.