 <p>DR. PABLO O. TORRE MEMORIAL HOSPITAL</p>	Document Code:	DPOTMH-E-60-P07-S02
	Effective Date:	08-30-2022
	Document Type:	Standard Operating Procedure
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	Department/Section:	Molecular Laboratory
	Document Title:	EQUIPMENT REPAIR PROCESS

B.S. Aquino Drive,
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6100

PURPOSE:

1. To establish written procedures for machine specific equipment use, maintenance and repair and medical equipment are safe and regularly serviced and maintained.
2. This procedure describes how medical equipment require maintenance, calibration and planned servicing or repair.

SCOPE:

Applies to all Molecular Laboratory Personnel of Dr. Pablo O. Torre Memorial Hospital.


PERSON RESPONSIBLE:

All Molecular Biology Laboratory Personnel, Biomedical Engineer, Technician

GENERAL GUIDELINES:

A. Equipment Maintenance and Repair

1. All new instruments come with a minimum of one year's parts and labor warranty. After this initial period, a service contract for preventative maintenance is set up. Visits are scheduled and recorded to ensure that equipment is maintained in a safe working order.
2. Electrical safety and emergency stop devices are scheduled to be checked and recorded if not included as part of the contracted maintenance.
3. Procedures should contain information and any other necessary risk and risk management information to ensure the safe handling and disposal of any chemicals, radioactive and biological materials by staff authorized to carry out the procedure.
4. Any item of equipment that suffers damage or that is shown by calibration or otherwise to be defective and unfit for use should be properly documented.

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B. Repairs of Equipment

1. Molecular Laboratory personnel should not call the vendor. MMD and /or Purchasing Department will coordinate the repair with the vendor and will provide the department with necessary instructions.
2. To request repairs or service for any equipment, contact Supplier's Engineering Team (regardless of whether warranties or maintenance contracts apply)

C. Repair of Other Equipment Where Warranties and Service Contracts Do Not Apply.


1. If the equipment is not covered by a warranty or maintenance contract, the department may elect to have the repairs performed by an outside vendor/ manufacturer or by the Maintenance and Engineering Department.
2. If the department elects to have the repairs performed by an outside vendor or manufacturer, the department should prepare a requisition.
3. Procurement of Equipment, Supplies, and Services and enter the requisition electronically. The following information **MUST** be indicated on the requisition:
 - 3.1. Name, make, model, and serial number of each item to be repaired
 - 3.2. Nature of the repair
 - 3.3. An estimated amount for the repair must be entered.
 - 3.4. Any additional comments may be conveyed in text.
4. If the department has an emergency during normal working hours where a repair must be made immediately by an outside vendor or manufacturer, the department must prepare a requisition and obtain the proper signatures.

D. Repair of Equipment Covered by Service Contract

1. Requests for service are to be directed by telephone or email to the Purchasing Department, who will coordinate the repair with the vendor.
2. The Biomedical Engineering Team will coordinate with the supplier for the status of repair.

E. Repair of Equipment Within Warranty Period


1. Requests for service are to be directed by telephone or email to the Biomedical Team.

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2. The department should provide the following information:
 - 2.1. Name of the vendor from which the item was purchased.
 - 2.2. Purchase order number.
 - 2.3. Date received.
 - 2.4. Name, make, model, and serial number of each item to be repaired.
3. Purchasing Department will contact the vendor/ complete the material return form, make arrangements for the repair, and advise the department and the Warehouse of necessary instructions.
4. Requests for Repair/ Maintenance/ Service on Holidays and Weekends:
 - 4.1. If an emergency arises that requires service or repair of equipment during a holiday break or on a weekend, the department may contact a service representative prior to notifying Purchasing Department.
5. The Purchasing Manager should be notified immediately upon return to department. Purchasing Department will advise the department of any further instructions

PROCEDURE:

1. Communicate the breakdown to the Biomedical Engineering department.
2. The Biomedical Engineer shall depute the technician to attend to the breakdown.
3. While carrying out the breakdown maintenance the following steps shall be followed:
 - 3.1. Switch the power of the supply and discuss the incidence of breakdown with the operator to understand the details.
 - 3.2. Carefully check the machine and check the cause of the breakdown.
 - 3.3. After determining the cause of the breakdown, if parts are to be dismantled, keep the dismantled parts it shall be place properly in a tray and clean them thoroughly.
 - 3.4. After the repair, assemble the parts, check the assemblies for smooth operation and then assemble on the machine.
 - 3.5. Lubricate the parts whenever lubrication is required.


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- 3.6. After satisfactory repair of the breakdown, show the performance trial to the staff on duty and have the working permit signed as proof that a repair was done **and it should be documented.**
4. Calibration, validation and equipment verification shall then be performed so as to validate that the equipment is in good working condition.
5. A Service report shall be given to the Staff-in-charge so as acknowledge that the equipment was repaired and is in good condition.
6. The equipment is ready to process and run different types of laboratory examinations.


REFERENCES:

1. S Walia, S Walia, Director of Clinical Services: Eye Unit, PCEA Kikuyu Hospital, PO Box 45-00902, Kikuyu, Kenya. Email: gro.latipsohuyukikaecp@eyescd.
2. Jane Huria, Instrument Repair Technician, Eye Unit, PCEA Kikuyu Hospital.
3. Ismael Cordero, Senior Clinical Engineer, ORBIS International, 520 8th Ave, 11th Floor, New York, NY 10018, USA.
4. Quintela Varajao J.E., Cruz-Cunha M.M., Putnik G.D., Trigo A., Eds., 2010, Enterprise information systems, Springer, Berlin. [2] Cruz Cunha M.M, Ed. 2009, Social, managerial and organisational dimension of enterprise information systems, IGI Global, Business Sci. Ref., Hershey.
5. Sergushicheva M.A., Shvecov A. N. Design of applied multy-agent systems with using of DISIT [Proektirovanie prikladnyh mul'tiagentnyh sistem s ispol'zovaniem paketa DISIT]// Informacionnye tehnologii, 2009. №8, pp. 54-60. [4] Kizim A.V., Chikov E.V., Melnik V.Yu., Kamaev V.A.
6. The program-information support of equipment maintenance and repair with taking stakeholders interest into consideration [Programmno-informacionnaya podderjka tehničeskogo obslujivaniya i remonta oborudovaniya s uchetom interesov sub`ektov processa] // Informatizacya i svyaz. 2011. № 3. – pp. 57-59. [5] Denisov M.V., Kizim A.V., Matokhina A.V., Sadovnikova N.P. Repair and maintenance organization with the use of ontologies and multi-agent systems on

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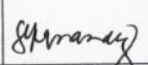
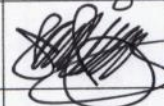
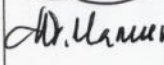
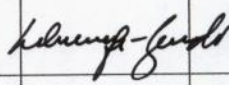

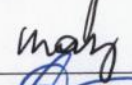

the road sector example // World Applied Sciences Journal, 2013. - 24 (24), pp. 31-36.


7. Kizim A.V., Kravets A.D., Kravets A.G. Generation of intelligent agents to support tasks of maintenance and repair [Generacija intelektual'nyh agentov dlja zadach podderzhki tehničeskogo obsluzhivaniya i remonta] // IzvestiaTPU, 2012 - pp. 131-134.
8. Denisov M.V., Kamaev V.A., Kizim A. V. Organization of the repair and maintenance in road sector with ontologies and multi-agent systems/ // Original Research Article Procedia Technology, Volume 9, 2013, pp. 819-825. [8] Shurygin A. N. Simulation modeling of maintenance service. - 2009

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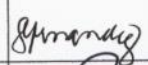

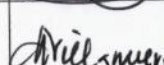
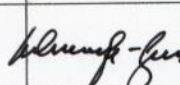


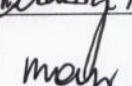

	Name/Title	Signature	Date
Prepared by:	JELYN L. FERNANDEZ, RMT Section Head, Microbiology and Clinical Microscopy		09/01/2022
Verified:	DAVID G. PEDROZA, MD Associate Pathologist		9/2/22
	MONICA B. VILLANUEVA, RN, RMT, PhD Laboratory Director		9-2-2022
	MELANIE ROSE B. ZERRUDO, MD, FPSP Chair, Department of Pathology		9-2-2022
Reviewed by:	DENNIS C. ESCALONA, MN, FPCHA, FPSQua Quality Assurance Supervisor		09-02-2022
Recommending Approval:	ROSARIO D. ABARING, MN, MBA-HA, PhD, FPCHA Ancillary Services Division Officer		09-02-2022
	MA. ANTONIA S. GENSOLI, MD, FPPS, FPCHA Vice President – Chief Medical Officer		9-14-22
Approved:	GENESIS GOLDI D. GOLINGAN President and CEO		9/22/22

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KEY TASKS	PERSON RESPONSIBLE
1. Communicates the breakdown to the Biomedical Engineering department	Molecular Laboratory personnel
2. Deputes the technician to attend to the breakdown	Biomedical Engineer
3. Performs the repair procedures	Biomedical Engineer/ Technician
4. Shows the performance trial to the staff on duty and have the working permit signed as proof that a repair was done	
5. Performs calibration, validation and equipment verification to validate that the equipment is in good working condition	
6. Documents the procedures done on the equipment	
7. Gives the service report to the staff in charge	

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APPROVAL:

	Name/Title	Signature	Date
Prepared by:	JELYN L. FERNANDEZ, RMT Section Head, Microbiology and Clinical Microscopy		09/01/2022
Verified:	DAVID G. PEDROZA, MD Associate Pathologist		9/2/2022
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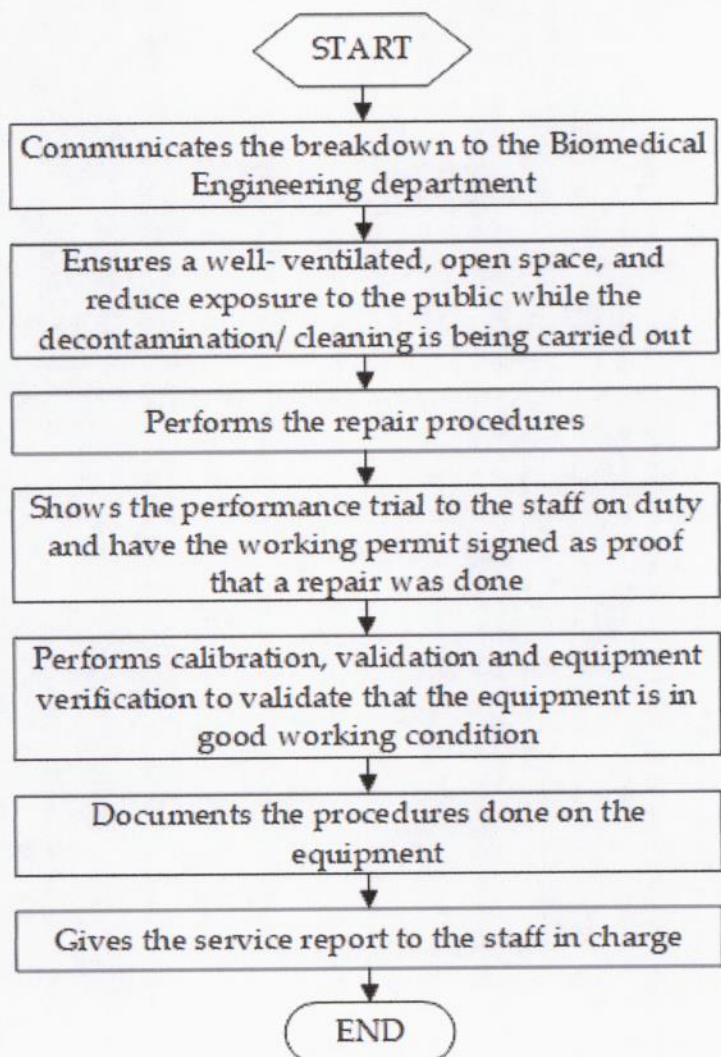



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FLOWCHART



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APPROVAL:

	Name/Title	Signature	Date
Prepared by:	JELYN L. FERNANDEZ, RMT Section Head, Microbiology and Clinical Microscopy	<i>J. Fernandez</i>	09/01/2022
Verified:	DAVID G. PEDROZA, MD Associate Pathologist	<i>[Signature]</i>	01/2/2022
	MONICA B. VILLANUEVA, RN, RMT, PhD Laboratory Director	<i>[Signature]</i>	9-2-2022
	MELANIE ROSE B. ZERRUDO, MD, FPSP Chair, Department of Pathology	<i>[Signature]</i>	9-2-2022
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Approved:	GENESIS GOLDI D. GOLINGAN President and CEO	<i>[Signature]</i>	9/22/22