



# Building Value through Enterprise Risk Management (ERM) in SingHealth

– A Scenario-based ERM Review Aiming at Reducing Vulnerability and Increase Resilience

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## INTRODUCTION

The SingHealth ERM Framework provides the overarching structure for the SingHealth ERM Programme. SingHealth Enterprise Risk Council (ERC), chaired by SingHealth Group Chief Risk Officer (GCRO) and comprising Group Directors for SingHealth’s key functional / domain areas and Chairs of the ERM Centres of Excellence, provides oversight guidance for ERM implementation across the SingHealth cluster.

## METHODOLOGY

### ERM Review – Determining the Scenario

The 15 domains leads under the ERC conducted the respective ERM Reviews based on the agreed scenario of “System failure for 7 days arising from power outage due to cyber-attack emanating from outside SingHealth”.

|               |                          |                                    |
|---------------|--------------------------|------------------------------------|
| Allied Health | Communications           | Education                          |
| Finance       | Human Resources          | International Collaboration Office |
| IPSQ          | IT / Medical Informatics | Medical                            |
| Nursing       | Operations               | Regional Health System             |
| Research      | Risk Services            | Service Quality                    |

### ERM Review – Aim

The aim of the ERM Review was for individual key domains to critically examine their existing work flow processes to assess effectiveness of mitigation measures in place to manage a protracted system downtime; and identify areas for change, if any, for enhanced performance; and / or need to implement additional mitigation measures to achieve the desired outcomes.

### ERM Review – Considerations

In the ERM Review, the domain leads would review the potential impact of the system failure from different perspectives pertaining to patient safety, on-going business operations, service delivery efficiency, reputation, and financial.

The effectiveness of current risk mitigation measures in place to address the potential impact, and the need for enhancement to the existing mitigation measures and/or to put in place new mitigation measures would also form part of the ERM review.

### ERM Review – Proposed Process

In the ERM Review, the 5-steps SingHealth ERM process was adopted:

- 1) Identify the objectives
- 2) Identify potential risk events
- 3) Examine current risk control measures
- 4) Priorities, select & implement appropriate risk controls
- 5) Monitor results and make changes as needed

#### Acknowledgement:

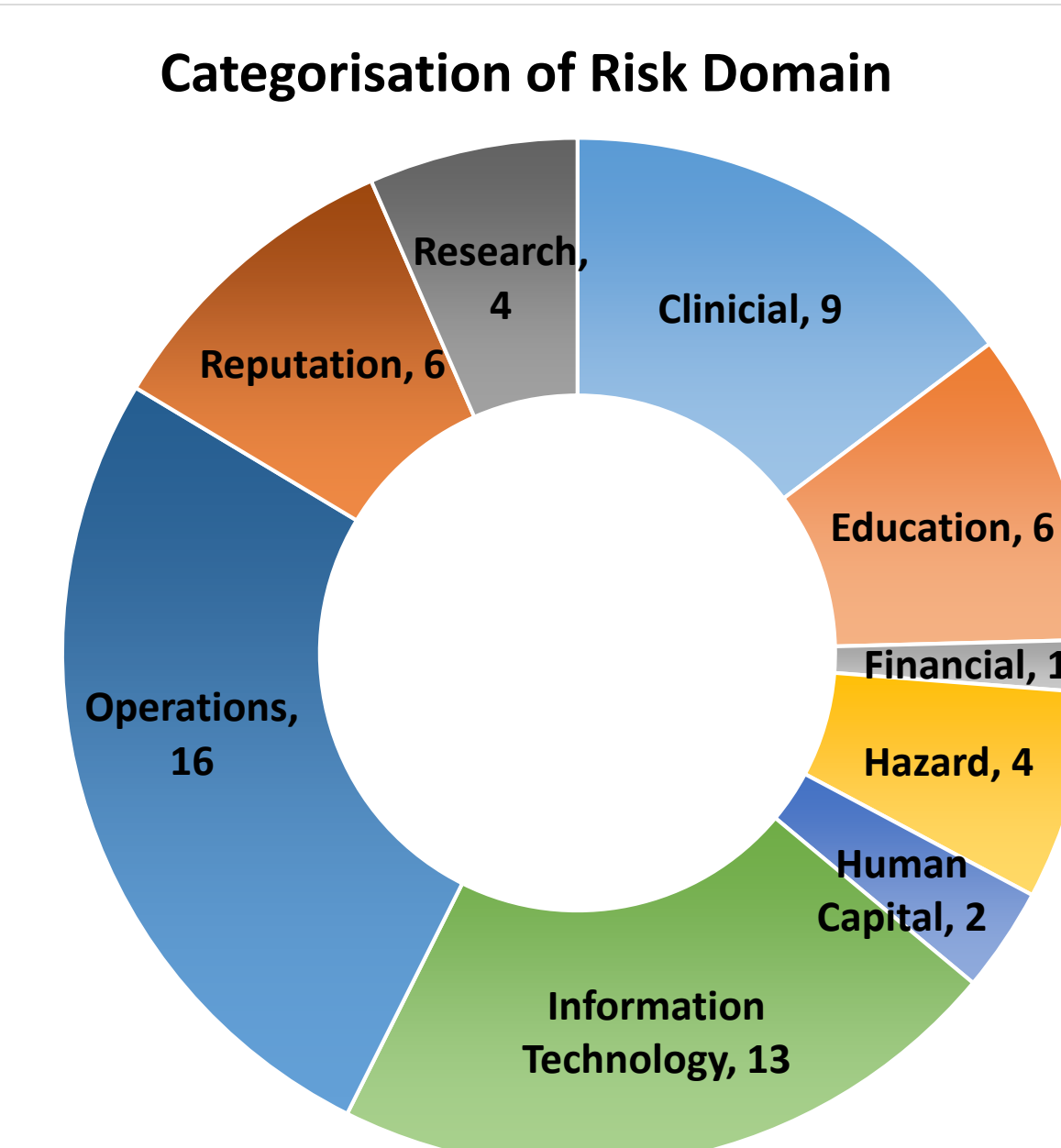
Special thanks to all ERC members, and their teams involved in the ERM reviews for their efforts conducting the ERM reviews – identifying the risks factors, assessing effectiveness of mitigation measures, identifying additional mitigation measures to improve risk management, and following up with the relevant stakeholders to close the loop.

## RESULTS

### Risk Identification

A total of 61 key risks from 34 key risk business areas have been identified.

16 of the key risks were related to interruptions on on-going business operations, while 13 were information technology associated. There were 9 key risks on patient safety related.



### Risk Evaluation and Mitigation

21 additional mitigation measures have been identified by various domains for implementation to strengthen the management of 15 key risk areas. Some of the additional actions included:

- Review staff list with VPN access to SingHealth Intranet and common shared drive
- Alternate site(s) for temporary storage of research samples and reagents
- Back up for all critical documents at various places for easy accessibility
- Review the timeline for media release

### ERC’s Recommendations

During the presentation of the results, active discussion was generated among the ERC members. Further recommendations included:

- Need for an overall holistic plan to maintain and top up emergency generators at Academia.
- Consideration for a central control & command over resources allocation and evacuation coordination.
- Need for an organizational and systematic approach in handling disruptions and recovery.

The additional inputs from the ERC members provided a broader view to the assessment and mitigation efforts in managing identified risks holistically and with an enterprise-wide perspective, thus breaking down the traditional silo approach to risk management.

### Follow Up by Functional Domains

The functional domains were requested to follow up with relevant internal & external stakeholders on ERC’s recommendations, to assure smooth operations and minimum impact on patient safety.

## CONCLUSION

The conduct of the ERM Review achieved the desired outcome to critically assess SingHealth’s readiness in respond to a protracted power outage. The review has also brought the different domain leads of both front and back end functions into the ERM conversation, to take an integrated and holistic view of the risks faced in the event of a power outage. This affirmed the SingHealth ERM process which calls for a systematic approach to management of total risks as an interrelated risk portfolio rather than as individual “silos”.