



Application of Risk Assessment to Equipment Purchase – Experience of a Laboratory

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Aim

We showcase how risk assessment is conducted to assist the Cytogenetics Laboratory in the purchase of a washer used for washing tissue culture wares.

Introduction

Considerations for purchase of equipment :

- Functionality of equipment ✓
- Cost ✓
- Infrastructure requirements ✗
- Safety requirements ✗



Reworks and cost to mitigate safety and infrastructure concerns



Solution : Risk assessment throughout the purchase process

Results

1) Before sourcing, hazards identified :

- electrical hazard (13 Amp socket)
- environmental hazard (piping for discharge of water and water supply)
- physical hazard (decommissioning and disposal of old unit)

ACTIVITY-BASED EHS RISK ASSESSMENT FORM													
Company: KK Women's and Children's Hospital				RA Team members: Peh Guat Lian, Principal Medical Technologist									
Process/Location: Pre-assessment for installation of washer				RA Team members: Rachel Phua, Senior Medical Technologist									
Approved by: Dr Nancy Tee, HOD, Department of Pathology and Laboratory Medicine				Yon Hui Yi, Medical Technologist									
Date: 27 July 2015				24 July 2015									
Effective Date:				Next Review Date:									
1. Hazard Identification			2. Risk Evaluation				3. Risk Control						
1a	1b	1c	1d	2a	2b	2c	2d	2e	3a	3b	3c	3d	3e
No	Work Activity	Work Type (NR/NR)	Aspect / Hazard	Potential Risk / Impact	Existing Impact/ Risk Control (if any)	Severity	Likelihood	Risk Level	Additional Risk Control	Severity	Likelihood	Risk Level	Action Officer, Designation & Follow-up date
1	Preparation for purchase of washer.	NR	Electrical hazard with high voltage socket	Death by electric shock	Ensure that existing electrical plug for 410V/440V, 80AMP is stated in the tender specification.	3	1	3	No	Nil	Nil	Nil	Nil
		NR	Physical hazard – slip and fall due to water flooding from ill-fitting between new pipes to existing old fixtures.	Temporary disability – to whole body	Ensure that vendor conduct a site assessment to determine if new washer can fit to existing pipe fixtures.	3	1	3	No	Nil	Nil	Nil	Nil
		NR	Water usage	Environmental aspect : water depletion	Water consumption by equipment is taken into consideration in	2	1	2	No	Nil	Nil	Nil	Nil

* R: Routine, NR: Non-routine **N: Normal, A: Abnormal, E: Emergency (Only applicable for environmental aspect / hazard)

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Figure 1 (top) : Risk assessment conducted by laboratory staff right from the beginning of the procurement process. This helps the laboratory to determine what are the factors to look out for that will mitigate the infrastructure and safety requirements when buying a medical glassware washer.



Figure 2 (left to right) : Hazards that were identified included need for a 13 Amp electrical socket, drainage pipes, water source and decommissioning, draining and disposal of existing unit.

2) During sourcing, the laboratory enlisted help from specialist department to take above hazards into consideration when drafting specifications.

Environmental aspects such as water discharge, electrical and water consumption are also factors that determine which units are considered for purchase.

3) During the evaluation phase, vendors were engaged in discussion to ensure drainage pipes can be reused fully or partially.

4) For delivery, vendor submitted a risk assessment comprising of activities such as safe delivery of the new unit, installation of new washer and decommissioning and disposal of existing old washer.

ACTIVITY-BASED RISK ASSESSMENT			INVENTORY OF WORK ACTIVITIES FORM	
Company: Practical Mediscience Pte Ltd				
No.	Process/Location	Work Activities		
1.	Medical Lab Equipment transportation to designation location	1.1	Delivery of equipment using company vehicle from point of origin to point of	
		1.2	Manual Handling loading/unloading equipment from vehicle to client premises	
		1.3	Usage of trolley / pallet jack	
2.	Deinstallation, Supply and Installation of Medical Lab Equipment - Client premises	2.1	Deinstallation, Supply and Installation of Medical Lab Equipment at client premises	
		2.2	Deinstalling, Installing or Connecting to power sources	
		2.3	Deinstalling, Installing of water source	
		2.4	Working with hand tools	
		2.5	Movement of personnel at client's premises	
3.	Commissioning, Maintenance and Servicing of Medical Lab Equipment at client premises	3.1	Performing equipment commissioning, preventive maintenance or service repair	
		3.2	Removing or Connecting to power sources	
		3.3	Working with hand tools	
		3.4	Movement of personnel at client's premises	

Figure 3 : Risk assessment submitted by vendor for the work to be conducted for safe delivery and installation of the new washer.

5) A route was planned and communicated to all users of the laboratory addressing the physical hazard of knocking and injuring surrounding other staff.

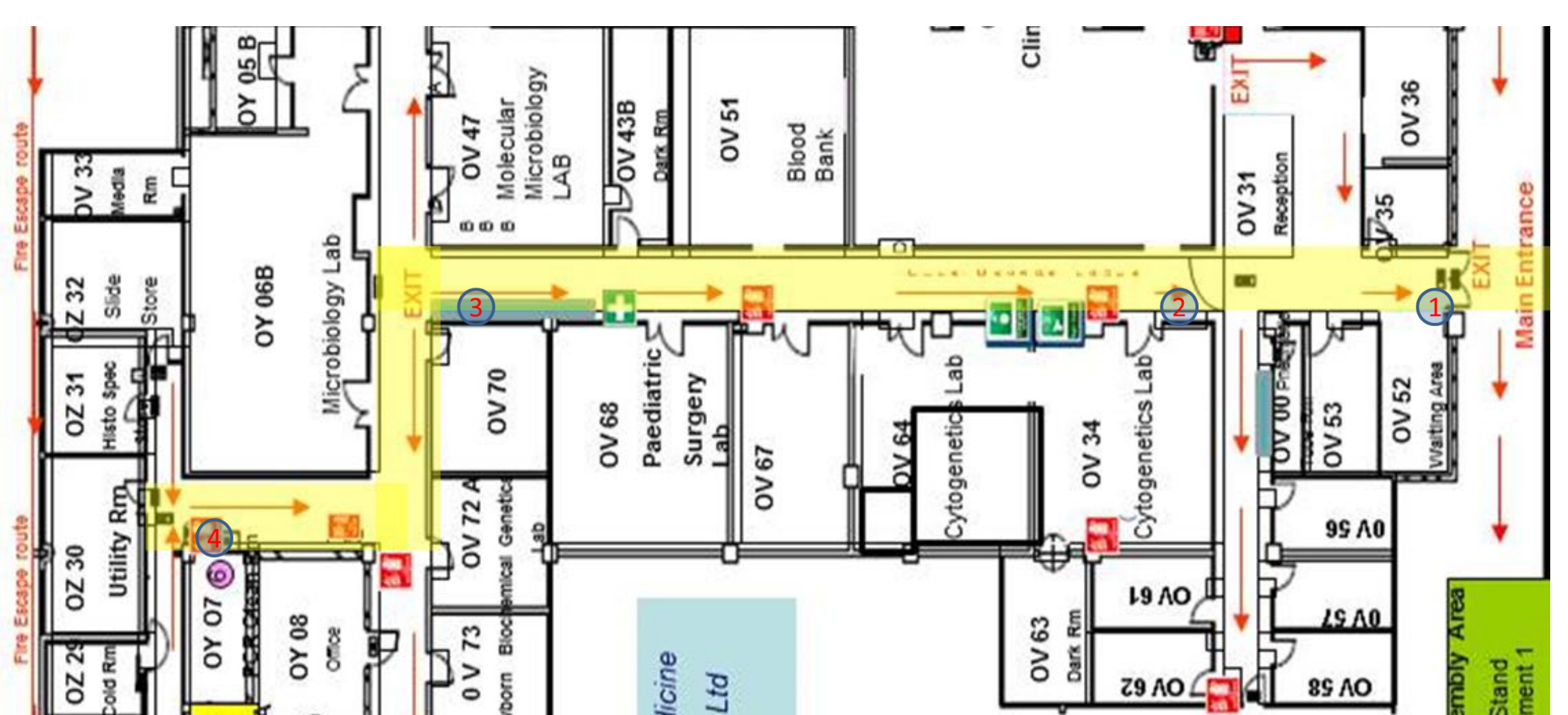


Figure 4 : Route highlighted in yellow is used for the transportation of new washer and removal of the old decommissioned washer. Measurements of the (1) main entrance, (2) door into lab, (3) walkway and (4) door to utility room were provided to the vendor for their planning of movement of the new washer through the department. This map was also communicated to the department before the day of commissioning to ensure the safety of staff during the process.

6) During the post-delivery stage, training was provided for staff operating and maintaining the washer.

Conclusion

Conducting risk assessments at the early stages of purchase helped the laboratory to identify hazards and factors that are included to the specifications for equipment. It also brought together the various stakeholders who worked together to ensure that identified risks are mitigated. Risk assessment has helped the team to complete the purchase process smoothly.