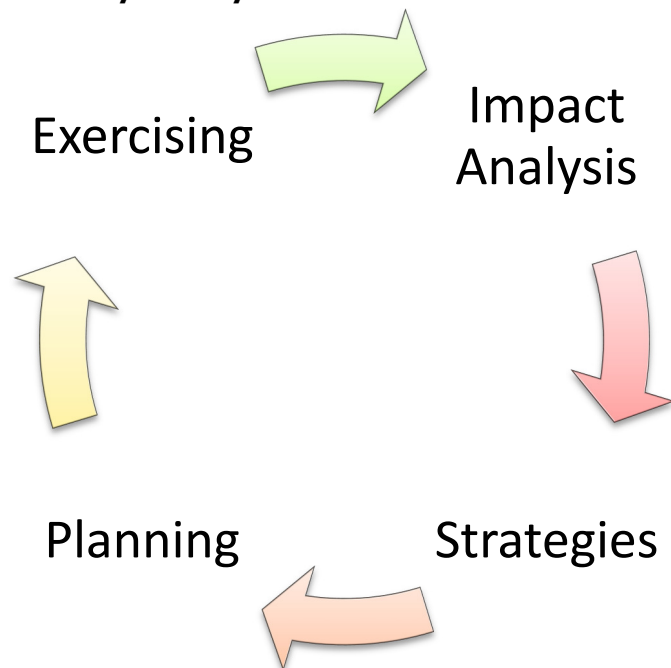


Guidance Note 2 – Impact Analysis

Introduction

Before forming plans, it is helpful to find out what the organisation needs to continue operations. The process of impact analysis can be used to determine the critical activities and dependencies of each research programme, and therefore of a unit or centre. Once the activities and dependencies have been established, then plans can be put in place to prevent disruption, respond to disruption and recover operations in a timely fashion.

The Research Continuity Life-Cycle



During an impact analysis, risks to MRC research and potential impacts should be identified and quantified as far as is reasonably practicable. This analysis should also identify critical activities and key resources upon which such activities depend. The results should be analysed, and some recovery priorities established, to enable post-incident recovery planning to be complete effectively.

Key Steps of Impact Analysis

Impact analysis should achieve the following:

- A list of key research programmes and operational functions which would have great impact on the unit if disrupted – i.e. Critical Activities
- The maximum length of time that a disruption can be tolerated without threatening the unit (Maximum Tolerable Period of Disruption, MTPD)
- The point in time that each programme/function should be resumed after disruption (Recovery Time Objective, RTO), accounting for the MTPD and including a margin of error.
- The resources needed to maintain each critical activity (People, Premises, Technology, Information, Supplies).

Going through these four points for each department or function, and for each research team will provide a mini-impact analysis that can contribute to the unit plan. An example sheet for a mini-impact analysis (i.e. for a single department or function) can be found in Appendices 1 & 2. An example impact analysis sheet for a unit can be found in Appendix 3.

Risk Assessment

A risk assessment for continuity and resilience should be similar to any other risk assessment, i.e. a semi-quantitative evaluation of likelihood and impact of anything that can cause disruption to a critical activity, following from the impact analysis (e.g. Appendix 3).

Typical risks may include:

- Loss of a single resource
- Loss of multiple resources
- Risk of specific scenarios that cause resource loss, e.g. transport disruption, denial of access

The risk assessment should be completed according to the flow-chart in Figure 1:

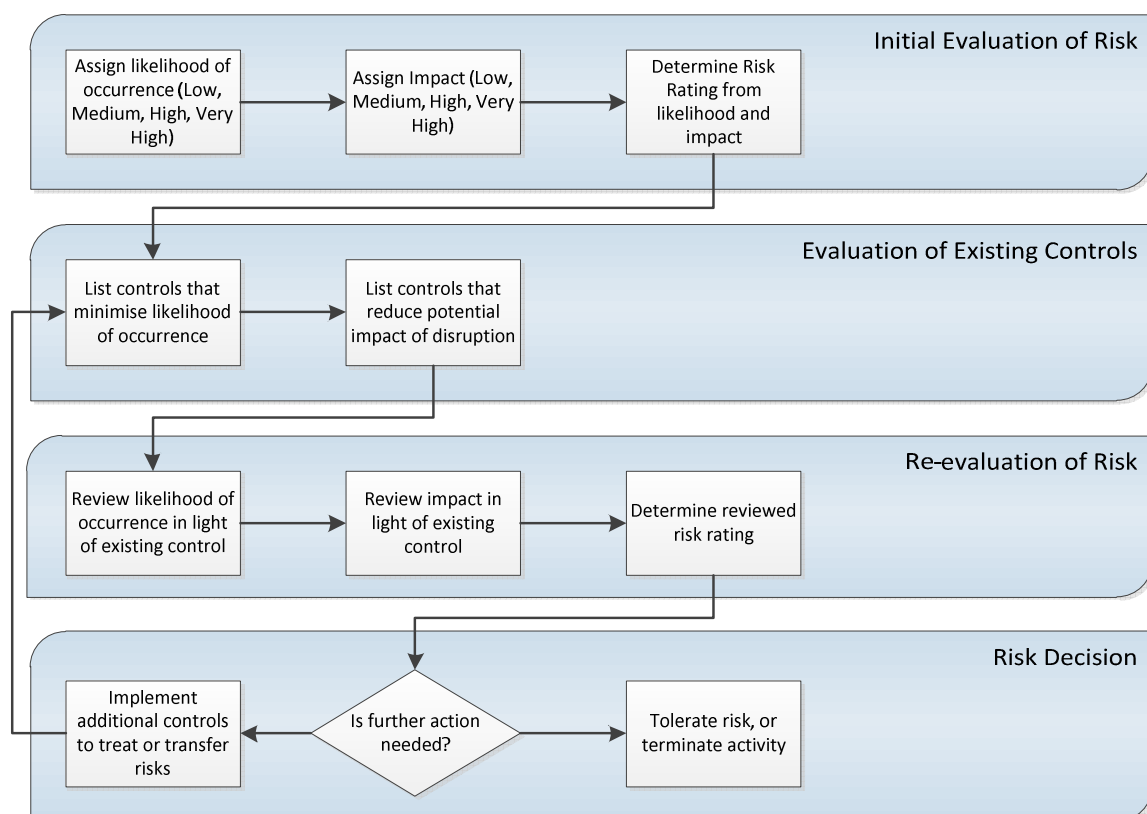


Figure 1: Risk assessment process for research continuity

Generic strategies can be put in place to minimise disruption to, and to facilitate recovery of, key resources upon which critical activities depend. Examples are given in the table below.

Example continuity strategies

Resource Type	Generic Planning Strategy	How this helps in case of disruption
People	Succession Planning, cross/multi-skilling or job sharing	There are other persons within the organisation that have the key skills of the key role, who can perform the role in case of disruption
	Documentation of processes, knowledge management	Other persons with similar skill sets can use documented processes or knowledge to minimise down-time in case of disruption to a role
	Third party support, e.g. pre-selecting temp agencies and preferred contractors	There may be available staff in case of disruption who already have the security clearance and knowledge of the organisation to assist in case of disruption
Premises	Agreements with universities or other MRC units	Specialist space may be available in case of disruption
	Agreement with office provider (e.g. Regus)	Non-specialist space may be available in case of disruption
	Home and remote working (e.g. PC, Internet, VPN)	Staff can work from home in case of disruption
Technology	Agreements with universities or other MRC units	Specialist equipment may be available in case of disruption
	Procurement of technology includes maintenance/support and purchase of split capacity (e.g. incinerator, autoclave)	Removes single points of failure, and reduces the risk (likelihood and severity) of failure
	Retaining older equipment stock for a period	Ensures spare parts and emergency replacements are available
Information	Data back-up and recovery planning, redundancy and separacy of networks	Ensures that information system failure has minimal consequence
	Records management and archiving processes	Ensures important documents are duplicated, with copies held in fire-proof storage or off-site
Supplies/Suppliers	Identify alternative/short-order suppliers	Respond quickly to supply disruption
	Agreement in place with suppliers includes their business continuity planning	Minimises likelihood of disruption
	Stockpiling on-site or at alternative location	Provides a buffer against supplier disruption

Appendix 1 – Example analysis overview

1a – Laboratory operation

Research Activity	Resource dependencies	Impact
e.g. Bench work Microscopy Tissue Culture Waste disposal	People (e.g. lab technicians, researchers) Premises & location (e.g. animal facility, CL2 lab, hot lab) Technology (e.g. PC/Mac, lab equipment) Information (e.g. journal access) Supplies (e.g. lab consumables, reagents)	Maximum tolerable disruption (e.g. 25% of staff, specific piece of equipment, loss of utilities) Maximum Period of Tolerable Disruption (e.g. 2 days without researchers, 30 minutes without email) Maximum disruption cost (e.g. £100k) Who is affected if service is disrupted

1a – Office-based operation

Activity	Resource dependencies	Impact
e.g. Security HR Finance Glasswashing Goods-in Waste disposal Health & Safety	People (e.g. administrators, subject-matter experts) Premises (e.g. office with 4 desks) Technology (e.g. PC/Mac, building management system) Information (e.g. journal access) Supplies (e.g. paper)	Maximum disruption (e.g. 25% of staff, specific piece of equipment, loss of utilities) Maximum Period of Tolerable Disruption (e.g. 2 days without staff, 30 minutes without email) Maximum disruption cost (e.g. £100k)

Appendix 2 – Example Impact Note Sheet

This sheet can be used when interviewing key people within an MRC Establishment to understand the critical activities upon which research programmes depend. This method can help to identify maximum period of tolerable disruption (MPTD) and RTO (Recovery Time Objective).

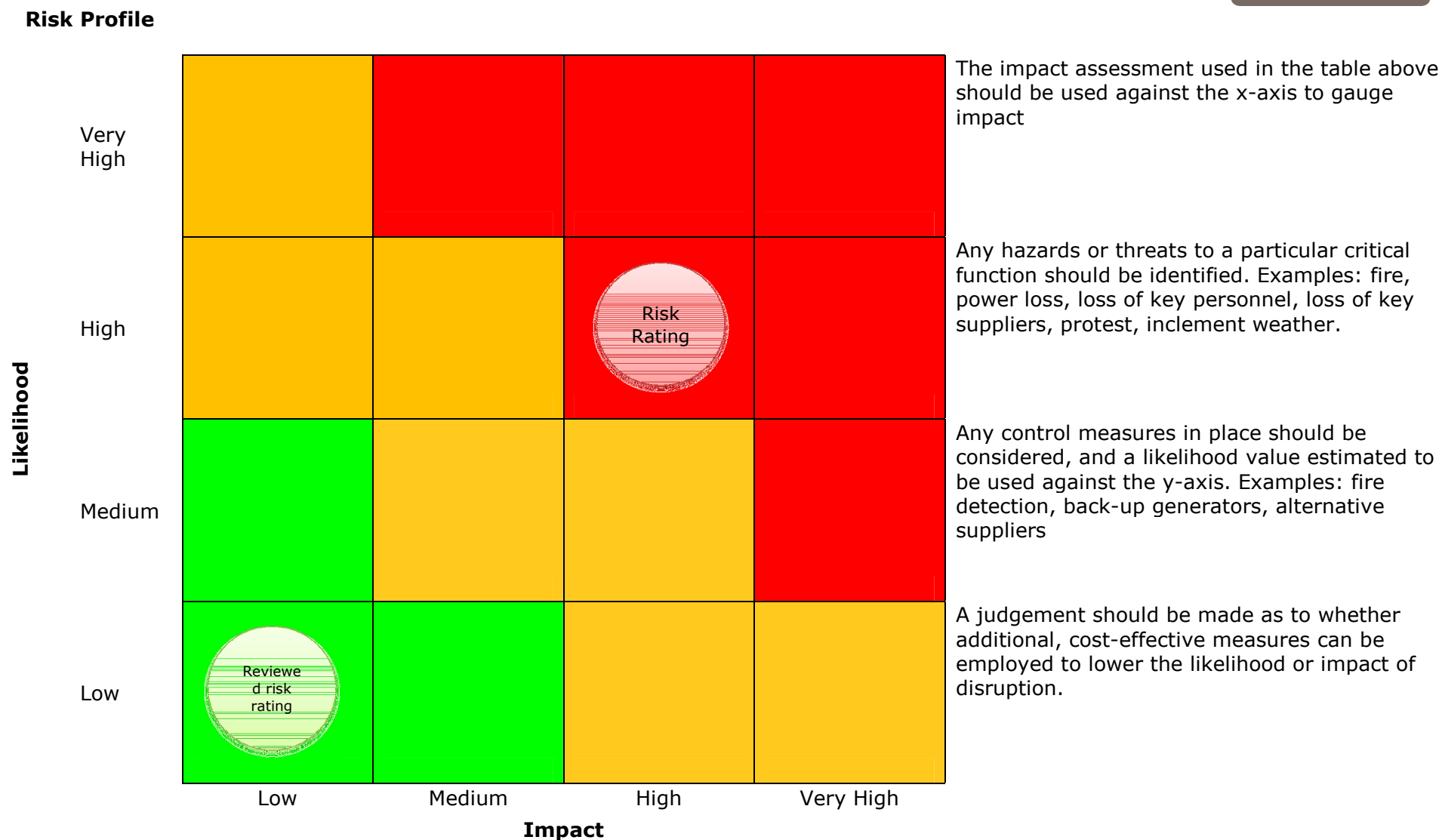
Activity/Process	Timing/Duration	Impact	Cost of disruption
e.g. Tissue Culture	Any time, up to 3 days	Delays labwork for project X	If less than 3 days, project continues after disruption, if more than 3 days, samples are no longer viable
e.g. Finance	Month End	Delays accounting	If less than a week, delay can be absorbed, if longer, reputational impact only

Appendix 3 – Example Impact Analysis template

This spreadsheet can be used to aggregate the Impacts from the Impact note sheet to gain a picture of the activities and dependencies within an MRC Establishment

Function Unavailable for:	Impact						Explanatory Comments Scores: 1 = Low 2 = Medium 3 = High 4 = Very high <i>Place a score of 1-4 in each box. Please see accompanying table for an indication of how to score</i>
	Staff	Operational difficulties	Reputation	Legal or Regulatory	Contractual obligation	Financial control	
Critical Research Function (1):							
2 days							
1 week							
2 weeks							
1 month							
3 month							
Critical Research Function (2):							
2 days							
1 week							
2 weeks							
1 month							
3 month							
Critical Research Function (3):							
2 days							
1 week							
2 weeks							
1 month							
3 month							
Critical Research Function (4):							
2 days							
1 week							
2 weeks							
1 month							
3 month							
Critical Research Function (5):							
2 days							
1 week							
2 weeks							
1 month							
3 month							

Area Scale	Staff Affected	Operational Difficulties	Damage to Reputation	Financial Control	Legal or Regulatory Obligation	Contractual Obligation	Direct or Indirect Cost (including cost of non-productive staff)
Low Score 1	Non-critical activities only affected.	Disruption requiring minimal work to catch up	Negative reports within community	Any loss of financial control recovered in month	Failure to meet informally stated standards	Contractual remedy possible	£10,000 to £50,000
Medium Score 2	Non-critical activities and some effect on critical activities	Disruption requiring extra work to catch up	Negative reports in one national publication	Loss of financial control recovered next month	Failure to meet regulatory or legal obligations	Legal action possible	£50,000 to £500,000
High Score 3	Substantial effect on critical activities in one section	Disruption requiring significant extra work to catch up	Negative reports in multiple national publications	Loss of financial control recovered in year	Failure results in legal action	Legal action likely	500,000 to £1M
Very High Score 4	Critical activities in multiple sections affected	Disruption to own and other units requiring significant extra work to catch up	Significant negative media attention on international scale	Loss of financial control delays year end process or impacts on subsequent years	Failure results in suspension of operations	Multiple legal actions and termination of contract likely	Over £1M



Appendix 4 – Recovery Requirements

A single sheet view of the recovery requirements for any function, department or process, with cumulative totals of requirements.

Critical Resource	Description	Usual Level	Minimum Level	Recover within					
				1 day	2 days	1 week	2 weeks	1 month	3 months
People	Researchers	<i>e.g. 4</i>	<i>e.g. 1</i>						
	Technicians	<i>e.g. 2</i>	<i>e.g. 1</i>						
	Support staff	<i>e.g. 2</i>	<i>e.g. 1</i>						
Premises	Desk Space	<i>e.g. 3 desks</i>	<i>e.g. 0</i>						
	Lab Space	<i>e.g. CL2 for 3 people, unsealed source lab for 1 person</i>	<i>e.g. CL2 for 1 person</i>						
Technology	Laptop/desktop	<i>e.g. 8 desktops</i>	<i>e.g. 1 laptop</i>						
	Email	<i>e.g. Available 24/7/365</i>	<i>e.g. Maximum 60 minute outage</i>						
	Internet	<i>e.g. 100Mb/s</i>	<i>e.g. 500Kb/s</i>						
	Telephones	<i>e.g. 2 landline, 8 mobile</i>	<i>e.g. mobile only</i>						
Information	Journal access	<i>e.g. All providers</i>	<i>e.g. Science Direct only</i>						
	Oracle	<i>e.g. Available 24/7/365</i>	<i>e.g. Maximum 60 minute outage</i>						
Supplies	Lab reagents	<i>e.g. All providers</i>	<i>e.g. 5 days until supply</i>						
	Office consumables	<i>e.g. All providers</i>	<i>e.g. 5 days until supply</i>						
	Animal diet & bedding	<i>e.g. All providers</i>	<i>e.g. 5 days until supply</i>						