

Risk Assessment Management for Sport Activity in Singapore

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Risk management in sport is of vital importance in a litigious society that we live in today. The purpose of this study was to analyze and evaluate the safety risk assessment management in sports (RAM) guideline as proposed by Sport Singapore. A literature review based on legal aspects of risk management in sport, risk management practice of various countries, and previous studies of risk management in sport was conducted. On the basis of the literature review, similarities and differences between the Singapore risk assessment management model and other models were identified. An overview of elements and stages of risk assessment management was discussed to identify a common process. An evaluation regarding current risk assessment management practice adopted by Singapore was conducted and recommendations were made. Results showed that the sequential process of risk identification, risk estimation, risk evaluation, and risk treatment forms the basis of any risk assessment management model. A revised model for risk assessment management in sports in Singapore was proposed. The third stage of risk elimination in the RAM was replaced by risk estimation, in which the frequency and severity of identified risks are to be assessed. Risk treatment strategies were also incorporated into the revised model. Other recommendations include ongoing communication to stakeholders, monitoring and reviewing, implementation and documentation of the risk management plan. The findings of this study have provided a deeper understanding about the risk management practice in Singapore which sport organizations could use to better handle risk management in sport.

Key word: risk appraisal, risk management, sport organizations, sport facilities, sport activity

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Introduction

Risks are inherent in sport and even the safest programs can never avoid accidents and injuries (Appenzeller, 1998). Adding that to today's litigious society, lawsuits evolving from sport injuries or accident during sport involvement become inevitable (Bezdicek, 2009). Lawsuits are a form of financial burden and can be costly in terms of time, energy and, reputation (Bezdicek, 2009). Therefore, it is crucial that sport organizations incorporate appropriate procedures and precautions to ensure the safest possible environments for sport involvement (Miller & Rushing, 2002). Risks can be minimized by the way people perceive and manage them (Sekendiz, 2011). Previously, risks are managed when faced, or prevented solely based on intuition and common sense. In the present day, no longer is risk management a safety procedure conducted by common sense, experience and intuition, but an organized plan based on fundamental legal concepts, through which a business attempts to control and encounter the risks it faces (Williams et al., 2006). The American College of Sports Medicine (ACSM) defines risk management as practices and systems that businesses put in place to reduce or limit their exposure to potential liability and financial loss (Tharrett & Peterson, 2012).

Governance is considered as the process in which a network of organizations, steers itself, allocates resources, and exercises co-ordination and control (Rosenauc, 1995). Rightful information flow from governing bodies to relevant organizations ensures good understanding and serves as a guidance for managers to make timely and informed decisions (IOC, 2008). The website of a sports body is an ideal place to set out statutes, rules, regulations, vision, strategic plan and other policy positions and information (EUROPA, 2013).

In view of risk management in sport in Singapore, Sport Singapore being the national sports agency has proposed a guideline to safety risk assessment management in sports as Figure 1. The guideline was published on the Sport Singapore website which serves as a risk management framework for sport organizations in Singapore. The purpose of this study was to analyze and evaluate the safety risk assessment management in sports (RAM) guideline as proposed by Sport Singapore.

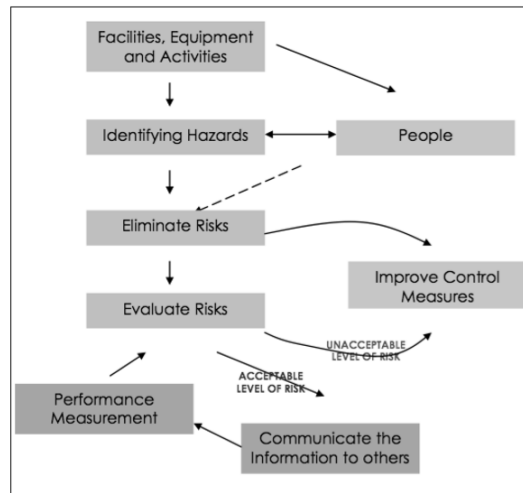


Figure 1. *Risk Assessment Management Process of Sport Singapore*

Based on the concept of risk management in sport activities, a literature review on peer-reviewed journals, government and not-for-profit sport organizations report, and dissertations and theses has been conducted. First, a review on legal aspects of risk management in sport was provided to understand how litigation affects the sport industry. Second, risk management practice across countries was examined to gain an understanding on the real-life image of risk management process adopted by the different countries. Countries involved in the study include the United Kingdom, England, Australia, New Zealand, Canada, India, and Malaysia. Third, previous studies on risk management models were presented to examine the already established elements and process of risk assessment management. All risk management models were presented in a chronological order to examine if there are changes in the process. On the basis of the literature review, similarities and differences between the Singapore RAM and other models were identified. An overview of elements and stages of risk assessment management was discussed to identify a common process. Finally, an evaluation regarding current risk assessment management practice adopted by Singapore was conducted and recommendations that may guide future risk management practice in Singapore were made.

Legal Aspects of Risk Management in Sport in Singapore

Risk is a peril or the possibility of exposure or harm (Farmer, Mulrooney & Ammon, 1996); or loss from a hazard such as personal injury, property damage, death, economic loss, or environmental damage (Kaiser & Robinson, 2005). Risk management is defined as the process of systematically identifying situations that may expose participants to unreasonable risk or harm, and then, taking

corrective actions to reduce or eliminate this exposure (Brown, 2001). Spengler, Connaughton and Pittman (2006, p. 2) described risk management in sport as “reducing or eliminating the risk of injury and death and potential subsequent liability that comes about through involvement with sport and recreation programs and services”. The safety of facility event attendees, patrons, spectators and event participants is of primary concern to the facility manager (Madden, 1998).

Gallup (1995) stated that lawsuits against physicians and healthcare providers have been increasing, along with the severity of damages awarded, and the most common complaint filed is negligence. This is further supported by Van der Smissen (2001) who stated that though there are many areas of law that are important to a facility manager, the greatest numbers of lawsuits brought against a provider are based in negligence liability.

Negligence can be defined as the omission to do something that a reasonable man, guided by those considerations that ordinarily regulate the conduct of human affairs, would do, or doing something that a prudent and reasonable man would not do (Black, 1979). Four negligence elements have to be present for a person to recover under a negligence claim. They are: a) owing someone a duty, b) breaching that duty, c) the breach of that duty was the proximate cause of the person’s injury and d) the person was actually injured (Van der Smissen, 1990).

In the case of *Yeo v. National University of Singapore* (2007), the plaintiff brought a claim against NUS and Hydro Aquatic for negligence as she alleged that both parties failed in their duty to ensure the lifeguards were “competent and well-trained to respond expeditiously” that resulted in her husband’s death. A 40-year-old IT manager with the university suffered a sudden cardiac arrest while he was taking a swim. Yeo’s friend, whom witnessed his distress, swam over to help him. A lifeguard then came to help. Resuscitation efforts failed and Yeo was pronounced dead in the hospital. The two lifeguards on duty were found to be negligent because they were not surveying the swimming pool as they should have, which meant they were late in reaching Yeo, who had been struggling in the water. However, it was investigated that the lifeguards would not have been able to save Yeo because of his existing ischemic heart condition. The High Court dismissed the negligence suit on the basis that though the two lifeguards had been negligent in the performance of their duties, their negligence did not cause Yeo’s death.

In *Boey v. Singapore Sports Council* (2009), action was brought against the Singapore Sports Council; the operator of Hougang Swimming Complex, for failure to station qualified lifeguards at the pool to ensure the safety of users. Boey who was participating in a life- saving course, was found submerged and motionless in the pool by life-saving instructors. The instructors lifted the teenager out and performed cardio-pulmonary resuscitation (CPR) on him. The lifeguards arrived later and assisted in administering CPR using an automated external defibrillator. It was alleged that the

lifeguards on duty that day, who were employees of SSC, had failed to “provide timely and effective use of rescue and resuscitation equipment, and did not have effective safety rules or a safe system for swimming and life-saving courses.” The defendant denied the allegations and claimed that the instructors from Angel Lifesaver School has caused or contributed to Boey’s injuries by their negligence.

Analysis of Risk Management Models and Studies

According to Sport Singapore (n.d), the Risk Assessment Management (RAM) is a common sense approach to control risk. A risk is defined as the likelihood that a hazard will have an impact on people or the environment (Sport Singapore, n.d.). Moreover, a risk factor is a condition, object or situation that may be a potential source of harm (Sport Singapore, n.d.). Sport Singapore divided the RAM into six stages. The first stage comprises of identification of facilities, equipment and activities. Facilities and equipment that will be used with the activities have to be identified, as they are sources of risks to participants, officials, spectators, public or the disabled. The second stage involves identification of risks associated with the use of these facilities and equipment during activities, such as danger arising from the playing on the artificial playing surface. The range of risks can vary widely across sports. Certain risks will only be present at some events, for instance the presence of large crowds at major events. All personnel, directly or indirectly affected by these risks, should be identified. It is essential to identify whether different participant groups, such as Chinese/Malay/Indian/Others, are affected by the risks in different ways. Sport Singapore suggested risk elimination as the third stage of the RAM after risks are identified. Following which, risk evaluation makes up the fourth stage of the RAM whereby risks are evaluated as acceptable or unacceptable. The fifth stage of the RAM consists of two separate stages of improving control measures or communication, depending on the evaluated risk. Measures are taken to reduce unacceptable risks to acceptable levels, whereas information regarding risks that are within acceptable level is communicated to others (refer to Figure 1). Finally, performance measurement is defined as the last stage of the RAM whereby risks are re-evaluated after performance is measured.

In October 2004, Sport England published “The Orange Book” that consists of risk management principles and concepts. The risk management model as introduced by Sport England is a four-stage process (refer to Figure). The whole risk management process has to function in an environment whereby risk appetite has been defined. Risk appetite refers to the amount of risk that an organization is prepared to accept, tolerate, or be exposed to at any point in time (Sport England, 2004). Risk identification was suggested as the first step in building the organization’s risk profile. Identified risks should be related to objectives in order for risks to be assessed and prioritized in relation to objectives.

These risks should be assigned to an owner who has the duty of ensuring that each risk is managed and monitored over time. Adopting an appropriate approach or tool for identification of risk such as commissioning a risk review or a risk self-assessment was recommended. Risk assessment makes up the second step in the risk management model. A clearly structured framework, such as risk matrix, in which both likelihood and impact are assessed for each risk must be present. The purpose of the risk matrix is to facilitate monitoring and identification of risk priorities. After which, the risk is compared to risk appetite to determine the extent of action required. Care should also be taken to capture information about the inherent risk; the exposure arising from a specific risk before any action has been taken to manage it (Sport England, 2004). This will provide an understanding on the risk exposure should risk control fail. The third stage in the risk management model involves addressing the risk. This includes tolerating risk, treating risk, transferring risk, and terminating the risk. Another option of “taking the opportunity” should be considered whenever tolerating, treating or transferring a risk. Lastly, reviewing and reporting risk was mentioned as the final step in the risk management model. This serves to monitor if the risk profile is changing and whether further action is necessary. The overall risk management process should be subjected to regular review to deliver assurance that it remains appropriate and effective. Communication and learning were discussed as an ongoing process that runs through the whole risk management process. Documentation was also mentioned as a critical element to effective management of risk.

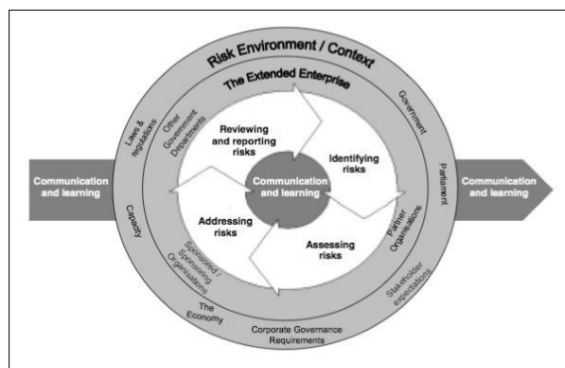


Figure 2. Risk Assessment Model of Sport England

UK Welsh Sports came up with a guideline for safety in sport for UK National Governing Bodies (NGBs) that consists of a five-stage risk assessment process in Figure 3. Facilities, equipment and activities are to be first identified. Risk identification involves identifying the risks that arises from the use of the facilities and equipment in the second stage. This includes assessing the range and

suitability of facilities for defined activities, appropriateness of equipment supplied for the use of participants, and various participant groups using the facility. Next two stages of risk estimation and risk evaluation require a procedure for estimating the probability and consequences of the risk in order to determine if risk is of an acceptable level. It was mentioned that the fifth stage of identification and implementation of control measures is the most important aspect of the risk assessment process to treat risks to acceptable levels. Measures include incorporating physical controls, management controls, and personal controls. UK Welsh Sport mentioned that the overall information about generic risks and control measures are communicated to all stakeholders. Performance has to be measured to complement the risk assessment process.

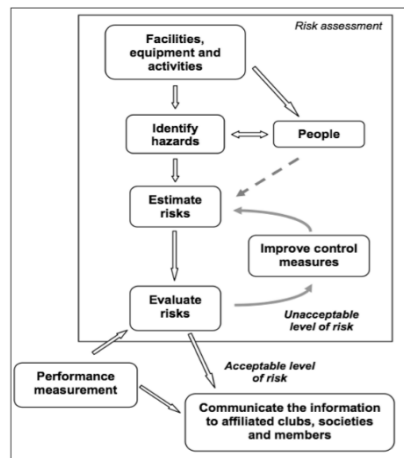


Figure 3. Risk Assessment Process of UK Welsh Sport

Standards Australia and Standards New Zealand jointly published a handbook for managing risk in sport and recreation in 2010. The risk management process involves a five-stage process and two ongoing activities (refer to Figure 4). The first stage as set out in the risk management process is establishing the context in which the organization functions. The organization's internal factors (e.g. goals and objectives), external factors (e.g. environment) and business structure have to be taken into consideration as they affect risks. Risk categories and risk evaluation criteria have to be developed in this stage. Establishing the risk evaluation criteria at this stage ensures that the risk criteria and tolerances are first defined by the business and stakeholder needs rather than by the risks themselves later in the risk management process. The second stage of risk identification involves determining potential losses the organization and its people face, and establishing how the risk could happen. Risk analysis makes up the third stage of the risk management process, which involves determining the

risk impact and its frequency while considering existing controls that are currently in place. The fourth stage suggested evaluation of risk against the risk evaluation criteria that was developed while establishing context. The overall level of each individual risk has to be established to determine whether each risk is acceptable or unacceptable. Risk treatment is proposed as the final stage and it involves identifying options (avoid, reduce, share, retain risk) for responding to individual risks, assessing and selecting the most appropriate options, compiling the selected options into a plan, and implementing the plan. The two recommended ongoing activities are continuous communication and consultation with internal and external stakeholders, and monitoring and reviewing the entire risk management process (the context and risks, the treatment plan and results). It was discussed that entire risk management process should be documented using a risk register.

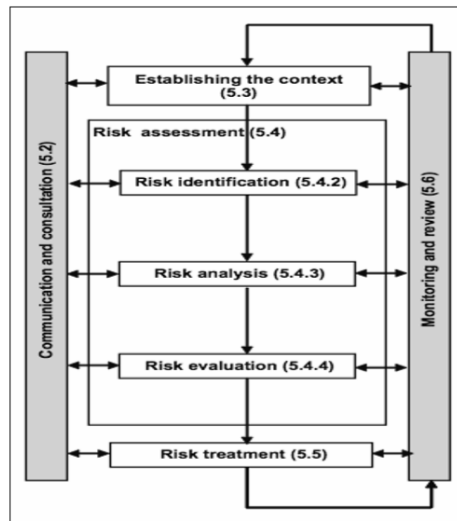


Figure 4. *Standards Australia/ Standards New Zealand – Risk Management Process*

Similarly, in 2010, 2010 Legacies Now introduced a risk management guide for community sport organizations in Canada. Risk identification is the first stage in the risk management process. General categories of risk include governance risks, infrastructure risks, financial risks, and operational/ program risks, compliance risk, and communication risk. The second stage is risk assessment, which involves determining the risk possibility and consequences. The magnitude of a risk is then determined through the combined measure of its possibility and its consequences, before they are assessed as acceptable or unacceptable and prioritized. Risk treatment was defined as the third step of the risk management process in which risk treatment methods includes avoiding, transferring, reducing, or accepting the

risk. Risks are treated based on risk priority. Articulating risk management commitment was suggested as the final step of the risk management process. It involves deciding the additional risk treatment measures the organization is prepared to implement at the present or in the near future. It was proposed for a risk registry to be produced to keep track of the risk management process. The risk registry provides a mechanism to monitor and evaluate the risk over time. Communication on a frequent basis was recommended to help inform, educate and motivate stakeholders. The risk registry should be shared and training should be provided to staff.

Other than the risk management guidelines proposed by sport governing bodies in the western countries, Asian countries such as India has introduced a risk management guide for managing crowd at events and venues of mass gathering. Sport organizations could consider such guidelines when organizing major sporting events. The guide suggested a three-stage process. Identification of threats and causes is the first step whereby planners can draw upon existing information to identify the range of threats and causes at a given place of mass gathering. The second step comprises of risk assessment and planning. Assessing risk should involve understanding the probability and severity that a specific potential threat will occur. Finally, a course of action should be prepared as the last stage.

Similarly, Malaysia has developed a risk management guideline, known as HIRARC for occupational safety and health that could also be used by sports organizations in ensuring safety. The first step involves classifying activities in accordance to scale of activity, geographical or physical area. The second step is risk identification from three main groups of health risks, safety risks, and environmental risks. The third step occurs whereby risk level is analyzed and estimated based on likelihood and severity to determine the overall magnitude of risk. Lastly, the organization decides if the risk is tolerable and control measures are applied if necessary. The effectiveness of controls is evaluated and monitored regularly. Documentation, consultation, providing information, instruction and training to relevant parties are other essential components recommended as part of the risk management process.

The various models and previous studies are summarized in two tables (refer to Table 1 and Table 2). Both the RAM and UK Welsh Sport model suggested identification of facilities, equipment and activities as the first stage or the risk assessment process. This stage is similar to the first stage of establishing context as proposed by Standards Australia (SA) and Standards New Zealand (SNZ) whereby the external environment in which the respective organization operates has to be taken into consideration. However, SA and SZ further elaborated that there is a need to understand the organization's internal situation such as understanding goals and objectives. This is supported by Sport England, which indicated that objectives have to be understood for risk identification.

The second stage of the RAM is in accordance to the stage of risk identification as proposed

by all models. Identified risks are categorized and grouped. Similar to Carpenter's (1995) Risk Management Strategy Model, Ammon, Southall and Nagel's (2010) D.I.M. process, and the UK Welsh Sport model, the models suggested risks arising from facilities and equipment to be identified. Other models suggested different categorizations of risk.

A major difference lies in the third stage of risk elimination as described in the Singapore's RAM model. All other plans described risk estimation/ evaluation/ classification/ assessment as the next stage after risk identification. Though different terms were used, all models indicated the importance of determining the probability/ likelihood/ frequency of a risk occurring, as well as the severity/ impact/ consequences arising from the risk. A risk matrix is usually used to reflect the overall risk level of a particular risk and prioritize risk, in order to determine the most appropriate risk treatment method. Some models divided this stage into two separate stages. The initial stage determines the frequency and severity of each individual risk. This stage is missing in the current Singapore RAM model. The next stage involves determining the overall risk level to evaluate if a risk is of an acceptable level, as reflected in the fourth stage of the Singapore RAM.

The fifth stage of the RAM of improving current control measures to treat unacceptable risks to acceptable levels is similar to the stage of risk treatment/ control as discussed by all plans. Generally, all models except Singapore, suggested four types of risk treatment: a) risk avoidance/ elimination, b) risk transfer, c) risk retention, and d) risk reduction. Risk elimination that was suggested as the third stage of the RAM was proposed as an option under risk treatment by all other models. At this stage, the RAM also indicated that only information regarding risks that are within acceptable level is communicated to others. However, all other models described that communication with stakeholders should include information about all aspects of risk rather than risks that are of an acceptable level. In addition, most models mentioned communication as an ongoing process that runs through the whole risk management process instead of being a distinct stage by itself.

The last stage of the RAM in which performance is measured is similar to the stage of reviewing and monitoring of the risk management plan. Yet, similar to communication, most organizations recommended this stage as an ongoing process. Another notable difference is that though all risk management models proposed documentation throughout the risk management process, this is not mentioned in the RAM. Implementation and management of the risk management plan (i.e. carrying out the risk management plan) was mentioned in most of the previous studies but it was not emphasized by sport organizations as part of the risk assessment process.

Table 1. *Summary of Risk Management Models on Countries*

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Other elements
Sport Singapore	Identification of Facilities, equipment & actives	Identification of hazards associated with facilities, equipment, & people	Elimination of risks	Evaluation of risks Acceptable / Unacceptable		Communication of information to others / Performance measurement
Sport England	Identifying risk	Assessment risk Likelihood / Impact	Addressing risk Tolerating / Treating / Transferring/ Terminating risk	Reviewing & Reporting Risk Monitoring risk profiles		Ongoing process of communication & learning
UK Sport	Identifying of facilities, equipment, & activities	Identification of hazards associated with facilities, equipment, & people	Elimination of risks Probability / Consequences	Evaluation of risks Acceptable / Unacceptable	Implementing control measures Transfer / physical / Mgt personnel	Ongoing process of communication & learning
Australia / New Zealand	Establishing the context Determining factors / risk evaluation criteria	Risk Identification Determine potential losses / How risk could happen	Risk Analysis Impact / Frequency / Existing controls	Risk Evaluation Overall level of risk / Acceptable / Unacceptable	Risk Treatment Avoid/ Reduce / Share / Retain	Ongoing process of communication & consultation with stakeholders / monitoring / review
Canada	Identifying risk Governance risks / Infrastructure risks/ Financial risks / Operational risks	Assessment risk Likelihood / Consequence	Treating risks Avoid / Transfer / Reduce / Accept	Determine future risk management commitment		Ongoing process of communication & Keep track of it all through a risk registry
India (Crowd management)	Identify threat & causes	Assessment risk Frequency / Severity / Difficulty of detection	Develop course of action Identify resources needed			Communication & Documentation
Malaysia HIRARC	Classify work activities	Risk identification Health hazard / Safety hazard / Environmental hazard	Analyze and estimate risk Likelihood Severity	Prepare & implement risk control action plan		Review & Monitoring control

Table 2. Summary of Risk Management Process based on previous studies

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Kaiser (1986)	Risk Identification	Risk Evaluation Probability / Severity / Financial resources	Risk Treatment Selection Avoid / Reduce / Retain / Transfer	Implementation of Risk Mgt Plan Creation of a policy & procedures manual	
Miller (1989)	Risk Identification	Risk Assessment Probability / Impact the financial loss	Risk Classification Magnitude / Frequency	Risk Treatment Avoid / Accept / Transfer / Reduce	Risk Evaluation Continues phase / Effectiveness of Risk Mgt Program
Van der Smissen (1990)	Creation of Statement of Policy	Risk analysis & Control Risk Identification Risk Evaluation Risk Control	Implementation of Risk Mgt plan Selection of Control approach / Operation into procedures / Monitoring for effectiveness		
Carpenter (1995)	Risk Identification Facilities & Equipment / Staff / Participants / Policies & Procedures / Programs offerings	Risk Evaluation Severity / How would the risk affect the organization's reputation or finances?	Risk Mgt Remove / Reduce / Transfer		
Clement (1998)	Risk Identification	Risk Evaluation Probability Severity Magnitude: # of people	Risk Control Accept / Transfer / Reduce / Eliminate		
Mulrooney & Farmer (1998)	Risk Recognition & Identification Weather / Event type / Patron demographic / Facility location	Risk Evaluation # of occurrences Amount of monetary loss	Risk Treatment Avoid / Shift / Keep / Decrease	Creation of a standard operating procedure (SOP) / Risk Mgt Manual	
Hronek & Spengler (2002)	Risk Identification Safety / Negligence Property Loss Contract Personnel	Risk Evaluation Frequency / Severity	Risk Treatment Retain / Reduce / Transfer / Avoid	Risk Implementation Repaired / Changed / or constructed to address the risk	
Ammon, Southall & Negel (2010)	Develop the plan Risk Identification / Risk classification / Risk Treatment / Assigned risk manager & supportive administrators	Implementation the plan Acquiring safety equipment or legal safety compliance / Forming Risk Mgt committees / Communication to all employees	Manage the plan Assessment of risk mgt plan to measure progress towards goals and objectives?		

Discussion and Conclusion

Despite the various versions of risk management models proposed by different authors or across countries over the years, all of the plans are similar in that they discuss the sequential stages of a) risk identification, b) risk estimation, c) risk evaluation/ classification/ assessment, and d) risk treatment as the basis for any risk management plan. The primary distinction between risk management models is based on a number of stages and names of the stages.

All plans as discussed in this study does not recommend risk elimination, which was proposed by Sport Singapore as the third stage of the RAM, as a stage after risk identification. Rather, risk elimination should fall under risk treatment. Risk estimation should be incorporated in the RAM in replacement of risk elimination as the third stage. Risk estimation involves estimating the risk frequency and severity of identified risks, and establishing the overall risk level. A risk matrix could be used to aid in this process. This aids in the evaluation of whether a risk is of acceptable level before the most appropriate treatment can take place.

It was also not described by Sport Singapore on how current control measures could be improved whereas all risk management models commonly suggested four risk treatment methods. First, severe risks with high degree of severity and probability should be avoided (e.g. eliminate the activity). However, eliminating an activity is not an attractive option; hence it should only be implemented as a last resort. Second, risk transfer could be used to shift the financial responsibility for a loss to a third party. Risk can be transferred through purchasing insurance, using independent contractors, waivers and indemnification clauses. Third, risk retention could be used for risks that are of low to medium risk level. This holds the organization financially responsible for any injuries or loss that may occur. This treatment is usually used for minor payouts such as first-aid treatment, and ambulance service. Last, risk reduction could be used in conjunction with risk transfer and risk retention. It involves trying to restrict the risks and can come in various forms such as requiring employees to undertake more training, using preventive maintenance, putting up proper signage, hiring qualified personnel, selecting appropriate venues, abiding by laws and codes, implementing standard operating procedures, and improving physical protection systems.

Furthermore, the entire risk management process; and not only information regarding risks that are within acceptable level as proposed by Sport Singapore, should be communicated to stakeholders. Monitoring and reviewing of the risk management plan should also be considered as an ongoing process. Documentation of the risk management plan should be incorporated as it is commonly practiced by sport organizations from other countries. Hence, a revised model for RAM in sport in Singapore was proposed to incorporate the aforementioned changes (refer to Figure 5 and Figure 6).

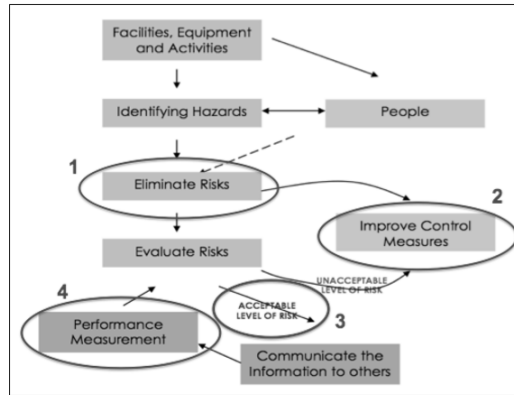


Figure 5. Recommendations for Changes in the Singapore Risk Assessment Management Model

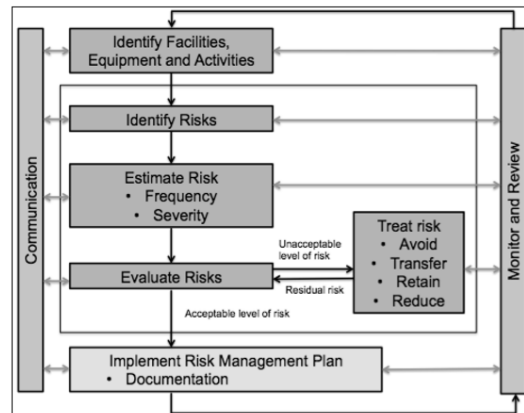


Figure 6. Revised Model for the Singapore Risk Assessment Management

Litigation arising from sport-related accidents has always been a concern around the world. Sport Singapore recognizes the need for a risk assessment management guideline for sport organizations in Singapore. The results of this study provide valuable information on the risk assessment management process in Singapore and highlight the areas in which future improvements can be made. The limitation of the study lies in that the revised model is suggested based on risk management models from other countries and past research studies that are mostly conducted in the United States. Hence, research on the practicability and efficiency of the revised model to be used by sport organizations in Singapore should be conducted in future. Future research could also include event risk management in sport.

Sport law experts have created many risk management models over the years. This study has provided an in-depth understanding of the risk management process and a current review of risk management practices around the world. No particular risk management plan is better than another. Rather, a risk management plan has to be developed depending on the context that the organization operates in. This study has also provided a deeper understanding about the current risk management practice in Singapore. As such, sport organizations in Singapore could use the findings of this study to better handle risk management in sport.

References

- Ammon, R., Southall, R. & Nagel, M. (2010). *Sport facility management: Organizing events and mitigating risks*. Morgantown, WV: Fitness Information Technology.
- Appenzeller, H. (1998). Risk management in sport. In H. Appenzeller (Ed.), *Risk management in sport* (pp. 5-10). Durham, NC: Carolina Academic Press.
- Australia. Standards Australia (2010). *Guidelines for managing risk in sport and recreation organizations*. HB 246:2010. Retrieved from [http://shop.standards.co.nz/catalog/246:2010\(HB\)/scope](http://shop.standards.co.nz/catalog/246:2010(HB)/scope)
- Bezdicek, P. (2009). *Risk Management Practices in High School Athletic Departments*. Unpublished manuscript, University of Wisconsin-La Crosse.
- Black, H.C. (1979). *Black's law dictionary* (5th ed.) St. Paul, MN: West Publishing Co. Brown, M.T. (2001). Risk identification and reduction. In D.J. Cotton, J.T. Wolohan, & T.J. Wilde (Eds.). *Sport law for recreation and sport managers* (pp. 279-291). Dubuque, IA: Kendall/Hunt Publishers.
- Canada. 2010 Legacies Now (2010). *Risk Management Guide for Community Sport Organizations*. Retrieved March 16, 2015, from <http://viasport.ca/sites/default/files/resources/Risk%20Management%20Guide.pdf>
- Carpenter, L. J. (1995). *Legal concepts in sport: A primer*. Reston VA: The American Alliance for Health, Physical Education, Recreation and Dance.
- Clement, A. (1998). *Law in sport and physical activity* (2nd ed.). Aurora, Ohio: Sport and Law Press, Inc.
- England. Sport England (2004). *The Orange Book Management of Risk - Principles and Concepts*. Retrieved March 16, 2015, from <https://www.gov.uk/government/publications/orange-book>
- Europe. EUROPA (2013). *EU Work Plan for Sport: Principles of good governance in sport*. Retrieved from http://europa.eu/legislation_summaries/education_training_youth/sport/ef0029_en.htm
- Farmer, P. J., Mulrooney, A. L., & Ammon, R., Jr. (1996). *Sport facility planning and management*. Morgantown, WV: Fitness Information Technology, Inc.

- Gallup, E.M. (1995). *Law and the team physician*. Champaign, IL: Human Kinetics.
- Garza v. Edinburg Consolidated Indp. School Distr., 576 S.W. 2d 916 (Tex. Civ. App. 1979).
- Hronek, B. B., & Spengler, J. D. (2002). *Legal Liability in recreation and sports* (2nd ed.). Champaign, IL: Sagamore Publishing.
- India. Government of India (2014). National Disaster Management Authority. Retrieved from <http://www.ndma.gov.in/images/pdf/managingcrowdsguide.pdf>
- International Olympic Committee (2008). Extract of the Olympic and Sport Movement Congress Recommendation 41: Basic Universal Principles of Good Governance of the Olympic and Sports Movement.
- Kaiser, R. A. (1986). *Liability and law in recreation, parks, and sports*. Englewood Cliffs, NJ: Prentice-Hall.
- Kaiser, R., & Robinson, K. (2005). Risk management. In *Management of park and recreation services*. Washington DC: National Recreation and Park Association.
- Madden, T. D. (1998). Risk management and facility insurance. In T. D. Madden (Ed.), *Public assembly facility law* (pp. 199-230). Irving, TX: International Association of Assembly Managers.
- Malaysia. Ministry of Human Resources. Guidelines for Hazard Identification, Risk Assessment and Risk Control (HIRARC). Retrieved from http://fbme.utm.my/wp-content/uploads/2014/01/ve_gl_hirarc.pdf
- Miller, A. W. (1989). Risk management. In G. Nygaard & T. Boone (Eds.), *Law for physical educators and coaches* (pp. 419-437). Columbus, OH: Publishing Horizons.
- Miller, J., & Rushing, G. (2002). Risk management practices of university physical education activity supervisors. *Journal of Legal Aspects of Sport*, 12(2), 117-131.
- Mulrooney, A. L., & Farmer, P. J. (1998). Risk management in public assembly facilities. In H. Appenzeller (Ed.), *Risk management in sport* (pp. 267-281). Durham, NC: Carolina Academic Press.
- New Zealand. Standards New Zealand (2004). Guidelines for Risk Management in Sport and Recreation. SNZ HB 8669:2004. Retrieved from <http://www.sportnz.org.nz/assets/Uploads/attachments/managing-sport/strong-organisations/Risk-Management-Toolkit.pdf>
- Rosenau, J. (1995). Governance in the twenty-first century. *Global Governance*, 1(1), 13-43.
- Sekendiz, B. (2011) An Investigation of Risk Management Practices in the Health and Fitness Facilities in Queensland: Minimising the Likelihood of Legal Liability. Unpublished manuscript. Bond University.
- Singapore. Sport Singapore (n.d.). Simple Guide to Safety Risk Assessment Management in Sports. Retrieved from http://www.sportsingapore.gov.sg/~media/corporate/files/sports_education/sports_safety/safety_resources_and_useful_links/safety_risk_assessment_management_in_sports.pdf

- Spengler, J., Connaughton, D. P. and Pittman, A. T. (2006) Risk management in sport and recreation, Human Kinetics, USA.
- Tharrett, S. J. and Peterson, J. A. (eds.) (2012) ACSM's health and fitness facility standards and guidelines, 4th edn., Human Kinetics, Champaign, IL. United Kingdom. UK Welsh Sport (n.d.). Safety in Sport: Guidance for UK National Governing Bodies. Retrieved from <http://www.welshsports.org.uk/files/236.pdf>
- Van der Smissen, B. (1990). Legal Liability and risk management for public and private entities. Cincinnati, OH: Anderson Publishing Co.
- Van der Smissen, B. (2001) Elements of negligence. In D. Cotton, J. T. Wolohan, & T. J. Wilde (Ed.), Law for recreation and sport managers (pp. 37-45), Dubuque, IA: Kendall/Hunt Publishing Company.
- Williams, R., Bertsch, B., Dale, B., Wiele, T. v. d., Iwaarden, J. v., Smith, M. and Visser, R. (2006) "Quality and risk management: What are the key issues? ", The TQM Magazine, 18(1), pp. 67-86.

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